

**LEARNING OUTCOME
BASED
VOCATIONAL CURRICULUM**

Class- XI (2018-19)

Sub Code	Course Name XI (2018-19)	821	Media
801	Retail	822	Taxation
802	Information Technology	823	Cost Accounting
803	Web Application	824	Office Procedures & Practices
804	Automotive	825	Shorthand (English)
805	Financial Markets Management	826	Shorthand (Hindi)
806	Tourism	827	Air-conditioning & Refrigeration
807	Beauty & Wellness	828	Medical Diagnostics
808	Agriculture	829	Textile Design
809	Food Production	830	Design
810	Front Office Operations	831	Salesmanship
811	Banking	832	Music Production
812	Marketing	833	Business Administration
813	Health Care	834	Food Nutrition & Dietetics
814	Insurance	835	Mass Media Studies
815	X-Ray Technician	836	Library & Information Science
816	Horticulture	837	Fashion Studies
817	Typography & Computer Application	838	Applied Physics
818	Geospatial Technology	839	Applied Chemistry
819	Electrical Technology	840	Applied Mathematics
820	Electronic Technology		

SECTOR: Retail (801)

JOB ROLE: Sales Associate

(QUALIFICATION PACK: Ref. Id. RAS/Q0104)

Class- XI (2018-19)

1. COURSE OVERVIEW

COURSE TITLE: Retail - Sales Associate

A retailer is one who stocks the manufactured goods and is involved in the act of selling to the final customer or consumer, at a margin of profit. Retailing is the last link that connecting the individual consumer with the manufacturing and distribution chain. It adds value in terms of bulk breaking and providing a wide variety of goods and services to customers as per their needs.

The retail industry is divided into organized and unorganized sectors. Organized retailing refers to trading activities undertaken by licensed retailers, that is, those who are registered for sales tax, income tax, etc. These include the corporate-backed hypermarkets and retail chains, and also the privately owned large retail businesses. Unorganized retailing, on the other hand, refers to the traditional formats of low-cost retailing, like, the local kirana shops, owner manned general stores, paan/beedi shops, convenience stores, hand cart and pavement vendors, etc.

Organized retail can be categorized by the type of products retailed as well as the by the different kind of retail formats. The major retail formats include Department store, Supermarkets, Hypermarket, Specialist Stores, Convenience Stores, and Kiosks. The various operations involved in store operation and management include Store Operations, Back end operations, Merchandising, Logistics and Distribution, Marketing, Procurement/Purchase, and Corporate Services.

The major task of a sales associate is to sell a company's products by demonstrating and specifying product quality. He is also responsible for ensuring that customers are aware of all the promotions that are in demand as per needs of the customers are led to their choice of product. In large retail stores, new customers always become a tad confused as they do not know where to look for what they want. It is the duty of a sales associate to ensure that each customer is directed where they want to go. They may accompany customers to the correct aisle.

After completion of this course the learner would be able to work as sales associate in organized retailing to guide the customers in finding merchandise, introduce customers to new merchandise, highlight product features in order to promote sales and also guide to the Retail Sales Assistants. He/she interact with customers to understand and service customer needs with specialization leading to maximization of business in a retail environment. He/she needs to be physically fit to withstand working in a retail environment whilst being customer responsive. They need to have excellent product knowledge, interpersonal and listening skills.

COURSE OUTCOMES: 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;

- Process credit applications for purchases in retail business.
- Help to keep the store secure in retail business.
- Help to maintain healthy and safety aspects in retail business.
- Demonstrate products to customers in retail stores.
- Help the customers in choosing right products in retail stores.
- Provide specialist support to customers facilitating purchases in retail stores.
- Maximize sales of goods & services in retail stores.
- Provide personalized sales & post-sales service support to the customers.
- Resolve customer concerns in retail stores.
- Organize the delivery of reliable service to the customers.
- Improve customer relationship in retail business.
- Monitor and solve service concerns in retail stores.
- Promote continuous improvement in service to the customers.
- Work effectively in formal team in retail stores.
- Work effectively in retail organization.
- Create a positive image of sales associate & organization in the customer's mind.

COURSE REQUIREMENTS: The learner should have the basic knowledge of commerce, management specially retailing aspects.

COURSE LEVEL: This is an Intermediate level course. On completion of this course, a student can take up a Diploma/Degree level course for a job roles in Team-Leader, Departmental – Manager and Visual Merchandiser.

COURSE DURATION: **265 Periods**
Class XI: 265 Periods

2. SCHEME OF UNITS

This course is a planned sequence of instructions consisting of Units meant for developing employability and vocational competencies of students of Class XI opting for vocational subject along with general education subjects. The unit-wise distribution of hours and marks for Class XI is as follows:

CLASS XI RETAIL (801) 2018-19			
Units		No. of Periods for Theory and Practical 265	Max. Marks for Theory and Practical 100
Part A	Employability Skills		
	Unit 1: Communication Skills –III	20	10
	Unit 2: Self-management Skills –III	15	
	Unit 3: Information and Communication Technology Skills – III	10	
	Unit 4: Entrepreneurial Skills – III	25	
	Unit 5: Green Skills – III	10	
		80	10
Part B	Vocational Skills		
	Unit 1: Fundamentals of Retailing	30	50
	Unit 2: Process of Credit Application	35	
	Unit 3: Mechanism for Customers to	35	

	Choose Right Products		
	Unit 4: Specialist Support to Customers	35	
	Unit 5: Health and Safety Management	30	
		165	50
Part C	Practical Work		
	Practical Examination	06	15
	Written Test	01	10
	Viva Voce	03	05
		10	30
Part D	Project Work/Field Visit		
	Practical File/ Student Portfolio	10	10
		10	10
	Total	265	100

3. UNIT CONTENTS

CLASS XI RETAIL (801)

2018-19

Part A: Employability Skills

Sl. No.	Units	Duration (Periods)
1.	Communication Skills – III	20
2.	Self-management Skills – III	15
3.	Information and Communication Technology Skills-III	10
4.	Entrepreneurial Skills – III	25
5.	Green Skills – III	10
	Total	80

Unit 1: Communication Skill – III

Learning Outcome	Theory (10 Periods)	Practical (10Periods)	Total Duration (20 Periods)
1. Demonstrate knowledge of various methods of communication	1. Methods of Communication - Verbal - Non-verbal - Visual	1. Writing pros and cons of written, verbal and non-verbal communication 2. Listing do's and don'ts for avoiding common body language mistakes	05
2. Identify specific communication styles	1. Communication styles- assertive, aggressive, passive-aggressive, submissive, etc.	1. Observing and sharing communication styles of friends, teachers and family members and adapting the best Practices 2. Role plays on Communication styles.	07
3. Demonstrate basic writing skills	1. Writing skills to the following: • Sentence • Phrase • Kinds of Sentences • Parts of Sentence • Parts of Speech	1. Demonstration and practice of writing sentences and paragraphs on topics related to the subject	08

	<ul style="list-style-type: none"> Articles Construction of a Paragraph 	
Total		20

Unit 2: Self-management Skills – III			
Learning Outcome	Theory (7Periods)	Practical (8Periods)	Total Duration (15 Periods)
1. Demonstrate impressive appearance and grooming	<ol style="list-style-type: none"> Describe the importance of dressing appropriately, looking decent and positive body language Describe the term Grooming Prepare a personal grooming checklist Describe the techniques of self-Exploration 	<ol style="list-style-type: none"> Demonstration of impressive appearance and groomed personality Demonstration of the ability to self- explore 	05
2. Demonstrate team work skills	<ol style="list-style-type: none"> Describe the important factors that influence in team building Describe factors influencing team work 	<ol style="list-style-type: none"> Group discussion on qualities of a good team Group discussion on strategies that are adopted for team building and team work 	05
3. Apply time management strategies and techniques	<ol style="list-style-type: none"> Meaning and importance of time management – setting and prioritizing goals, creating a schedule, making lists of tasks, balancing work and leisure, using different optimization tools to break large tasks into Smaller tasks. 	<ol style="list-style-type: none"> Game on time management Checklist preparation To-do-list preparation 	05
Total			15

Unit 3: Information & Communication Technology - III			
Learning Outcome	Theory (05Periods)	Practical (05Periods)	Total Duration (10 Periods)
1. Create a document on word processor	<ol style="list-style-type: none"> 1. Introduction to word Processing. 2. Software packages for word processing. 3. Opening and exiting the word processor. 4. Creating a document 	<ol style="list-style-type: none"> 1. Demonstration and practice of the following: <ul style="list-style-type: none"> • Listing the features of word processing • Listing the software packages for word processing • Opening and exit the word processor • Creating a document 	05
2. Edit, save and print a document in word processor	<ol style="list-style-type: none"> 1. Editing text 2. Wrapping and aligning the text 3. Font size, type and Face. 4. Header and Footer 5. Auto correct 6. Numbering and bullet 7. Creating table 8. Find and replace 9. Page numbering. 10. Printing document. 11. Saving a document in various formats. 	<ol style="list-style-type: none"> 1. Demonstration and practicing the following: <ul style="list-style-type: none"> • Editing the text • Word wrapping and alignment • Changing font type, size and face • Inserting header and Footer • Removing header and Footer 1. Using autocorrect option 2. Insert page numbers and Bullet 3. Save and print a Document 	05
Total			10

Unit 4: Entrepreneurial Skills – III			
Learning Outcome	Theory (10 Periods)	Practical (15 Periods)	Total Duration (25 Periods)
1. Describe the significance of entrepreneurial values and attitude	<ol style="list-style-type: none"> 1. Values in general and entrepreneurial values 2. Entrepreneurial value orientation with respect to innovativeness, independence, Outstanding performance and respect for work 	<ol style="list-style-type: none"> 1. Listing of entrepreneurial values by the students. 2. Group work on identification of entrepreneurial values and their roles after listing or reading 2-3 stories of successful entrepreneur 3. Exhibiting entrepreneurial values in Ice breaking, rapport building, group work and home assignments 	10
2. Demonstrate the knowledge of attitudinal changes required to become an entrepreneur	<ol style="list-style-type: none"> 1. Attitudes in general and entrepreneurial Attitudes 2. Using imagination/ Intuition 3. Tendency to take 	<ol style="list-style-type: none"> 1. Preparing a list of factors that influence attitude in general and entrepreneurial attitude 2. Demonstrating and identifying own 	

	<p>moderate risk</p> <ol style="list-style-type: none"> 4. Enjoying freedom of expression and action 5. Looking for economic Opportunities 6. Believing that we can change the Environment 7. Analyzing situation and planning action 8. Involving in activity 	<p>entrepreneurial attitudes during the following micro lab activities like thematic appreciation Test</p> <ol style="list-style-type: none"> 3. Preparing a short write-up on "who am I" 4. Take up a product and suggest how its features can be improved 5. Group activity for suggesting brand names, names of enterprises, etc. 	15
Total			25

Unit 5: Green Skills – III			
Learning Outcome	Theory (05 Periods)	Practical (05Periods)	Total Duration (10 Periods)
1. Describe importance of main sector of green economy	<ol style="list-style-type: none"> 1. Main sectors of green economy- E-waste management, green transportation, renewal energy, green construction, water Management 2. Policy initiatives for greening economy in India 	<ol style="list-style-type: none"> 1. Preparing a poster on any one of the sectors of green economy 2. Writing a two-page essay on important initiatives taken in India for promoting green economy 	05
2. Describe the major green Sectors/Areas and the role of various stakeholder in green economy	<ol style="list-style-type: none"> 1. Stakeholders in green Economy 2. Role of government and private agencies in greening cities, buildings, tourism, industry, transport, renewable energy, waste management, agriculture, water, forests and fisheries 	<ol style="list-style-type: none"> 1. Preparing posters on green Sectors/Areas: cities, buildings, tourism, industry, transport, renewable energy, Waste management, agriculture, water, forests and fisheries 	05
Total			10

Part B: Vocational Skills

Sl. No.	Units	Duration (Periods)
1.	Fundamentals of Retailing	30
2.	Process of Credit Application	35
3.	Mechanism for Customers to Choose Right Products	35
4.	Specialist Support to Customers	35
5.	Health and Safety Management	30
	Total	165

Unit 1: Fundamentals of Retailing			
Learning Outcome	Theory (10 Periods)	Practical (20 Periods)	Total Duration (30 Periods)
1. Describe the fundamental of retailing	1. Meaning and significance of retail Business 2. Meaning and difference between organised and unorganised retailing 3. Different types of retail business establishment	1. Visit to a retail store for identify the various sections of the retail 2. Observe the basic functions and requirements of retailers in the retail store 3. Identify the various organized and	08
	4. Functions and essential requirements of retailers 5. Retailer's services to Customers	unorganised retail formats from the given retail formats 4. List the different formalities required for organised and unorganised retailing 5. Identify the various store and non-store retailing from the given retail formats 6. List the different formalities required for store and non-store retailing	
2. Describe the role of sales associate	1. Concept of customer and related terms 2. Concept of customer Service 3. Customer service Functions 4. Customer satisfaction and importance	1. Demonstrate the various customer services for convincing and satisfying the customer	07
3. Skills for handling retail by sales associate	1. Essentials of skill Development 2. Skills for sales Associate	1. Draw a chart containing the various skills of sales associate	07
4. List out the duties and responsibilities of sales associate	1. Duties of sales Associate 2. Responsibilities of sales associate 3. Special activities of	1. Carry out various duties and responsibilities of sales associate 2. Follow the core competencies while doing	08

	sales associate	the work	
Total			30

Unit 2: Process of Credit Application			
Learning Outcome	Theory (15 Periods)	Practical (20 Periods)	Total Duration (35 periods)
1. List the features and conditions for credit sales	1. Meaning of credit sales 2. Features and need for credit sales, 3. Retail credit facility, 4. Terms and conditions used for sale of goods on credit basis	1. Identify the credit sales in a given situation 2. Draw a chart contains terms and conditions used for sale of goods on credit basis	09
2. Identify the credit checks and getting authorization	1. Meaning and need for credit check, 2. Legal and company procedures for carrying out credit checks, 3. Legal and company procedures for getting	1. Estimate customer repayment capacity and need for credit 2. Follow the legal and company procedures for carrying out credit Checks	09
	authorization for credit Check 4. Steps to follow before granting a customer Credits	3. Demonstrate the legal and company procedures for getting authorization for credit Check	
3. Describe the process of credit requisitions	1. Meaning of credit requisition, 2. Steps involved in the credit requisition	1. Explain the credit Requisition 2. Demonstrate the steps involved in the credit Requisition	08
4. Demonstrate the techniques for determining credit worthiness	1. Meaning credit Worthiness 2. How to check credit Worthiness 3. Techniques used for determining credit worthiness of the customers.	1. Explain the credit Worthiness 2. Demonstrate how to check credit worthiness 3. Demonstrate the knowledge of techniques used for determining credit worthiness of the Customers	09
Total			35

Unit 3: Mechanism for Customers to Choose Right Products			
Learning Outcome	Theory (15 Periods)	Practical (20 Periods)	Total Duration (35 Periods)
1. Identify the methods of selling in retail formats	1. Methods of selling 2. Selling ways 3. Procedure for arranging the	1. Classify the methods of selling in retail. 2. Identify the methods of selling in different	

	Products 4. Segment the Products	retail formats 3. Check the product packaging proper 4. Arrange the products in suitable Segments	10
2. Find out the sales promotion activities in retail store/mall	1. Meaning of Sales Promotion 2. Objectives of Sales Promotion 3. Sales promotion Techniques 4. Ways to convincing the customers. 5. Nature of product in retail trade and understand.	1. List out the sales Promotion techniques adapted different retail formats. 2. Identify the which techniques are very much suitable for various retail formats	10
3. Respond to the questions and comments of customers in retail store/mall	1. When sales associate is unable to answer the customer's query 2. When an item is not available to the customer, 3. When transferring a	1. Identify the situations where sales associate is unable to answers, items not available and when to transfer a customer customer's Query	10

Unit 3: Mechanism for Customers to Choose Right Products			
Learning Outcome	Theory (15 Periods)	Practical (20 Periods)	Total Duration (35 Periods)
	customer, 4. Comments made on the product and how to respond on it, 5. Favors that cannot be done, 6. When a product is defective, 7. Closing with a customer, 8. Talking to severely angry customers	2. Demonstration of customer handling Skills 3. Conduct role play on closing with a Customer 4. Describe and play role on talking to severely angry Customers	
4. Demonstrate the techniques of closing the sale in retail store/mall	1. Concept sale closing 2. Factors influencing the successful closing of sales 3. Techniques of closing of sale	1. Demonstrate the various techniques for closing the sale	05
Total			35

Unit 4: Specialist Support to Customers			
Learning Outcome	Theory (15 Periods)	Practical (20Periods)	Total Duration (35 Periods)

1. Demonstrate the product information to the customers	<ol style="list-style-type: none"> 1. Meaning and features of Product 2. Needs for product information, 3. Types of product Information 4. Help customer decide what to buy 	<ol style="list-style-type: none"> 1. Identify the needs for product information in a given situation 2. Draw a chart contains types of product information 3. Role play on how to help customer to decide what to buy 	10
2. Explain the techniques to encourage customers to buy the products	<ol style="list-style-type: none"> 1. Meaning of customer motivation, 2. Need for motivating customers to buy products, 3. Meaning of customer service policy 4. Policies for giving information to customers 5. Steps involve in handling customer complaints 6. Techniques to encourage customers to buy products 	<ol style="list-style-type: none"> 1. Role play on need for motivating customers to buy products in a given Condition 2. Classify the policies for giving information to Customers 3. Demonstrate the steps involve in handling customer complaints and techniques to encourage customers to buy Products 	10

Unit 4: Specialist Support to Customers			
Learning Outcome	Theory (15 Periods)	Practical (20 Periods)	Total Duration (35 Periods)
3. List out the steps involving to provide personalized service	<ol style="list-style-type: none"> 1. Meaning of personalized Service 2. Customer service standards and standards for personalized customer Service 3. Meaning of personalized sales support 4. Steps involving in personalized sales support 	<ol style="list-style-type: none"> 1. Role play to explain the customer service standards and standards for personalized customer service 2. Perform the steps involving in personalized sales Support 	07
4. Maintain the post sale service support for attracting customers to resale the products in their retail store/mall	<ol style="list-style-type: none"> 1. Meaning of post sale service support, 2. Types of post sale service support, 3. Meaning of customer information, 4. Records for storing clients/customers information, 5. Benefits of maintaining records of customer information, 6. Company laws and policies 	<ol style="list-style-type: none"> 1. Demonstrate the procedure of maintaining records for storing clients/customers information 2. Follow the company laws and policies on data protection 	08

	<ul style="list-style-type: none"> on data protection 7. Promises to customer 8. Types of promises to Customer 	
Total		35

Unit 5: Health and Safety Management			
Learning Outcome	Theory (10 Periods)	Practical (20 Periods)	Total Duration (30 Periods)
1. Describe the Health and Safety Requirements	<ul style="list-style-type: none"> 1. Meaning of Health and Safety 2. Identify and follow the health and safety requirements laid down by retailer and law 3. Study the ways to encourage colleagues to follow the health and safety norms. 	1. Demonstrate good practices for maintaining good health and safety conditions at retail store	07
2. List the Equipment and Materials	<ul style="list-style-type: none"> 1. Meaning of risk and types of risks in retailing 2. Types of equipment and materials used in the stores for health and safety 3. Trace out the approved actions to deal with risks. 4. Use of equipment with manufacturer's instruction 	<ul style="list-style-type: none"> 1. Use various safety accessories used in Store 2. Select equipment for common safety and health concerns and problems in given Situation. 	08

Unit 5: Health and Safety Management			
Learning Outcome	Theory (10 Periods)	Practical (20 Periods)	Total Duration (30Periods)
3. Dealing with Accidents and Emergencies	<ul style="list-style-type: none"> 1. Meaning of accidents and Emergencies 2. Dealing with Accidents and Emergencies 3. Recognise when evacuation procedure starts 4. Company procedures for Evacuation 	<ul style="list-style-type: none"> 1. Demonstrate how to deal with irate customers carefully 2. Prepare a chart on Company procedures for evacuation 	07
4. Reporting Accidents and Emergencies	<ul style="list-style-type: none"> 1. Meaning of Reporting 2. Retailers procedures and legal requirements to deal with accidents and Emergencies 3. System of reporting accidents and emergencies to the right Persons 	<ul style="list-style-type: none"> 1. Visit a retail store to know retailers procedure to deal with accidents and Emergencies 2. Role play on reporting accidents and emergencies to the right persons 	08
Total			30

4. ORGANISATION OF FIELD VISITS

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

Visit a retail store and observe the following: Location, Site, Mother block, Office building, Store Layout, Arranging products in Racks, Store Design, Signage, Display of Products, Arranging Products into Gondolas, Billing Counter, Baggage of Products, Information Counters, etc. During the visit, students should obtain the following information from the owner or the supervisor or manager of the retail store:

1. Area under retail store and its layout
2. Types of retail stores
3. Type of racks used
4. Store layout and design
5. Goods receiving procedure
6. Storage of goods
7. Maintain stock levels
8. Communication between sales persons and customers
9. Communication between sales person and other stakeholders of the retail store
10. Segmentation of products
11. Arranging products in racks, Gondolas etc.
12. Types of signage's its usefulness
13. Duties and responsibilities of store operations assistant
14. Traditional billing system
15. Computerized billing system
16. Manpower engaged
17. Display of products
18. Total expenditure of retail store
19. Total annual income
20. Profit/Loss (Annual)
21. Any other information

5. LIST OF EQUIPMENT AND MATERIALS

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

Material Required for Store Operations Assistant

1. Shelves for Stacking Products
2. Shopping Cart
3. Signage Board Retail
4. Offer / Policy Signage
5. Big Poster (at POS) for offer related advertisement
6. Gondola
7. Products for display (Dummy Cameras and Mobiles)

8. Danglers
9. Coupons and Vouchers
10. Carry Bags
11. Physical Bill Copy
12. Bar Code Machine
13. Customer Feedback Form
14. Safety and security equipments on site
 - *Fire extinguisher*
 - *Security cameras*
 - *LCD screens*
 - *Safety sign boards*
 - *Personal protective equipments (PPE) like gloves, helmets, jackets, harness etc.*
 - *Locking systems*
15. Housekeeping equipments on site
 - *Vacuum cleaner*
 - *Mops*
 - *Cleaning chemicals*
 - *Cleaning Robots*
 - *Air purifiers*
 - *Filtering machines*
 - *Spill Absorbents*

Teaching/Training Aids

1. Computer
2. LCD Projector
3. Projection Screen
4. White/Black Boards
5. Flip Charts

6. VOCATIONAL TEACHER'S/ TRAINER'S QUALIFICATION

The suggestive qualifications and minimum competencies for the vocational teacher should be as follows:

Sl. No.	Qualification	Minimum Competencies	Age Limit
1.	Graduate or Diploma in Retail Management, P.G. Diploma in Marketing with at least 50% marks and 1 year teaching / work experience. Preference given to higher education with MBA (Retail Marketing) and/ or PG Diploma in Retail Management.	<ul style="list-style-type: none"> • Effective communication skills (oral and written) • Basic computing skills. • Technical competencies (e.g. in areas such as marketing, sales promotion, store maintenance, marketing and merchandising etc.) 	18-37 years Age relaxation to be provided as per Govt. rules.

INFORMATION TECHNOLOGY (802)

JOB ROLE: Domestic IT Helpdesk Assistant

(QUALIFICATION PACK: Ref. Id. SSC/Q0110)

SECTOR: IT/ ITeS

Class –XI (2018-19)

1. COURSE OVERVIEW

COURSE TITLE: Domestic IT Helpdesk Attendant

Domestic CRM Domestic Voice in the IT-ITeS Industry is also known as a Customer Service Associate, Customer Service Representative, Customer Care Executive, Customer Service Advisor, Helpdesk Coordinator, and Customer Support Representative. Individuals in this job receive and make telephone calls which are primarily scripted, basic and routine with the assistance of a computerized system. They answer inquiries, resolve problems, record complaints and/or receive feedback. This job requires the individual to work independently and interact with customers. The individual should be result oriented and should also be able to demonstrate logical thinking and interpersonal skills; ensure prioritization of workload and should be willing to work at a desk-based job.

COURSE OUTCOMES: 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;
- Identify the principal components of a computer system.
- Work safely on computer.
- Start the computer.
- Open and use the related software.
- Exit from the software.
- Shut down the computer.
- Use the computer for data entry process.
- Collect all necessary information about the query.
- Log any decision about the query on the data entry tracking form.
- Follow Rules and guidelines for data entry.
- Handle queries.
- Identify and control hazards in the workplace that pose a danger or threat to their safety or health, or that of others.

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

COURSE LEVEL: This course can be taken up at Intermediate level in Class XI

COURSE DURATION: 260 PERIODS
CLASS XI: 260 PERIODS

2. SCHEME OF UNITS AND ASSESSMENT

This course is a planned sequence of instructions consisting of Units meant for developing employability and vocational competencies of students of Class XI opting for vocational subject along with general education subjects. The unit-wise distribution of hours and marks for Class XI is as follows:

CLASS XI			
	Units	No. of Periods for Theory and Practical 260	Max. Marks for Theory and Practical 100
Part A	Employability Skills		
	Unit 1: Communication Skills	20	10
	Unit 2: Self-management Skills	15	
	Unit 3: Basic ICT Skills	10	
	Unit 4: Entrepreneurial Skills	25	
	Unit 5: Green Skills	10	
	Total	80	10
Part B	Vocational Skills		
	Unit 1: Computer Organization & OS: User perspective.	20	50
	Unit 2: Networking and Internet.	20	
	Unit 3: Office automation tools:	60	
	Unit 4: Multi Media Design: (Open Source Design Tools).	40	
	Unit 5: Troubleshooting: Hardware, Software and Networking.	20	
	Total	160	50
Part C	Practical Work		
	Practical Examination	6	15
	Written Test	1	10
	Viva Voce	3	05
	Total	10	30
Part D	Project Work/Field Visit		
	Practical File/ Student Portfolio	10	10
	Total	10	10
	Total	260	100

3. UNIT CONTENTS

CLASS XI (2018-19)
INFORMATION TECHNOLOGY

Part A: Employability Skills
(REF. PAGE NO. 5)
Part B: Vocational Skills

S. No.	Units	Duration in Periods
1.	Unit 1: Computer Organization & OS: User perspective.	20
2.	Unit 2: Networking and Internet.	20
3.	Unit 3: Office automation tools:	60
4.	Unit 4: Multi Media Design: (Open Source Design Tools).	40
5.	Unit 5: Troubleshooting: Hardware, Software and Networking.	20
	Total Duration	160

Unit Code	Unit Title	Total Hours	Total Marks
ITDC–301	Computer Organization & OS: User perspective. <ul style="list-style-type: none">• Understanding of Hardware.• Basics of Operating System.	20	7
ITDC–302	Networking and Internet. <ul style="list-style-type: none">• Network Safety concerns.• Network Security tools and services.• Cyber Security.• Safe practices on Social networking.	20	7
ITDC–303	Office automation tools: <ul style="list-style-type: none">• Spreadsheet.• Word processing.• Presentation.	60	18
ITDC–304	Multi Media Design: (Open Source Design Tools). <ul style="list-style-type: none">• Interface and Drawing Tools in GIMP.• Applying Filters.• Creating and handling multiple layers.• Using Stamping and Smudging tools.• Importing pictures.	40	12
ITDC–305	Troubleshooting: Hardware, Software and Networking. <ul style="list-style-type: none">• Commonly encountered problems.• (Monitor: No display, KB/Mouse not responding, monitor giving beeps, printer not responding, check for virus, Delete temporary files if system is slow, adjust mouse speed).	20	6
		160	50

PRACTICAL

Details	Marks Distribution
Practical Exam <ul style="list-style-type: none">• Spreadsheets, Word, Presentation• Multimedia Design• Troubleshooting	25
Project / Practical File	10
Viva Voce	05
Total	40

WEB APPLICATIONS (803)

Job Role: - Web Developer

SCHEME OF UNITS AND ASSESSMENT

This course is a planned sequence of instructions consisting of Units meant for developing employability and vocational competencies of students of Class XI opting for vocational subject along with general education subjects. The unit-wise distribution of hours and marks for Class XI is as follows:

CLASS XI			
	Units	No. of Periods for Theory and Practical 260	Max. Marks for Theory and Practical 100
Part A	Employability Skills		
	Unit 1: Communication Skills	20	10
	Unit 2: Self-management Skills	15	
	Unit 3: Basic ICT Skills	10	
	Unit 4: Entrepreneurial Skills	25	
	Unit 5: Green Skills	10	
	Total	80	10
Part B	Vocational Skills		
	Unit 1: Multimedia Authoring- Animation Tools.		50
	Unit 2: Digital Content Creation- Adding Styles to Web Pages (CSS).		
	Unit 3: Web Scripting- JavaScript.		
	Unit 4: Work Integrated Learning IT – WA-I .		
	Total	160	50
Part C	Practical Work		
	Practical Examination	6	15
	Written Test	1	10
	Viva Voce*****	3	05
	Total	10	30
Part D	Project Work/Field Visit		
	Practical File/ Student Portfolio	10	10
	Total	10	10
	Total	260	100

**CLASS–XI
ELECTIVE
WEB APPLICATIONS(803)
THEORY**

**Part A- Employability
Skills(Ref. NO. 5)**

Part B – Vocational Skills

Marks: 50

Unit Code	Unit Title	Total Hours	Total Marks
ITDC–310	Multimedia Authoring- Animation Tools. <ul style="list-style-type: none"> • Animation Concepts. • Frames and Layers. • Motion and Shape, Twining. • Importing AV Files. • Publishing. 	50	15
ITDC–311	Digital Content Creation- Adding Styles to Web Pages (CSS). <ul style="list-style-type: none"> • Review of HTML. • Adding Style Sheets. • External style sheets. • CSS Properties – border, box, font, margin, padding. • CSS classes. 	30	10
ITDC–312	Web Scripting- JavaScript. <ul style="list-style-type: none"> • Creating interactive Web Pages with scripts. • Variables and Operators. • *Decision making using if and switch. • Iterations - loops. • Window Object. • Location Object. • History Object. • Popup Boxes – alert, confirm. 	50	15
ITDC–313	Work Integrated Learning IT – WA-I . <ul style="list-style-type: none"> • Identification of Work Areas. • Work Experience. 	30	10
		160	50

PRACTICAL

Marks: 40

Details	Marks Distribution
Programs / Practical Questions. <ul style="list-style-type: none"> • Animation Tools (15 Marks). • HTML (5 Marks). • Web Scripting - Java Script (5 Marks). 	25
Project / Practical File	10
Viva Voce	10
Total	50

AUTOMOTIVE (804)

Job Role: (Automotive Service Technician)

SCHEME OF UNITS

This course is a planned sequence of instructions consisting of Units meant for developing employability and vocational competencies of students of Class XI opting for vocational subject along with general education subjects. The unit-wise distribution of hours and marks for Class XI is as follows:

CLASS XI (2018-19)

	Units	No. of Periods for Theory and Practical 260	Max. Marks for Theory and Practical 100
Part A	Employability Skills		
	Unit 1: Communication Skills-III	20	10
	Unit 2: Self-Management Skills-III	15	
	Unit 3: Information and Communication Technology Skills-III	10	
	Unit 4: Entrepreneurial Skills-III	25	
	Unit 5: Green Skills-III	10	
	Total	80	
Part B	Vocational Skills		
	Unit 1: Regular Maintenance of an Engine		50
	Unit 2: Regular Maintenance of Transmission System		
	Unit 3: Regular Maintenance of Gear		
	Unit 4: Service of Wheels		
	Unit 5: Regular Maintenance of Tubes and Tires		
	Unit 6: Regular Maintenance of Brakes		
	Total	160	50
Part C	Practical Work		
	Practical Examination	06	15
	Written Test	01	10
	Viva Voce	03	05
	Total	10	30
Part D	Project Work/field Visit		
	Practical File/Student Portfolio	10	10
	Total	10	10
	Grand Total	260	100

CLASS XI (2018-19)
Automotive (804)

Part A - Employability Skills (REF. PAGE NO. - 05) 10

Part B–Vocational Skills 50

- | | |
|---|-----------|
| 1. Regular Maintenance of an Engine | 15 |
| <ul style="list-style-type: none">• Inspection of an engine.• Washing of an engine.• Tuning fuel system of an engine.• Tuning of the ignition system of an engine.• Tuning engine lubrication system.• Tuning engine cooling system.• Checking other engine components (Mechanical Setting).• Engine Timing and engine sound test after setting. | |
| 2. Regular Maintenance of Transmission System | 10 |
| <ul style="list-style-type: none">• Transmission system.• Clutch maintenance.• Clutch adjustments.• Overhauling of clutch. | |
| 3. Regular Maintenance of Gear | 8 |
| <ul style="list-style-type: none">• Lubrication of gear box.• Setting of gears. | |
| 4. Service of Wheels | 7 |
| <ul style="list-style-type: none">• Importance of wheels.• Importance of hub greasing and bearing play adjustments. | |
| 5. Regular Maintenance of Tubes and Tires | 5 |
| <ul style="list-style-type: none">• Tyre and its maintenance.• Tyre puncture. | |
| 6. Regular Maintenance of Brakes | 5 |
| <ul style="list-style-type: none">• Brakes and maintenance.• Brakes and adjustment. | |

FINANCIAL MARKET MANAGEMENT (805)

Job Role: (Equity Dealer/ Mutual Fund Agent)

SCHEME OF UNITS AND ASSESSMENT

This course is a planned sequence of instructions consisting of Units meant for developing employability and vocational competencies of students of Class XI opting for vocational subject along with general education subjects. The unit-wise distribution of hours and marks for Class XI is as follows:

CLASS XI			
	Units	No. of Periods for Theory and Practical 260	Max. Marks for Theory and Practical 100
Part A	Employability Skills		
	Unit 1: Communication Skills	20	10
	Unit 2: Self-management Skills	15	
	Unit 3: Basic ICT Skills	10	
	Unit 4: Entrepreneurial Skills	25	
	Unit 5: Green Skills	10	
	Total	80	10
Part B	Vocational Skills		
	Unit 1: Markets and Financial Instruments		50
	Unit 2: Primary and Secondary Market		
	Unit 3: Financial Statement Analysis		
	Unit 4: Mutual Funds Products and Features		
	Unit 5: ETFs, Debt and Liquid Funds		
	Unit 6: Taxation and Regulations		
	Total	160	50
Part C	Practical Work		
	Practical Examination	6	15
	Written Test	1	10
	Viva Voce	3	05
	Total	10	30
Part D	Project Work/Field Visit		
	Practical File/ Student Portfolio	10	10
	Total	10	10
	Total	260	100

EMPLOYMENT OPPORTUNITIES

Equity Dealer

- Equity & Derivative Market and place orders on their behalf.
- Building relationships with the client & educating them about Investments.
- A passion for quality and for developing others
- Well-organised and focused
- Encourage clients to trade
- Networking with clients to increase business
- Eager to learn and keep oneself updated in financial markets

Mutual Fund dealer

- Facilitate buying and selling of mutual funds
- Provide support for buying and selling of mutual funds
- Networking with clients to increase business
- Keep abreast of latest in the industry to guide the clients

Back Office Executive

- Help and assistance in Demat & Trading accounts
- Send MIS reports to clients/internal department
- Coordinate with accounts, marketing team etc
- Organize Training, Assist trainer.

Financial Consultant/ Sales Executive

- Main responsibility is selling of MF/Demat accounts
- Driving sales through Business Development & Relationship Building with Direct Client.
- Co-ordination & Organising Investor Awareness Programs.
- Building and Maintaining healthy business relations with customer, enhancing customer satisfaction & securing repeat business.

Relationship Officer

- Perform all sales related activities for existing and potential customers to achieve the assigned financial targets.
- Networking with clients to increase business
- Generate business through assigned HNI and other clients
- Knowledge of Financial instruments and products.
- Taxation Assistant.
- Accounts & Finance Executive.
- Assistant in Trust companies and other financial institutions.
- Computer Operator in Financial and other companies.

Financial Markets Management XI (805)

THEORY

Part A – Employability Skills (Ref. Page No. – 5) - 10 marks

Part B - Vocational Skills -50 marks

UNIT 1- Markets and Financial Instruments 5

Types of Markets: Equity Debt, Derivatives Commodities; Meaning and features of private Public companies; Types of investment avenues

UNIT 2- Primary and Secondary Market 10

Initial Public Offer (IPO); Book Building through Online IPO; Eligibility to issue securities; Pricing of Issues; Fixed versus Book Building issues; allotment of Shares; Basis of Allotment; Private Placement. Role and functions of Securities and Exchange Board of India (SEBI); Depositories; Stock exchanges; Intermediaries in the Indian stock market Listing; Membership; Trading Clearing and settlement and risk management; Investor protection fund (IPF); and Do's and Don'ts for investors, Equity and debt investment.

UNIT -3- Financial Statement Analysis 5

Balance sheet; Profit & loss account; Stock market related ratios; Simple analysis before investing in the shares; understanding annual report; Director's report etc.

UNIT – 4 Mutual Funds Products and Features 15

Concept and structure of mutual funds in India; Role of custodian; Registrar and transfer agent; AMC; New fund offer's & procedure for investing in NFO; Investors rights and obligations. Concept of open ended and close ended fund; Types of funds - equity, index, diversified large cap funds, midcap fund, sector fund and other equity schemes; Concept of entry and exit load; Expense ratio; Portfolio turnover; AUM; Analysis of cash level in portfolio.

UNIT – 5 ETFs, Debt and Liquid Funds 10

Introduction to exchange traded funds; Portfolio deposit and cash component. Salient features of debt and Concept of interest rate and credit risk; Pricing of debt instrument. Salient features of liquid funds; Floating rate scheme and portfolio churning in liquid funds.

Taxation of capital gains; Indexation benefit and FMP. Role and objectives of AMFI; Different types of plans; Systematic Investment Plan (SIP); Systematic Transfer Plan (STP) and Systematic Withdrawal Plan (SWP); Dividend payout.

TOURISM (806)

JOB ROLE: Tour Guide

(QUALIFICATION PACK: Ref. Id. THC/Q4404)

SECTOR: Travel, Tourism and Hospitality

Class-XI (2018-19)

1. COURSE OVERVIEW

COURSE TITLE: Travel, Tourism & Hospitality- Travel Consultant

The **Travel, Tourism and hospitality** is one of the largest service industry in India as well as in the world that includes transportation, accommodation, places of tourist interests, planning of events, etc. And largest foreign exchange earner among provides employment of many people directly and indirectly through many associated service industry. It is a very wide industry; it includes government tourism departments, immigration and custom services, travel agencies, airlines, tour operator, hotels etc. And many associated service industries such as airline catering or laundry services, guides, interpreters, tourism promotion and sales etc.

Travel, Tourism and Hospitality Management is the act or practice of serving guests or customers with hospitable manners and establish good relationship between the guest and the host. This includes the offering of boarding, lodging arrangements, transport, sightseeing, recreation and entertainment etc. services to the guests, visitors, or tourists.

A few out of the numerous job roles available in the Travel and Tourism sector are: Travel agent, tour operator, Tour manager, GSA, PSA, Travel agency sales and Marketing Executive Airport representative, Event Planner etc.

A Travel Consultant or travel agent performs the basic functions related to travel and tour operation and provides all types of travel services to the customers or tourists. Travel consultants provide all up-to-date information related to travel, assist clients in preparing their travel documents such as visa, passport, health certificate etc and make travel arrangement for both business and holiday purposes. They help provide quotes to find the best value options available for tour packages and make bookings for transport, accommodation, sightseeing activities and other travel related activities a client may need.

COURSE OUTCOMES: On completion of the course, student 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.
- Demonstrate the various segments of travel and tourism industry.
- Identify the major components of travel and tourism industry.
- Identify and demonstrate the knowledge of facilities/services of travel and tourism sectors.
- Determine clients' needs and suggesting suitable travel packages.
- Demonstrate the procedure of booking for Travel and tourist transportation.
- Perform the various functions in travel agency and tour operations.

- Supply travelers with pertinent information and useful travel/holiday materials.
- Perform the best practices of travel and tourism services to the guests.
- Identify and Maintain Code of ethics for gender, age and safety issues in the industry.

COURSE REQUIREMENTS: The learner should have the basic knowledge of History and Geography.

COURSE LEVEL: This is a senior secondary level course. On completion of this course, a student can take up higher level course for a job role in Travel, Tourism and Hospitality sector.

COURSE DURATION: 265 PERIODS

CLASS XI: 265 PERIODS

2. SCHEME OF UNITS

This course is a planned sequence of instructions consisting of Units meant for developing Employability and vocational competencies of students of Class XI opting for vocational subject along with general education subjects. The unit-wise distribution of hours and marks for Class XI is as follows:

CLASS XI			
	Units	No. of Periods for Theory and Practical 265	Max. Marks for Theory and Practical 100
Part A	Employability Skills		
	Unit 1: Communication Skills-III	20	10
	Unit 2: Self-management Skills-III	15	
	Unit 3: Information and Communication Technology Skills-III	10	
	Unit 4: Entrepreneurial Skills-III	25	
	Unit 5: Green Skills-III	10	
	Total	80	10
Part B	Vocational Skills		
	Unit 1: Introduction to Tourism		50
	Unit 2: Tourism: A Historical Account		
	Unit 3: Concepts of Tourism		
	Unit 4: Tourism Components – I		
	Unit 5: Tourism Components – II		
	Unit 6: Inter Linkage between Geography and Tourism Industry		
	Unit-7: Inter Linkage between History and Tourism Industry		
	Unit-8: Tourism Organizations and Trends		

	Total	165	50
Part C	Practical Work		
	Practical Examination	06	15
	Written Test	01	10
	Viva Voce	03	05
	Total	10	30
Part D	Project Work/Field Visit		
	Practical File/Student Portfolio	10	10
	Total	10	10
	Grand Total	265	100

3. UNIT CONTENTS

CLASS XI (2018-19)

TOURISM (806)

Part A: Employability Skills (REF. PAGE NO. 5)

Part B: Vocational Skills

Unit-1: Introduction to Tourism

7

- Definition of Tourism.
- Elements of tourism – Man, time and space.
- Definition and differentiation - Tourist, travelers, visitor, transit visitor and excursionist.
- Leisure, recreation and tourism and their Interrelationship - Diagram.
- Characteristics of tourism – Service Characteristics, how to overcome service characteristics.
- Components of tourism – A's and S's of Tourism (Tourism resources, attractions, product, market, industry and destination).

Unit-2: Tourism: A Historical Account

6

- Travel in early times.
- 'Renaissance' and 'Age of Grand Tours.
- Industrial revolution and tourism.
- Tourism in modern times.
- Tourism in India: an account – Rahul Sankalyan, Tirthatan, Deshantan, Paryatan, modern travel.
- Tourism circuits.

Unit-3: Concepts of Tourism

8

- Tourism systems.
- Tourism Motivators
- Barriers to Tourism - Overcoming barriers to tourism.
- Forms of Tourism – In bound outbound, domestic (UNWTO – Diagram).

- Types of Tourism – Ethnic tourism, adventure tourism, rural tourism, eco-tourism, medical or health or wellness tourism, Sustainable tourism, etc.
 - Types of Tour packages.
 - Defining Tourism Impacts – Socio cultural, economic and environmental.
- Unit-4: Tourism Components – I** **8**
- Attraction – Resources, products, sites, destinations.
 - Types of Attraction – man-made and symbiotic.
 - Accessibility – Modes of Transportation and significance.
 - Amenities: Health and hygiene, security.
- Unit-5: Tourism Components – II** **8**
- Significance of Accommodation.
 - Types of Accommodation – Based on facilities, based on location, based on length of stay.
 - Meal Plan of booking accommodation.
 - Available packages – Short trip, weekend trip, long trip.
 - Activities.
 - Ancillary services – Guides, escorts, shopping for souvenirs, health services, documentation, telecommunication, Foreign Exchange.
- Unit-6: Inter Linkage between Geography and Tourism Industry** **8**
- Significance of Geography in tourism.
 - Defining – Longitude, latitude, time calculation.
 - Physical and Cultural Geography.
 - Geographical features and their role in Tourism – Canyon, Hills, rivers, lakes, deserts, beaches etc. with examples.
 - Map reading and cartography.
 - Indian geography.
- Unit-7: Inter Linkage between History and Tourism Industry** **8**
- Significance and importance of History in tourism.
 - Heritage Tourism – types, promotion.
 - Defining – Heritage, historical sites, Archaeological sites.
 - Guiding around Heritage sites.
 - Role of ASI and ASI sites.
 - World heritage sites in India.
- Unit-8: Tourism Organizations and Trends** **7**
- Defining the role of Ministry of Tourism Govt. of India.
 - Defining the role of State Tourism Development Corporations.
 - Public-private partnerships in tourism.
 - Role of local bodies and NGO's.
 - Functions of UNWTO, IATA, IATO, TAAI.
 - Factors responsible for growth and development of tourism.
 - General Trends in National & International Tourism trends.
 - Emerging trends.

PRACTICAL

Marks: 40

- Computer Skills with access to computer for getting information related to tourism from internet as well as basic information from Windows and MS Office. **20**
- Project work based on newspaper and magazine cutting on tourism related news. **10**
- Role play with regard to information dispersal to guests / tourists. **10**

4. ORGANISATION OF FIELD VISITS

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

Visit a travel agency or any travel organization and observe the following: Location, Site, Functioning departments, Office building, Store, Documents and Travel Manuals, Office files, Reservation sheets/ Register for hotel guests etc. During the visit, students should obtain the following information related to Travel and tourism industry operations from expert of the organizations:

1. Tour Company's profile.
2. Travel and Tourism related products and services offered to the travelers;
3. Numbers of functioning departments and their sound functions,
4. Code of conduct and guest handling practices.
5. Recognitions and approval for standardization from Government or any other authority
6. Agency manuals and travel documents;
7. Booking status of the travel services and tour packages;
8. Marketing and Sale procedure
9. Travel agency Manuals /tools/brochures for tour package formulation;
10. Manpower engaged (male/ female/ disables or children if any) in the hotel/travel agency
11. Tourist inflow/outlaw status
12. VIPs and business or corporate client's details;
13. Feedback from customers;
14. Total expenditure of the company Total annual income
15. Profit/Loss (Annual)
16. Any other information

5 . LIST OF EQUIPMENT AND MATERIALS

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

1. Audio-visual aids
2. CRS Package and Internet
3. Travel documents
4. Travel itineraries
5. Flights tickets
6. Hotel vouchers
7. Hotel tariffs
8. Templates/brochures of companies
9. Pictures of destinations
10. Tourist maps
11. Railways time table
12. Airline time table
13. Travel agents had books
14. Travel Information Manual (TIM)
15. Official Airline Guide (OAG)
16. Passports and Visas

6. VOCATIONAL TEACHER'S/ TRAINER'S QUALIFICATION

The suggestive qualifications and minimum competencies for the vocational teacher should be as follows:

S. No.	Qualification	Minimum Competencies	Age Limit
1.	<p>Any one of the following:</p> <ol style="list-style-type: none"> 1. Post-graduation in Travel and Tourism Management or in Tourism and Hospitality from a recognized Institute /University, with at least 1 year work/teaching experience 2. Three years degree /diploma after class XII, in Tourism and travel management from any recognized institute of Hotel Management from a recognized Institute /University, with at least 3 year industrial Experience 	<ul style="list-style-type: none"> •Effective communication skills (oral and written) • Basic computing Skills 	<p>18-37 years (as on Jan. 01 (year)) Age relaxation to be provided as per Govt. Rules</p>

**LEARNING OUTCOME
BASED
VOCATIONAL CURRICULUM**

JOB ROLE: Beauty Therapist (807)

(QUALIFICATION PACK: Ref. Id. BWS/Q0102)

SECTOR: Beauty and Wellness

Class - XI (2018-19)

1. COURSE OVERVIEW

COURSE TITLE: Beauty and Wellness – Beauty Therapist

A Beauty Therapist needs to perform the beauty therapy and maintain hygiene and safety at workplace. He/she should be knowledgeable about various beauty products and should be able to perform depilation, manicure, pedicure and advanced face care services. He/ She must be trained in the correct usage and handling to perform the skin treatments safely.

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

- Communicate effectively with the customers;
- To provide quality training to those seeking a career as professional beauty therapist, makeup artist, hair stylist etc.
- To introduce the culture of safe, clean, healthy and pleasant environment at training centers and workplaces; related to beauty salons.
- To enhance the economic opportunities for the Beautician graduates.
- To provide improved services to the ever increasing beautician cliental.
- To develop understanding of the basic principles, properties and application of various types of cosmetics and their effect on the skin.
- To impart working knowledge of handling and care of the equipments and implements used in Beauty Therapy.
- To train the students in the care and beautification of the body and hair.
- To impart basic knowledge of setting up and management of a beauty parlour, salon and finishing school.
- To impart basic knowledge of profession ethics and attitude.

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

COURSE LEVEL: On completion of this course, a student can take up a course for a job role in Beauty and Wellness.

COURSE DURATION: 265 PERIODS
CLASS XI: 265 PERIODS

2. SCHEME OF UNITS AND ASSESSMENT

This course is a planned sequence of instructions consisting of Units meant for developing employability and vocational competencies of students of Class XI opting for vocational subject along with general education subjects. The unit-wise distribution of hours and marks for Class XI is as follows:

CLASS XI (2018-19)			
	Units	No. of Periods for Theory and Practical 265	Max. Marks for Theory and Practical 100
Part A	Employability Skills		
	Unit 1: Communication Skills – III	20	10
	Unit 2: Self-management Skills – III	15	
	Unit 3: Information and Communication Technology Skills – III	10	
	Unit 4: Entrepreneurial Skills – III	25	
	Unit 5: Green Skills – III	10	
	Total	80	10
Part B	Vocational Skills		
	Unit 1: Introduction to Beauty & Wellness Industry and Beauty Therapy	35	50
	Unit 2: Skin Care Services	50	
	Unit 3: Manicure and Pedicure Services	50	
	Unit 4: Depilation Services	30	
	Total	165	50
Part C	Practical Work		
	Practical Examination	06	15
	Written Test	01	10
	Viva Voce	03	05
	Total	10	30
Part D	Project Work/Field Visit		
	Practical File/Student Portfolio	10	10
	Total	10	10
	Grand Total	265	100

3. UNIT CONTENTS

CLASS XI

BEAUTY & WELLNESS (807)

Part A: Employability Skills (REF. PAGE NO. 5)

Part B: Vocational Skills

S. No.	Units	Duration (Periods)
1.	Introduction to Beauty and Wellness Industry and Beauty Therapy	35
2.	Skin Care Services	50
3.	Manicure and Pedicure Services	50
4.	Depilation Services	30
	Total	165

UNIT 1: INTRODUCTION TO BEAUTY AND WELLNESS INDUSTRY AND BEAUTY THERAPY

Learning Outcome	Theory (18 Periods)	Practical (17 Periods)	Duration (35 Periods)
1. Identify various career opportunities and methods within the beauty sector	1. Introduction to beauty and wellness Industry 2. Beauty and wellness sub-segments 3. Career path within the beauty industry	1. Identification of beauty and wellness sub-segments using illustrations and videos 2. Presentations on case studies of organizations providing beauty and wellness services	05
2. Identify different services in beauty	1. Services in beauty Therapy	1. Collection of pictures on different	15

UNIT 1: INTRODUCTION TO BEAUTY AND WELLNESS INDUSTRY AND BEAUTY THERAPY			
therapy	<ul style="list-style-type: none"> (i) Pedicure (ii) Manicure (iii) Threading (iv) Waxing (v) Bleach (vi) Face clean up (vii) Make up (viii) Hair do (ix) Mehendi 	<p>services used in beauty therapy and preparation of portfolio by the students</p> <p>2. Group activities on various services in beauty therapy</p>	
3. Prepare and maintain work area	<ul style="list-style-type: none"> 1. Preparation of work area 2. Maintenance of record cards 3. Sterilisation and disinfection 4. Personal presentation and behaviour 5. Safe disposal of waste 6. Storage of tools and equipment 7. Compliance of rules and norms at workplace 	<ul style="list-style-type: none"> 1. Demonstration on preparation and maintenance of work area 2. Filling up client record cards 3. Demonstration of preparing client for treatment 4. Demonstration of sterilization and disinfection of tools and equipment 5. Segregation and disposal of waste 6. Demonstration on storage of products, tools and equipment safely and at proper place 	05
4. Maintain health and safety	<ul style="list-style-type: none"> 1. Hazards and risks at workplace – Fire, chemical, electricity, etc. 2. Threats and risks associated with posture, lifting and carrying objects 3. Maintaining hygiene at the Salon 	<ul style="list-style-type: none"> 1. Exercises on reading information on labels of beauty products 2. Identification of various areas to be cleaned, sanitised and disinfected for maintaining hygienic conditions. 3. Preparation of status checklist for cleaning and safety of Beauty Parlor/Salon 4. Demonstrations on identification of contraindications of various beauty treatments 4. Study of fire safety and electrical safety Acts 	10
Total			35

UNIT 2: SKIN CARE SERVICES			
Learning Outcome	Theory (30 Periods)	Practical (20 Periods)	Duration (50 Periods)
1. Demonstrate the knowledge of anatomy and physiology of skin	<ol style="list-style-type: none"> 1. Structure of the skin – epidermis, dermis, subcutaneous layer, hair follicle, hair shaft, sebaceous gland, arrector pili muscle, sweat gland, and sensory nerve endings 2. Functions of the skin - protection, thermoregulation, hormone synthesis, excretion, immunological function, and sensory function 	<ol style="list-style-type: none"> 1. Reading sessions on the terms used for describing the structure of skin 2. Writing sessions on the terms used for describing the structure of skin 3. Group activities on understanding the structure and functions of skin 	15
2. Perform analysis of skin and demonstrate techniques of skin care	<ol style="list-style-type: none"> 1. Characteristics of the skin and skin types – oily, dry, combination skin 2. Ageing process on skin. 3. Types of skin masks and their effects. 4. Procedure of mask application. 5. Blackhead and whitehead extraction. 6. Skin warming techniques. 	<ol style="list-style-type: none"> 1. Showing videos related to ageing process of skin and mask application 	10
3. Demonstrate the knowledge of the actions of facial, neck and shoulder muscles	<ol style="list-style-type: none"> 1. Actions of the facial 2. Actions of the neck 3. Actions of the shoulder 4. Body movements 	<ol style="list-style-type: none"> 1. Showing videos on demonstration of movement of muscles of face, neck and shoulder 	10
4. Perform bleaching procedure	<ol style="list-style-type: none"> 1. Types of bleach 2. Importance of patch test and bleach 3. Resources required for bleaching 4. Skin warming procedure 5. Different types of skin warming devices and its effect on the skin 6. Bleach preparation and application 7. Advantages and disadvantages of bleaching 	<ol style="list-style-type: none"> 1. Demonstration of patch test 2. Analysis of skin sensitivity 3. Demonstration of bleach preparation and application. 4. Demonstration of toning and moisturising of skin 	15
Total			50

UNIT 3: MANICURE AND PEDICURE SERVICES			
Learning Outcome	Theory (25 Periods)	Practical (25 Periods)	Duration (50 Periods)
1. Demonstrate the knowledge of anatomy of hands, nails and feet	<ol style="list-style-type: none"> 1. Human body systems 2. Skeletal system 3. Bones of the arm and leg 4. Bones of hand and wrist 5. Muscular system 6. Structure of the nail 7. Nail growth and structure 	<ol style="list-style-type: none"> 1. Demonstration on identification of bones and muscles of hand and feet in pictures 2. Practical exercises on the location of bones on hand and foot 	10
2. Perform Manicure services	<ol style="list-style-type: none"> 1. Preparing the work area 2. Equipment and materials used for Manicure 3. Identification of nail conditions and contra-indications 4. Manicure procedure 5. Applying nail polish 	<ol style="list-style-type: none"> 1. Demonstration on identification of nail shape, nail condition (texture, disease, etc.) 2. Demonstration on identification of contra-indications that restrict Manicure services 3. Demonstration on preparing client for manicure and pedicure services 4. Identification of products and tools suitable for carrying out manicure services 	20
3. Perform Pedicure services	<ol style="list-style-type: none"> 1. Preparing the work area 2. Equipment and materials used for Pedicure 3. Contraindications for Pedicure 4. After care advice 	<ol style="list-style-type: none"> 1. Practical exercises on identification of nail shape and nail condition (texture, disease, etc.) 2. Identification of contra-indications that restrict Pedicure services. 3. Identification of bones and muscles of hand and feet 4. Demonstration on preparation of client for pedicure services 5. Identification of 	20

UNIT 1: INTRODUCTION TO BEAUTY AND WELLNESS INDUSTRY AND BEAUTY THERAPY			
		products and tools suitable to carry out the Pedicure services	
Total			50

UNIT 4: DEPILATION SERVICES			
Learning Outcome	Theory (20 Periods)	Practical (10 Periods)	Duration (30 Periods)
1. Perform waxing	<ol style="list-style-type: none"> 1. Types of hair 2. Structure of hair 3. Growth cycle of hair 4. After care advice for waxing 5. Guidelines for waste disposal 6. Guidelines for work area preparation 7. Consulting, planning and preparing for waxing with the Client 8. Performing skin sensitivity test 9. Contra-indications and contra-actions that affect or restrict waxing treatments 10. Equipment and products required for waxing 	<ol style="list-style-type: none"> 1. Demonstration on conducting skin test to check for reaction 2. Demonstration on assessment of hair growth pattern 3. Demonstration on pre- and post preparation of client for waxing 4. Demonstration of the process for warming the wax 5. Performing waxing process as per requirement 	20
2. Demonstrate the knowledge and skills of basic depilation services - threading	<ol style="list-style-type: none"> 1. Benefits of threading 2. Types of tools and materials used for threading - e.g. scissors, disposable eye brow brush etc. materials: thread 3. Threading techniques 4. Aftercare procedures for threading services 	<ol style="list-style-type: none"> 1. Demonstration of threading process for upper lip hair removal 	10
Total			30

4. 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 salon and observe the following: location, site, mother block, office building, store, facial room, manicure/pedicure room, water tank/tube well, gate and fencing. During the visit, students should obtain the following information from the owner or the supervisor of the salon:

- Area under salon and its layout
- Types of equipment and material used
- Location, environment, convenience
- Sale procedure
- Manpower engaged
- Total expenditure of salon
- Total annual income
- Profit/Loss (Annual)
- Any other information

5. LIST OF EQUIPMENT AND MATERIALS

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

1. All in one Eyelash Brush/Comb
2. All Propose Comb
3. Applicator Brush
4. Arm Chair
5. Barber Brush
6. Bath Comb
7. Blackhead Remover
8. Bleach Brush
9. Body Massage Bed
10. Bowles
11. Brushing Machine 10 in 1 (Vacuum. High Frequency, galvanic, wood lamp, magnifying glass, steamer)
12. Complete Make Up Brushes Set

13. Computer with Internet
14. Crimpers
15. Curling Iron
16. Curling Rods(Small, Medium, Large)
17. Cuticle knife, Buffers, Pedicure rasp (hard skin removal), Nail scissors, Clippers , Hard skin remover, nipper (for pedicure),
18. Cutting Scissors
19. Cutting Sheets
20. Decorative Pins Boxes
21. Double Wax heater
22. Dustbin
23. Electric Curler
24. Exfoliation machine
25. Eyebrow Pencil Sharpener
26. Facial Bed
27. Facial Steamer
28. Foot Scraper
29. Foot spa
30. Frosting Cap
31. Galvanic Machine
32. Garbage Bin/Bags
33. Hair Brush
34. Hair Clips set
35. Hair Connector
36. Hair Cutting Comb
37. Hair Dresses Chair/ Stool
38. Hair Dryer
39. Hair Pins Boxes
40. Hair Steamer
41. Hand Mirrors
42. High Chair
43. Hydraulic Chair 5
44. Infrared Lamp
45. Invisible Pins Boxes
46. Jumbo Rollers set
47. Ladies/kids Cut Catalogues
48. Large Size Rollers
49. Large Stools
50. Large Tooth Comb
51. Magazines/Books with rack
52. Magnifying Glass
53. Make up Catalogues
54. Make up Palette
55. Manicure Set
56. Manicure Table
57. Markers Set As required
58. Measuring Cup sets
59. Measuring Glass sets
60. Measuring Spoon sets
61. Medium Size Rollers
62. Mixing Bowles set
63. Modular Mirrors
64. Mop
65. Needle for Striking
66. Paraffin Heater
67. Pedicure Set
68. Perming Cap
69. Pin Curl Clips Boxes
70. Razor with blade
71. Roller Brush set 5 in 1
72. Roller pins
73. Shampoo Bowl Set
74. Shampoo Unit
75. Shower Cap
76. Small Scissors
77. Small Size Hair Rollers Wires
78. Small Stools
79. Spatula
80. Spray Bottle
81. Sterilizer
82. Stone Therapy set
83. Straightening Iron
84. Tail Comb
85. Thinning Scissors
86. Timer
87. Tinting Brush with Comb
88. Tweezer
89. White Board
90. Wide Toothed Comb
91. Working and facial Trolleys

6 VOCATIONAL TEACHER'S/ TRAINER'S QUALIFICATION

The suggestive qualifications and minimum competencies for the vocational teacher should be as follows:

S. No.	Qualification	Minimum Competencies	Age Limit
1.	Diploma in Cosmetology/ Beauty Therapy/ Beauty Culture from a recognized Institution Minimum 1 year work/teaching experience in the relevant field	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

AGRICULTURE (808)

Job Role: (Agriculture Extension Worker)

SCHEME OF UNITS

This course is a planned sequence of instructions consisting of Units meant for developing employability and vocational competencies of students of Class XI opting for vocational subject along with general education subjects. The unit-wise distribution of hours and marks for Class XI is as follows:

CLASS XI (2018-19)			
	Units	No. of Periods for Theory and Practical 260	Max. Marks for Theory and Practical 100
Part A	Employability Skills		
	Unit 1: Communication Skills – III	20	10
	Unit 2: Self-management Skills – III	15	
	Unit 3: Information and Communication Technology Skills – III	10	
	Unit 4: Entrepreneurial Skills – III	25	
	Unit 5: Green Skills – III	10	
	Total	80	
Part B	Vocational Skills		
	Unit 1: Scope and Importance		50
	Unit 2: Physical Environment		
	Unit 3: Agriculture Economics and Crop Production		
	Unit 4: Genetics and Plant Breeding		
	Unit 5: Scope and Importance		
	Total	160	50
Part C	Practical Work		
	Practical Examination	06	15
	Written Test	01	10
	Viva Voce	03	05
	Total	10	30
Part D	Project Work/Field Visit		
	Practical File/Student Portfolio	10	10
	Total	10	10
	Grand Total	260	100

Part A – Employability Skills (Ref. No. 5) –**10 marks****Part B – Vocational Skills****60Marks**

Section	Units	No. of periods	Marks
I.	Agriculture and Crop Production		60
Part A	• Unit: I: Scope and Importance	5	
	• Unit: II: Physical Environment	35	
	• Unit: III: Agriculture Economics and Crop Production	35	
Part B	Genetics and Plant Breeding	30	
	• Unit: IV Genetics and Plant Breeding		
II	Livestock Production		
	• Unit V: Scope and Importance	10	
	• Unit VI: Care and Management	40	
	• Unit VII: Bio-waste Management and Government Schemes	05	
	Total	160	

SECTION - I**PART A - AGRICULTURE AND CROPPRODUCTION:****Unit I: Scope and Importance:**

- Definition of Agriculture, its branches
- Scope in the national economy and employment

Unit II: Physical Environment:

1. Climate and Weather, elements of Weather: Rainfall, Temperature, Humidity, Wind, Sunshine, Climate Change and Global warming. Introduction to various meteorological equipments.
2. Soil, Soil texture and structure and its types, distribution and area.
3. Soil erosion and Soil conservation. Reclamation of problematic soils acidic and alkali.
4. Tillage definition and types. Concept of conservation and tillage.

Unit III: Agriculture Economics and Crop Production

1. Agricultural Economics, Cooperative system in Agriculture, Crop insurance. Kisan Credit Cards. Marketing of Agricultural products (supply chain, retailing, wholesale), haats.
2. Package of practices in field crops like important varieties, seed rate, sowing time, intercultural operations, yield and marketing for Rice, Wheat, Maize, Mustard, Sunflower, Soya bean, Groundnut, Black gram, Red

gram, Pea, Jute, Sugarcane, Sorghum, Pearl millet and Finger millet.

3. Package of practices of fruits: Mango, Banana, Guava, Lime, Grape, Apple, Pomegranate. Vegetables: Potato, Tomato, Cauliflower, Cabbage, Spinach, Brinjal, Bottle gourd, Pumpkin, Cucumber. Flower-Rose, Gladiolus, Marigold.
4. Types of seed-foundation and certified and methods of plant propagation – Layering and Cutting, and Tissue culture.
5. Important farm implements and their general maintenance.

PART B - GENETICS AND PLANT BREEDING

30 Periods

Unit IV: Genetics and Plant Breeding

1. Cell and its structure, cell division-Mitosis and Meiosis and their significance in plant growth and development.
2. Introduction to -DNA, RNA, and their differences.
3. Role of Genetics in Plant breeding, self and cross-pollinated crops, methods of breeding in field crops- introduction, Selection, Hybridization, Mutation.
4. Mendel's laws of Inheritance. Illustrative depiction of the Mendel's experiments, their importance in plant breeding.

SECTION - II: Live stock Production

Unit V: Scope and Importance

- (a) Importance of livestock in Agriculture, National Economy and Nutritional security
- (b) Important animal based food products and their role in our diet.
- (c) Important indigenous and exotic breeds of cattle, buffalo and poultry, and quantitative and qualitative production details of produces (milk, meat and eggs)
- (d) Concept of an and pattern of cooperative system of milk procurement and pricing of milk. Marketing of milk in India

Unit VI: Care and Management

- (a) Animal body structure and functions.
- (b) Concept of grazing and stall feeding including poultry feeding.
- (c) Principles of feeding, feeding practices; important fodder crops; Silage and Hay preparation; Balanced ratio-definition and ingredients.
- (d) Housing of dairy animals and poultry animals.
- (e) Management of calves, bullocks, pregnant and milch animals as well as chicks and layers.
- (f) Production of milk and eggs.
- (g) Systems of milking by hand and by machine. Important considerations in both these methods.
- (h) Concept of clean milk production processing, pasteurization and packaging and milk. Value added products from milk.
- (i) Principles of disease management and vaccination.

(i) Signs of sick animals, symptoms of common diseases in cattle and poultry-Rinderpest, Black quarter, Foot and Mouth, Mastitis, Haemorrhagic Septicaemia, Solmonellosis, bird flu, Fowl Pox and Ranikhet disease, their prevention and control.

Unit VII: Bio-Waste Management and Government Schemes

- (a) Utilization of animals in Bio-wastes and Biogas plant
- (b) Important government schemes for development of livestock dairy and purity in India. Their important features and eligibility criteria.

AGRICULTURE

CLASS XI (PRACTICAL)

30marks

Section	Units	No. of periods	Marks
I	Part A-Agriculture and Crop Production	30	12
	Part B- Genetics, Plant Breeding and Microbiology	--	--
II	Livestock practical	20	08
	Reports of the visit		05
	Viva voce		05
	Total	50	30

SECTION - I

Part A - Agriculture and Crop Production

1. Agriculture and Crop Production -Practical

- (a) Visit to a crop field. Identify different crops growing in the field and make are port.
- (b) Identification of farm implements used for different operations, draw a design of at least 5 implements and make are port.
- (c) Identification of seeds of different crops.
- (d) Seed germination test. (two cereals , two pulses, two vegetables, two flowers)
- (e) Calculation of cost of production of wheat crop in one hectare of land area & prepare are port.
- (f) Visit to an orchard and identify different fruit crops and make are port.
- (g) Identification of important vegetable crops, prepare are port.
- (h) Identification of important flower crops.
- (i) Orchard layout, digging of pits and planting of sapling of any one fruit crop.
- (j) Land preparation and sowing of wheat crop seed in the bed.

SECTION – II

2. Livestock -Practical

- (a) Identification of body parts of dairy animals and Poultry.
- (b) Identification of common breeds of cows, buffaloes and poultry birds.
- (c) Handling and restraining of animals.
- (d) Testing of milk fat and SNF.
- (e) Visit to a local veterinary hospital and observe the condition of a sick animal and prepare a report.
- (f) Compute ration for an animal and poultry and prepare are port.
- (g) Visit to milk processing plant and on outlet a milk & milk products centre. Record the processing & sale of variety in milk based products.
- (h) Identification of feeds, fodder crops and grasses.
- (i) Visit to Bio gas plant.

3. Report on the Visits

1. The student have to prepare a report of their visit to different organizations and submit to the subject teacher for the evaluation. The report must contain the student's original work and observations.
2. Prepare Herbarium of different crops and weed species. The leaves of the crops and weeds are pressed dried and mounted on the Herbarium sheet.

4. Viva Voce

Students can be asked questions based on:

- (i) Identification of objects
- (ii) Visit Report analysis.
- (iii) Experiences in their field visits, etc.

A range of 5 to 10 questions can be asked depending on the response of the student. Evaluation $5 \times 1 = 5$ Or should be based on number of questions answered. Evaluator should stick to the time and $\frac{1}{2} \times 10 = 5$ number of questions.

FOOD PRODUCTION (809)

Job Role: (Trainee Commie)

SCHEME OF UNITS

This course is a planned sequence of instructions consisting of Units meant for developing employability and vocational competencies of students of Class XI opting for vocational subject along with general education subjects.

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

CLASS XI (2018-19)

	Units	No. of Periods for Theory and Practical 260	Max. Marks for Theory and Practical 100
Part A	Employability Skills		
	Unit 1: Communication Skills-III	20	10
	Unit 2: Self-Management Skills-III	15	
	Unit 3: Information and Communication Technology Skills-III	10	
	Unit 4: Entrepreneurial Skills-III	25	
	Unit 5: Green Skills-III	10	
	Total	80	
Part B	Vocational Skills		
	Unit 1: Hospitality Industry as a Career		50
	Unit 2: The Food Production department		
	Unit 3: Uniform, Safety and Hygiene in kitchen		
	Unit 4: Kitchen Equipments / Appliances		
	Unit 5: Kitchen Commodities		
	Unit 6: Storage of Commodities		
	Unit 7: Techniques for Pre-preparation		
	Unit 8: Methods of Cooking		
	Unit 9: Salads		
	Unit 10: Soups		
	Unit 11: Egg Cookery		
	Total	160	50
Part C	Practical Work		
	Practical Examination	06	15
	Written Test	01	10
	Viva Voce	03	05
	Total	10	30
Part D	Project Work/field Visit		
	Practical File/Student Portfolio	10	10
	Total	10	10
	Grand Total	260	100

FOOD PRODUCTION CLASS XI

Part A: Employability Skills (REF. PAGE NO. 5)

Part B: Vocational Skills

S. No.	Topic	Sub-topic
1	Hospitality Industry as a Career	Introduction – Scope of hospitality industry Core and allied areas Career opportunities in hospitality industry Qualities required in a personnel willing to join hospitality Industry
2	The Food Production department	Introduction Sections in a kitchen Knowledge, Skill and Attitude development Kitchen Organizational Structure Duties and responsibilities
3	Uniform, Safety and Hygiene in kitchen	Uniform & protective clothing General safety precautions Maintaining hygiene – <ul style="list-style-type: none"> • Personal • Workplace • Safe food handling
4	Kitchen Equipments / Appliances	Classification of equipments Care of equipments& appliances Kitchen knives & their maintenance Safety procedures in handling equipments& appliances
5	Kitchen Commodities	Plant origin: <ul style="list-style-type: none"> • Cereal • Pulses • Fruits • Nuts • Vegetables • Spices / Herbs • Oil • Sugar Animal origin: <ul style="list-style-type: none"> • Dairy products • Eggs • Meats • Fish & other Seafood • Fats Other <ul style="list-style-type: none"> • Salt
6	Storage of Commodities	Perish ability of a commodity Storage techniques Stock Levels Maintaining records of storage and issues <ul style="list-style-type: none"> • Goods received book • Bin card
7	Techniques for Pre-preparation	Techniques of pre-preparation Using knives Vegetable cuts
8	Methods of Cooking	Aims and objectives of cooking food Classification: <ul style="list-style-type: none"> • Dry • Moist

		<ul style="list-style-type: none"> • Medium of fat Applying simple methods of cooking: <ul style="list-style-type: none"> • Boiling (Beans/Rice/Beetroot) • Grilling (Bell pepper/ Zucchini/Potato) • Blanching Tomatoes • Broiling (Cumin seed) • Frying (Potatoes)
9	Salads	Classification Parts of a salad: <ul style="list-style-type: none"> • Base • Body • Dressing • Garnish Recipes for: <ul style="list-style-type: none"> • Salad Waldorf • Salad Nicosia • Grilled chicken salad or Sprouts salad • Pasta salad Importance of salads in diet
10	Soups	Definition Classification Recipes for: <ul style="list-style-type: none"> • Cream of Tomatoes soup • Puree of Carrot soup • Cold soup – Gazpacho • Chicken violate Importance of soup in diet
11	Egg Cookery	Structure of an egg Methods of cooking

FRONT OFFICE OPERATIONS (810)

JOB ROLE: Counter Sale Executive

(QUALIFICATION PACK: Ref. Id. THC/Q3902)

SECTOR: Travel, Tourism and Hospitality

Class - XI (2018-19)

1. COURSE OVERVIEW

COURSE TITLE: FRONT OFFICE OPERATIONS- Counter Sale Executive

The **Hospitality** industry is a broad category of fields within the service industry that includes lodging, event planning, theme parks, transportation, cruise line and additional fields within the tourism industry. The hospitality industry is a several billion dollar industry that mostly depends on the availability of leisure time and disposable income. A hospitality unit such as a restaurant, hotel, or even an amusement park consists of multiple groups such as facility maintenance, direct operations (servers, housekeepers, porters, kitchen workers, bartenders, management, marketing, and human resources etc).

Hospitality is the relationship between the guest and the host, or the act or practice of being hospitable. This includes the reception and entertainment of guests, visitors or strangers.

Some important sectors of the hospitality industry are: Accommodation sector, Food and beverage sector, Meetings, incentives, conventions and events (MICE) sector, Clubs and gaming sector, Entertainment and recreation sector, Travel and tourism sector, Visitors information sector.

A few out of the numerous job roles available in the Hospitality sector are : Hotel general manager, Hotel clerk, Bellhop, Meeting and convention planner, Concierge, Maitre d', Executive chef, Reservation ticket agent, Maids and housekeeping cleaner, Gaming dealer, etc.

Besides several jobs available in hospitality sector, the Counter Sale Executive also called Counter Sale Assistant or Counter Service Executive, is responsible for receiving customers, taking orders, getting it prepared and serving to customers, answers, queries, transfer order to kitchen and instruct the kitchen staff as per the requirement of customers at hotels as well as canteens, food plazas and cafe, etc.

COURSE OUTCOMES: On completion of the course, student 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.
- Prepare for the counter sale service at the hotels, restaurant, food plazas, etc.
- Ensure his/her availability at the counter all the time for quick service to the customer.
- Greet customers, present menus and help customers select menu items
- Take order from the customer and establish customer food and beverage requirement quickly.

- Communicate with customers for their special requirement of chosen food and beverage items.
- Confirm final order as per the company's SOP and process it for preparation.
- Serve the customer with manners and etiquette maintaining safety and hygiene.
- Manage administrative work at the counter.
- Tabulate and present bills for payment etc.

COURSE REQUIREMENTS: The student must have successfully completed Class-X.

COURSE LEVEL: This is a senior secondary level course. On completion of this course, a student can take up higher level course for a job role in Hospitality sector.

COURSE DURATION: 265 PERIODS
CLASS XI: 265 PERIODS

2. SCHEME OF UNITS

This course is a planned sequence of instructions consisting of Units meant for developing employability and vocational competencies of students of Class XI opting for vocational subject along with general education subjects. The unit-wise distribution of hours and marks for Class XI is as follows:

CLASS XI (2018-19)			
	Units	No. of Periods for Theory and Practical 265	Max. Marks for Theory and Practical 100
Part A	Employability Skills		
	Unit 1: Communication Skills-III	20	10
	Unit 2: Self-management Skills-III	15	
	Unit 3: Information and Communication Technology Skills-III	10	
	Unit 4: Entrepreneurial Skills-III	25	
	Unit 5: Green Skills-III	10	
	Total	80	10
Part B	Vocational Skills		
	Unit 1: Lets Recall Tourism		50
	Unit 2: Evolution and Growth of Hotels		
	Unit 3: Communication Skills		
	Unit 4: Pronunciation & Body Language		
	Unit 5: Grooming Standards		
	Unit 6: Telephone Manners		
	Unit 7: Guest Services in Hotels		
	Unit 8: Role of Technology in Hospitality		
	Total	165	50
Part C	Practical Work		
	Practical Examination	06	15
	Written Test	01	10
	Viva Voce	03	05
	Total	10	30
Part D	Project Work/Field Visit		
	Practical File/Student Portfolio	10	10
	Total	10	10
	Grand Total	265	100

3. UNIT CONTENTS

CLASS XI

FRONT OFFICE OPERATIONS (810)

Part A: Employability Skills (REF. PAGE NO. 5)

Part B: Vocational Skills

Unit-1: Lets Recall Tourism

Unit-2: Evolution and Growth of Hotels

Unit-3: Communication Skills

Unit-4: Pronunciation & Body Language

Unit-5: Grooming Standards

Unit-6: Telephone Manners

Unit-7: Guest Services in Hotels

Unit-8: Role of Technology in Hospitality

BANKING (811)

Job Role: Sales Executive (Banking product)

SCHEME OF UNITS

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CLASS XI (2018-19)			
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	Unit 1: Communication Skills-III	20	10
	Unit 2: Self-management Skills-III	15	
	Unit 3: Information and Communication Technology Skills-III	10	
	Unit 4: Entrepreneurial Skills-III	25	
	Unit 5: Green Skills-III	10	
	Total	80	10
Part B	Vocational Skills		
	Unit 1: Introduction	35	10
	Unit 2: Banker & customer	45	15
	Unit 3: Employment of Bank Funds	45	15
	Unit 4: Negotiable Instruments	35	10
	Total	160	50
Part C	Practical Work		
	Practical Examination	06	15
	Written Test	01	10
	Viva Voce	03	05
	Total	10	30
Part D	Project Work/Field Visit		
	Practical File/Student Portfolio	10	10
	Total	10	10
	Grand Total	260	100

CLASS XI (2018-19)

BANKING (811)

Part A - Employability Skills (REF. PAGE NO. 5)

Part B–Vocational Skills

Unit-1: Introduction

- Definition of Bank - Basic functions of Banker.
- Banking System in India.
 - (i) Commercial Banks.
 - (ii) Private Sector Banks.
 - (iii) Public Sector Banks.
 - (iv) Foreign Banks.
 - (v) Regional Rural Banks.
 - (vi) Co-operative Banks.

Unit-2: Reserve Bank of India.

Unit-2: Banker and Customer

- Relationship between Banker and Customer.
- Special Types of Customers.
- Retail & Wholesale Banking.
- Deposit Accounts – Savings Accounts, Current Accounts, Fixed Deposit Accounts.
- Opening and operation of Accounts.
- Nomination.
- KYC requirements.
- Pass Book.
- Minors.
- Partnerships & Companies.

Unit-3: Employment of Bank Funds

- Liquid Assets-Cash in Hand, Cash with RBI & Cash with other Banks.
- Investment in securities.
- Advances - Secured and Unsecured.
- Loans.
 - Term Loans.
 - Cash Credit.
 - Overdraft.
 - Discounting of Bills of Exchange.
 - Modes of creating charge on Securities.
 - Types of Securities.

Unit-4: Negotiable Instruments

- Definition & Characteristics of Cheques.
- Bills of Exchange & Promissory Notes.
- Crossings.

- Endorsements.
- Collection and payment of Cheques.
- Liabilities of Parties.

PRACTICAL

1. Visit the Websites of Five Different Commercial Banks

- (a) (Three Public Sector and Two Private Sector Banks) offering Retail Banking Products.
- (b) Get details of the various Retail Banking Products offered by them.

2. Prepare a Comprehensive Report for each of these Banks Covering the following

- (a) Retail Banking products (one Asset Product and one Liability Product) best suited for people in different stages of life cycle.
- (b) Five client categories to be selected:
 - A young executive who has just joined the job after studies.
 - A young housewife with 1 small child.
 - A middle aged middle level Senior Executive in a Private Firm having two school going children and dependant parents.
 - A elderly lady staying alone with no dependents, and
 - A member of the armed forces in mid 30s.
- (c) Based on the data which you give in the above, justify your selections for each of them.
- (d) List the documents to be submitted by the customers for applying for each product. You can obtain sample forms from any of the banks as you think appropriate.
- (e) Explain the operational details for each of the products.

MARKETING (812)

Job Role: Marketing Executive

SCHEME OF UNITS

This course is a planned sequence of instructions consisting of Units meant for developing employability and vocational competencies of students of Class XI opting for vocational subject along with general education subjects. The unit-wise distribution of hours and marks for Class XI is as follows:

CLASS XI (2018-19)			
	Units	No. of Periods for Theory and Practical 260	Max. Marks for Theory and Practical 100
Part A	Employability Skills		
	Unit 1: Communication Skills-III	20	10
	Unit 2: Self-management Skills-III	15	
	Unit 3: Information and Communication Technology Skills-III	10	
	Unit 4: Entrepreneurial Skills-III	25	
	Unit 5: Green Skills-III	10	
	Total	80	10
Part B	Vocational Skills		
	Unit 1: Introduction to Marketing		50
	Unit 2: Marketing Environment		
	Unit 3: Marketing Segmentation, Targeting & Positioning		
	Unit 4: Fundamentals of Marketing Mix		
	Unit 5: Consumer Behavior		
	Total	160	50
Part C	Practical Work		
	Practical Examination	06	15
	Written Test	01	10
	Viva Voce	03	05
	Total	10	30
Part D	Project Work/Field Visit		
	Practical File/Student Portfolio	10	10
	Total	10	10
	Grand Total	260	100

CLASS XI (2018-19)
MARKETING (812)

Part A - Employability Skills (REF. PAGE NO. 5) -10Marks

Part B–Vocational Skills

-50 Marks

S. No.	Unit	Session	Marks Allotted
1.	Introduction to Marketing	<ul style="list-style-type: none"> • Meaning, Nature, Objectives, Scope &Importance of Marketing. • Difference between Marketing & Selling. • Marketing Philosophies. 	10
2.	Marketing Environment	<ul style="list-style-type: none"> • Meaning and Importance. • Macro Environment Factors. • Micro Environment Factors. 	08
3.	Marketing Segmentation, Targeting & Positioning	<ul style="list-style-type: none"> • Meaning & Importance of Segmentation. • Bases of Market Segmentation. • Meaning and Need for Targeting. • Types of Targeting. • Meaning & Need for Positioning. • Positioning Strategies. 	12
4.	Fundamentals of Marketing Mix	<ul style="list-style-type: none"> • Meaning and Importance of Marketing Mix. • Marketing Mix Components – Service Sector & Consumer Goods. 	08
5.	Consumer Behavior	<ul style="list-style-type: none"> • Meaning and Importance of Consumer Behavior. • Factors Affecting Consumer Buying Behavior. • Roles of Buying Behavior. • Stages of Buying Behavior. 	12

PRACTICAL

(Any three of the following)

1. Visit to retail and wholesale stores located nearby and prepare report on the Frequency and volume of sale of selected products of different categories to Customers classified by age and sex.
2. Ascertain from the local market of selected consumer goods to what extent Economic, Social and Cultural factors affect the demand for particular goods, Prepare report.
3. Conduct household or market survey and report on the buying motive of Consumers as regards to price and quality, consumers being classified by Age, sex and income, given certain selected products.

4. Survey of demand for selected products available under different brand names through household enquiries in the local area.
5. Taking any two brands of your choice, collect the following market information.
 - (a) Segments for which they are made.
 - (b) Competitors brands.
 - (c) Marketing mix information – information about its price, ways of promotion, ways of distribution.

**LEARNING OUTCOME
BASED
VOCATIONAL CURRICULUM**

COURSE: Health Care (813)

JOB ROLE: General Duty Assistant

(QUALIFICATION PACK: Ref. Id. HSS/Q5101)

Class - XI (2018-19)

1. COURSE OVERVIEW

COURSE TITLE: Health Care –General Duty Assistant

A General Duty Assistant, a service and component important in the Healthcare sector which is going rapidly over the years. India has a shortfall of 6 million health care professionals and India is far behind the global standards in term of availability of health care services. The job role of General Duty Assistant is one such area where the shortage of this kind of manpower is felt.

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

- Communicate effectively with the customers;
- Identify the principal components of a computer system
- Identify and control hazards in the workplace that pose a danger or threat to their safety or health, or that of others.
- Demonstrate techniques to maintain the personal hygiene needs of a patient;
- Demonstrate the ability to perform essential clinical skills for providing basic healthcare services;
- Demonstrate the knowledge of safety, usage of protective devices and precautions while using oxygen;
- Demonstrate professional behaviour, personal qualities and characteristics of a Patient Care Assistant;
- Demonstrate the knowledge of Immunization schedule and National Immunization programme;
- Demonstrate the knowledge of bio-medical waste and its management;
- Demonstrate the knowledge of emergency medical response and other actions in the event of medical emergencies;
- Demonstrate effective communication skills for a Patient Care Assistant;
- Demonstrate the knowledge of role and functions of healthcare professionals and staff in different departments of hospitals;
- Assist healthcare professionals in the development and implementation of Care Plan;
- Perform various activities for prevention and control of Hospital Acquired Infections;
- Assist in administering First Aid and providing Emergency Medical Relief; and
- Assist in developing and maintaining public relations.

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

COURSE LEVEL: This is a beginner level course. On completion of this course, a student can take up an Intermediate level course for a job role in Healthcare, such as General Duty Assistant in Class XI and Class XII.

COURSE DURATION: 260PERIODS
CLASS XI: 260 PERIODS

2. SCHEME OF UNITS

This course is a planned sequence of instructions consisting of Units meant for developing employability and vocational competencies of students of Class XI opting for vocational subject along with general education subjects. The unit-wise distribution of Periods and marks for Class XI is as follows:

CLASS XI			
Units		No. of Periods for Theory and Practical =260 (240 Teaching and Training + 20 Evaluation)	Max. Marks for Theory and Practical = 100 (60 Theory and 40 Practical)
Part A	Employability Skills		
	Unit 1: Communication Skills – III	20	10
	Unit 2: Self-management Skills – III	15	
	Unit 3: Information and Communication Technology Skills – III	10	
	Unit 4: Entrepreneurship Development – III	25	
	Unit 5: Green Skills – III	10	
		80	
Part B	Vocational Skills		
	Unit 1: Introduction to Healthcare System	25	50
	Unit 2: Role of General Duty Assistant in Patient Care	25	
	Unit 3: Customer Service and Public Relation	25	
	Unit 4: Human Anatomy, Physiology and Nutrition	25	
	Unit 5: Primary Healthcare and Medical Emergency	20	
	Unit 6: Handling Emergency Services and Operation Theatre	20	
	Unit 7: Personal Hygiene and First Aid	20	
		160	50
Part C	Practical Work		
	Practical Examination	06	15
	Written Test	01	10
	Viva Voce	03	05
		10	30
Part D	Project Work/Field Visit		
	Practical File/Student Portfolio	10	10
		10	10
	Total	260	100

3. UNIT CONTENTS

CLASS XI

Part A: Employability Skills (REF. PAGE NO. 5)

Part B: Vocational Skills

S. No.	Units	Duration (Periods)
1.	Introduction to Health Care Sector	25
2.	Role of General Duty Assistant in Patient Care	25
3.	Role of Diet Assistant	25
4.	Maintain Hygiene and Food Safety	25
5.	Food Storage Practices	20
6.	Food Handling	20
7.	First Aid	20
Total		160

Unit 1: Introduction to Healthcare Systems			
Learning Outcome	Theory	Practical	Total Duration (25 Periods)
1. Describe healthcare delivery systems	<ol style="list-style-type: none"> Different types of healthcare delivery systems Role of voluntary health Sector 	<ol style="list-style-type: none"> Identify different types of healthcare delivery systems followed in India 	3
2. Identify the components and activities of Hospital	<ol style="list-style-type: none"> Functions of a hospital in patient care Enlist the services provided by the hospital to patients 	<ol style="list-style-type: none"> Various components of a Hospital System Various equipment used in hospital 	2
3. Describe role and functions of Clinics	<ol style="list-style-type: none"> Role and functions of a Clinic Preventative care provided at the doctor's clinic Chart for basic preventative care 	<ol style="list-style-type: none"> Requirements for patient safety at doctor's clinic 	2
4. Describe the functions of rehabilitation centre	<ol style="list-style-type: none"> Role of rehabilitation facility in patient recovery Differentiate between services provided at various rehabilitation and convalescent centre 	<ol style="list-style-type: none"> Facilities at the Rehabilitation centre 	2

5. Describe the treatment and the services provided at the long term care facilities	<ol style="list-style-type: none"> 1. Role of long Term care facilities in patient care. 2. Enlist the facilities/ treatment provided by long term care facilities. 	1. Equipment and materials that are used at Long Term Care Facility.	2
6. Demonstrate the knowledge of hospice care	1. Facilities available at Hospital/Home for Hospice Care	<ol style="list-style-type: none"> 1. Assess the need for hospice in treatment of patients 2. Facilities extended by the hospital for hospice care 3. Services provided as part of the hospice Care 	2
7. Demonstrate the knowledge of roles and functions of various departments, professionals and supportive staff of the hospital	1. Roles and functions of various departments and professionals in the hospital	<ol style="list-style-type: none"> 1. Various types of Hospitals 2. Distinguish between General Hospital and Specialized Hospital 3. Draw a chart depicting the roles of departments, professionals and supporting staff of the Hospital 	2
8. Demonstrate the knowledge of roles and functions of supporting departments in hospital	<ol style="list-style-type: none"> 1. Role and functions of various supporting departments of hospital 2. State the services provided by the Medical Record Department and Outpatient Department 3. Explain the activities performed by the hospital housekeeping department 	1. Draw a chain of command in the various department and laboratories of Hospital	2
9. Classify the hospitals on the basis of different criteria	<ol style="list-style-type: none"> 1. Criteria used for classifying the hospitals 2. Different levels of medical care 	1. Classify the hospitals on the basis of bed strength, specialty and level of medical Care	3
10. Enumerate the role of General Duty Assistant to the various functions of hospital	<ol style="list-style-type: none"> 1. Roles and functions of General Duty Assistant in the hospital 2. Various activities/tasks that should be performed by GDA to effectively discharge his/her duties and responsibilities in hospital 	<ol style="list-style-type: none"> 1. Knowledge of activities and Practices followed for prevention of spread of Diseases 2. Draw a diagram depicting the various 	3

		role and functions of GDA	
11. Demonstrate the knowledge of the qualities of a Good General Duty Assistant	1. Qualities of a good General Duty Assistant in the hospital	1. Activities performed by GDA in supporting the healthcare team members 2. Ability to provide personal care	2
Total			25

Unit 2: Role of General Duty Assistant in Patient Care			
Learning Outcome	Theory	Practical	Total Duration (25 Periods)
1. Identify the role and functions of Patient care Assistant	1. Essential duties and responsibilities of Patient care assistant	1. Knowledge of maintaining	1
2. Describe the daily care Plan of patient	2. Various activities of patient's daily care routine, including bathing, feeding, excreta disposal, transfer of patients, medication, etc.	1. Prepare a daily care plan for patients	2
3. Identify basic components required for patient comfort	1. Basic components required for patients comfort	1. List various elements that can help in comfort to patients	1
4. Describe the patients safety	1. Various elements of patients safety	1. Patients environment and its components	2
5. Provide for the patients daily care	1. Report any evident changes and appearance 2. Provide care needed by the patient	1. Patient checklist and compare with standard measurements 2. Care needed by the patient	2
6. Identify the qualities of a good Patient care assistant	1. Good qualities of Patient care assistant	1. List the do's and don'ts in healthcare setup 2. Knowledge of medical ethics	1
7. Identify the role of General Duty Assistant implementing care plan	1. Objectives of care plan 2. Role of GDA in preparation and implementation of care plan	1. Enlist the various steps involved in formulating a care plan 2. Identify role General Duty Assistant in formulating care plan	1
8. Demonstrate the knowledge of the role of General Duty	1. Characteristics of a healthy person 2. Various types of diets and their importance with regard to nutrition	1. Various types of diet available in the hospital / home 2. Knowledge of feeding and assisting	2

Unit 2: Role of General Duty Assistant in Patient Care

Learning Outcome	Theory	Practical	Total Duration (25 Periods)
Assistant in feeding a patient		patients with their meals, keeping in view their needs and in a safe and dignified manner	
9. Identify and report vital signs	<ol style="list-style-type: none"> 1. Important vital signs of the body 2. Abnormal vital signs 	<ol style="list-style-type: none"> 1. Knowledge of taking temperature, reading pulse rate and measuring blood Pressure 2. Fill the forms for Documenting information on vital Signs 	2
10. Describe the prepare bed according to the patient's need	<ol style="list-style-type: none"> 1. Features and importance of various types of bed in a hospital 2. Various steps of bed making 3. Roles and functions of General Duty Assistant in bed making 	<ol style="list-style-type: none"> 1. Demonstrate the knowledge of articles used in bed making 2. Demonstrate the steps involved in making of open bed 	2
11. Position the patient according to the need	<ol style="list-style-type: none"> 1. Various positions of patients 2. Therapeutic position 3. Importance of fowler's position 	<ol style="list-style-type: none"> 1. Various position of a Patient 2. Procedure (s) for changing the patient's position 	2
12. Demonstrate the knowledge of facts related to old age	<ol style="list-style-type: none"> 1. Different age groups 2. Explain biological aging 3. Enlist the myths and facts about aging 	<ol style="list-style-type: none"> 1. Knowledge of different age groups 2. Differentiate the myths and facts of Ageing 3. Biological and psychosocial reasons of ageing 	1
13. Identify the normal changes that occur at old age	<ol style="list-style-type: none"> 1. Enlist the common health problems that old people may suffer 2. Legal needs of the elderly 3. Changes that occur in different systems of body during old age 4. Explain the reasons for caring elderly 	<ol style="list-style-type: none"> 1. Normal changes that occur at old age in different systems and part of the body 2. Knowledge of special needs, emotional support, social support and legal needs required at the old age 	1
14. Demonstrate the knowledge of accomplishing basic needs of elderly people	<ol style="list-style-type: none"> 1. Security and safety needs of an elderly people 2. Enlist any five requisites for better feeding during old age 3. Food and fluid needs of elderly people 	<ol style="list-style-type: none"> 1. Knowledge of thinking and learning abilities of old age people 2. How GDA should communicate with an older patient 	2

Unit 2: Role of General Duty Assistant in Patient Care

Learning Outcome	Theory	Practical	Total Duration (25 Periods)
15. Identify common problems and care of elderly	<ol style="list-style-type: none"> 1. Enlist the common problem of skin and nails in elderly 2. Enumerate the common problems related to sensory organ in old age 3. Common eye problems that may occur in old age 4. Common problems that occur in endocrine glands during old age 	<ol style="list-style-type: none"> 1. Knowledge of common problems in human body systems during old age 2. Knowledge of the role of GDA in providing care according to patients need 	1
16. Demonstrate the knowledge of caring of infants and children	<ol style="list-style-type: none"> 1. Enlist different age group before 18 years of age 2. Explain the stages of learning and thinking abilities amongst infants and children's 3. Explain the importance of nutrition and hydration required for infants and children 4. Safety needs of children 	<ol style="list-style-type: none"> 1. Classify the age groups of children below 18 years 2. Knowledge of growth and development of children, stages of learning and thinking ability of child and their safety aspects 3. Knowledge of nutrition and hydration for infants and children's and special care needed for them 	2
17. Demonstrate the knowledge of goals, cycle and phases of disaster management and emergency response	<ol style="list-style-type: none"> 1. Define disaster 2. Importance of disaster management 3. Phases of disaster management 4. Two preparedness measures that should be taken to avoid an earthquake disaster in a multi-storey residential building 	<ol style="list-style-type: none"> 1. Hazards and risks in a given situation 2. Phases in disaster management 3. Read terms and signage for disaster management 4. Sections of the society which are vulnerable to disasters 	1
18. Demonstrate the knowledge of structure, roles and responsibilities of Emergency Response Team	<ol style="list-style-type: none"> 1. Explain significance of ERT 2. Enlist the members of an ERT 3. Enlist the equipment used by an ERT 4. Explain method of rescue and evacuation drill 5. Benefits of drills 	<ol style="list-style-type: none"> 1. Personal protective equipment used by emergency response team or disaster management team 2. Role of various teams in responding to an emergency in a given situation or accident. 3. Agencies responsible for disaster management 4. Type of search and 	1

Unit 2: Role of General Duty Assistant in Patient Care			
Learning Outcome	Theory	Practical	Total Duration (25 Periods)
		rescue operation in a given situation	
19. Demonstrate the knowledge of classification, causes, methods and techniques of extinguishing fire using appropriate equipment	1. Terms: <ul style="list-style-type: none"> - Rescue - Alarm - Extinguish - Evacuate 2. Enlist the fire fighting equipment 3. Explain the classification and causes of fire 4. Methods of extinguishing fire 5. Explain procedures of dealing with fire emergencies 6. Differentiate between fire prevention and fire protection	1. Classify the various types of fires 2. Read and understand the signage for fire safety 3. Demonstrate use of personal protective Equipment 4. Determine the fire type and select appropriate fire Extinguisher 5. Perform the technique of extinguishing small fire using portable fire Extinguishers	1
Total			25

Unit 3: Customer Service and Public Relation			
Learning Outcome	Theory	Practical	Total Duration (25 Periods)
1. Demonstrate the skills to handle customers effectively	1. Customer handling as important part of business cycle 2. Customer needs, preferences and expectations	1. Knowledge of do's and don'ts while handling customers 2. Maintain customer Loyalty 3. Build strong relationship with Customers 4. Decrease the customer's waiting Time	4
2. Demonstrate the skills of taking orders on call	1. Process of taking orders over telephone	1. Do's and don'ts while taking orders over Telephone 2. Record and organize the orders accurately	3
3. Demonstrate how to handle customer complaints	1. Typical types of customer complaints 2. Steps of handling customer complaints	1. Record and organize Complaints 2. Steps of handling customer complaints: <ul style="list-style-type: none"> • Listening and understanding the Complaint • Empathize 	3

Unit 3: Customer Service and Public Relation			
Learning Outcome	Theory	Practical	Total Duration (25 Periods)
		<ul style="list-style-type: none"> • Offering the solution • Executing the solution • Taking follow up 	
4. Demonstrate how to answer enquiries	<ol style="list-style-type: none"> 1. Describe steps of answering enquiries 2. State Frequently Asked Questions (FAQs) while enquiries 3. Explain the importance of knowledge of product/ services in answering enquiries 	<ol style="list-style-type: none"> 1. How to answer enquiries in following manner: <ul style="list-style-type: none"> • Acknowledge receipt of an enquiry/request • Explain action taken as a consequence of the enquiry • Make suggestions and justify recommendations • Apologize and reject proposals • Stipulate action requested or to be taken • Establish goodwill and suggest contacts 	4
5. Demonstrate the knowledge of the roles and functions performed by a Medical Receptionist	<ol style="list-style-type: none"> 1. Qualities of a good medical receptionist 2. Tasks performed by a Medical Receptionist 	<ol style="list-style-type: none"> 1. Demonstrate the knowledge of greeting patients and other callers in a courteous and efficient manner 2. Answer telephone calls courteously and as per procedure and norms maintaining medical 	3
6. Demonstrate the knowledge of responding to emergency calls	<ol style="list-style-type: none"> 1. Knowledge of responding to emergency calls 2. Roles and functions of "on call duty doctor" 3. Various equipment available in a 108 emergency service ambulance 	<ol style="list-style-type: none"> 1. Activities in emergency responses 2. Knowledge of routine call and emergency call 	4
7. Demonstrate the knowledge of	<ol style="list-style-type: none"> 1. General stressful situations in hospital 	<ol style="list-style-type: none"> 1. Knowledge of handling people 	4

Unit 3: Customer Service and Public Relation			
Learning Outcome	Theory	Practical	Total Duration (25 Periods)
dealing with patients, attendant	2. Factors affecting relationship between a General Duty Assistant and patient's attendant	with emotional stress or emotional Outbursts 2. Skills required for General Duty Assistant in managing stressful situation	
Total			25

Unit 4: Human Anatomy, Physiology and Nutrition			
Learning Outcome	Theory	Practical	Total Duration (25 Periods)
1. Identify the parts of human body	1. Various terms of anatomy and physiology 2. Functions of various tissues and bones in human body	1. Different parts of the Body 2. Draw diagrams of lungs, urinary system, heart and kidney 3. Roles and functions of various systems of human body	15
2. Demonstrate the knowledge of nutrients in the nutrition and growth of human body	1. Role of various nutrients and vitamins 2. Importance of a balanced diet	1. Food as sources of carbohydrate, protein and fat 2. Knowledge of diseases/disorders caused due to the deficiency of vitamins 3. Knowledge of a balanced diet	10
Total			25

Unit 5: Primary Healthcare and Medical Emergency			
Learning Outcome	Theory	Practical	Total Duration (20 Periods)
1. Identify components of primary healthcare	1. Importance of primary healthcare 2. Various indicators of the millennium development goals (MDGs) related to health	1. Need of primary healthcare in a given Scenario 2. Essential components of primary healthcare 3. Various indicators of the millennium development goals (MDGs) related to Health	14
2. Demonstrate chain of survival	1. Various medical emergency situations	1. Perform early recognition and call for help	6

Unit 5: Primary Healthcare and Medical Emergency			
Learning Outcome	Theory	Practical	Total Duration (20 Periods)
		2. Knowledge of responding to a medical emergency	
Total		20	

Unit 6: Handling Emergency Services and Operation Theatre			
Learning Outcome	Theory	Practical	Total Duration (20 Periods)
1. Receive patient in hospital in emergency condition	<ol style="list-style-type: none"> Emergency Admission procedure Knowledge of discharge procedure 	<ol style="list-style-type: none"> Duties of GDA while admitting an emergency patient Qualities to be possessed by GDA while handling emergencies 	2
2. Handle and monitor the patient	<ol style="list-style-type: none"> Explain safety and security procedures Significance of command and control system in a hospital Explain triage 	<ol style="list-style-type: none"> Maintain patient's triage operation Knowledge of techniques of handling and monitoring patient Draw the human resource hierarchy of the hospital 	3
3. Transport the injured patient internally and externally	<p>Internal and external transportation</p> <ol style="list-style-type: none"> State general principles of transportation Explain the care required before transportation 	<ol style="list-style-type: none"> How to carry a loaded stretcher Perform cradles and drag method of lifting Apply different types of tags of triage 	2
4. Demonstrate the knowledge of different methods and types of immobilization	<p>Significance of use of splint</p> <ol style="list-style-type: none"> Explain the types and purpose of traction Methods of skeleton traction Describe spinal decompression 	<ol style="list-style-type: none"> Types of casting Different types of splint Immobilize the patient 	2
5. Prevent the accidents/injuries in children	<ol style="list-style-type: none"> Term suffocation and choking State the risk factors associated with the child accident at home 	<ol style="list-style-type: none"> Hazards and prevention methods for fire, falls, scales, burns, glass related accidents, poisoning, suffocation and choking Knowledge of 	3

Unit 6: Handling Emergency Services and Operation Theatre			
Learning Outcome	Theory	Practical	Total Duration (20 Periods)
		accidents and the preventive methods	
6. Identify the aims of planning of OT, location, size and different areas of operation theatre	<ol style="list-style-type: none"> 1. Explain about operation theatre 2. Aims of planning of OT 3. State the standard size of OT 4. Explain about different zones of OT with their significance 	<ol style="list-style-type: none"> 1. Knowledge of the size of OT on the basis of surgical Facilities 2. Ideal location of OT in hospital 3. Knowledge of various zones of OT 4. Knowledge of procedures to achieve high degree of asepsis in protective zone, clean zone, sterile zone and disposal zone of OT 	2
7. Demonstrate the knowledge of staffing and equipment of OT	<ol style="list-style-type: none"> 1. Staff present in OT 2. Procedure of care of instruments before and after use in operation theatre 3. State the policies and procedures adopted for maintenance of OT 	<ol style="list-style-type: none"> 1. Range of equipment of OT 2. Staff present in the OT with their duties 3. Knowledge of the care of equipment present in the OT 4. Knowledge of importance of schedule, policies and procedures and training of staff of OT 	2
8. Prepare a Patient for Operation Theatre (OT)	<ol style="list-style-type: none"> 1. Duties of GDA in pre-operative preparation of the patient 2. Information to be written on patient wrist band 	<ol style="list-style-type: none"> 1. Knowledge of the vital parameters to be observed before sending the patient in OT 2. Prepare the patient for surgery 	2
9. Render care of the patient in Post Operative phase	<ol style="list-style-type: none"> 1. Importance of the fowler's position in post operative care 2. Methods of caring the patient required for surgical incision 3. Different measures for corrections and their causes in case of risk of retention of urine post operative 	<ol style="list-style-type: none"> 1. Knowledge of care to be rendered by GDA in the post operative phase 	2
Total			20

Unit 7: Personal Hygiene and First Aid

Learning Outcome	Theory	Practical	Total Duration (20 Periods)
1. Demonstrate good hygiene practice	<ol style="list-style-type: none"> Grooming routines to be followed for personal hygiene Importance of personal hygiene 	<ol style="list-style-type: none"> Practice good personal health and Hygiene. Enlist the hygiene routine to be followed to ensure good health Hand washing Demonstrate trimming of nails. 	3
2. Identify factors affecting good health	<ol style="list-style-type: none"> Factors that affect health and prevent diseases 	<ol style="list-style-type: none"> Maintaining routine exercise and good health Prepare a plan for maintaining good physical health 	1
3. Perform hand washing	<ol style="list-style-type: none"> Method of hand washing Importance of washing and maintain good hand hygiene 	<ol style="list-style-type: none"> Hand washing and hygiene practices 	2
4. Demonstrate personal grooming	<ol style="list-style-type: none"> Importance of good appearance and grooming in life and workplace. 	<ol style="list-style-type: none"> Good grooming habits as per norms of healthcare industry. 	2
5. Describe the principles and rules of First Aid	<ol style="list-style-type: none"> Purpose of First Aid Principles of First Aid 	<ol style="list-style-type: none"> Types of health risks and hazards at various departments of hospitals Enlist emergency situations in a hospital Perform Airway, Breathing and Circulation on a dummy 	3
6. Identify facilities, equipment and materials used for First Aid	<ol style="list-style-type: none"> Facilities and materials used for administering First Aid 	<ol style="list-style-type: none"> Enlist the equipment used for First Aid Demonstrate the knowledge of the use of First Aid kit 	3
7. Perform the role of first aider in fever, heat stroke, back pain, asthma and	<ol style="list-style-type: none"> Role and functions of a First Aider 	<ol style="list-style-type: none"> Perform ABC (Airway, Breathing and Circulation) Measure body temperature 	3

Unit 7: Personal Hygiene and First Aid			
Learning Outcome	Theory	Practical	Total Duration (20 Periods)
food borne illness		using a digital Thermometer	
8. Perform the role of first aider in cuts, bleeding, burns, insect bites and stings, dog bites and snake bites	1. Causes of various types of burns 2. Reasons for using different methods for treating burns	1. Administer first aid for cut and burns in Hypothetical Situations 2. Demonstrate the knowledge of dealing with insect, dog and snake bite	3
Total			20

4. 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 Hospital and observe various activities of the nurses on daily schedule basis. Also observe the following activities at Hospital:

1. Front office activities
2. Reception and registration activities
3. Disinfecting wards and equipments
4. Laundry services
5. Various activities related to patient care
6. Demonstration of First Aid
7. Bed making
8. To observe the various safety measures
9. To take firsthand knowledge of Bio medical waste Management
10. Observe the demonstration of Hospital record keeping

5. LIST OF EQUIPMENT AND MATERIALS

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

1. Advanced Male and Female Catheterization Kit
2. Air Cushion
3. Airway Mannequin
4. Ambu Bag with Mask (Adult)
5. Artery Forceps
6. Auto-loading Stretcher made of aluminum alloy
7. Back Rest
8. Bath Tub
9. Bed Pan
10. Bed Sheet, Blanket, Pillow with Pillow Cover
11. Bed Side Locker
12. Birthing Simulator
13. Call Bell
14. Cardiac Table
15. Cervical Colour Set of Large Medium and Small
16. CPR Mannequin
17. Crash Card
18. Crutch
19. Cupboard
20. Dissecting Forceps
21. Doctors Table
22. Draw Sheet
23. Electronic Blood Pressure Monitoring Machine
24. Enamel Basin
25. Fire Extinguisher (5 KG ABC type)
26. Foot Step
27. Full Body Mannequin – Basic
28. Goggles
29. Gown
30. ICU Bed with Mattress
31. IV Stand
32. Kidney Tray
33. Male Multi-Veno Intravenous Arm
34. Malleable Splint Set (Large Medium and Small)

35. Measuring Glass
36. Nail Cutter
37. Nail Filer
38. Oral care Set
39. Oxygen Cylinder with Connector, Key, Face Mask and Tubing
40. Patient Examination Table
41. Patient Remote Bell
42. Pocket Mask
43. Rubber Sheet (2 x 2 meters)
44. Sand Bag
45. Scissor
46. Scoop Stretcher
47. Simulation Equipment - Mannequins
48. Spine Board
49. Spoon
50. Steel Basin 1 Set (3 Large, 3 Medium, 3 Small)
51. Steel Bowl
52. Steel Glass
53. Steel Jug
54. Steel Plate
55. Steel Tray 1 Set (2 Large, 2 Medium and 3 small)
56. Sterilizer
57. Stethoscope
58. Stop Watch
59. Suction Apparatus
60. Syringe Destroyer and Needle Burner
61. Thermometer
62. Towel
63. Urinal Set (1 Male + 1 Female)
64. Walker
65. Weighing Machine
66. Wheel Chair
67. Wound Care Model Anatomical
68. First Aid Kit

6. VOCATIONAL TEACHER'S/ TRAINER'S QUALIFICATION

The suggestive qualifications and minimum competencies for the vocational teacher should be as follows:

S.No.	Qualification	Minimum Competencies	Age Limit
1.	Teacher B.Sc. Nursing and Midwifery (4 years) or 3½ years Diploma in GNM with one year experience	<ul style="list-style-type: none"> • Effective communication skills (oral and written) • Basic computing skills. • Technical competencies (e.g., Should be able to perform and train the patient related skills) 	18-37 years (as on Jan. 01 (year) Age relaxation to be provided as per Govt. rules.

INSURANCE (814)

Job Role: Sale Executive (Insurance)

SCHEME OF UNITS

This course is a planned sequence of instructions consisting of Units meant for developing employability and vocational competencies of students of Class XI opting for vocational subject along with general education subjects. The unit-wise distribution of hours and marks for Class XI is as follows:

CLASS XI Insurance (814) 2018-19			
Units		No. of Periods for Theory and Practical 265	Max. Marks for Theory and Practical 100
Part A	Employability Skills		
	Unit 1: Communication Skills –III	20	10
	Unit 2: Self-management Skills –III	15	
	Unit 3: Information and Communication Technology Skills – III	10	
	Unit 4: Entrepreneurial Skills – III	25	
	Unit 5: Green Skills – III	10	
		80	
Part B	Vocational Skills		
	Unit 1: Introduction		10
	Unit 2: Life Insurance		20
	Unit 3: Annuities and Unit Linked Policies		10
	Unit 4: Post - Issue Matters		10
			50
Part C	Practical Work		
	Practical Examination	06	15
	Written Test	01	10
	Viva Voce	03	05
		10	30
Part D	Project Work/Field Visit		
	Practical File/ Student Portfolio	10	10
		10	10
	Total	265	100

CLASS-XI
INSURANCE (814)

Part A – Employability Skills (REF. PAGE NO. 5)

Part B – Vocational Skills

Unit-1: Introduction

- Concept of Insurance.
- Need for Insurance.
- Brief history of Insurance industry in India.
 - (i) Enactment of Insurance Act, 1938.
 - (ii) Nationalization of Life Insurance Companies in 1955.
 - (iii) Nationalization of General insurance Companies in 1972.
 - (iv) Malhotra Committee Report – Opening up of Insurance sector to Private Companies in 2000.
 - (v) Setting up of Insurance Regulatory and Development Authority in 1999.

Unit-2: Life Insurance

- Present Organizational set-up of Insurance Companies in India – L.I.C. and Private Companies with foreign joint ventures, selling Insurance through Agents and Banks.
- Objectives of Life Insurance – Protection and Investment.
- Different types of Life Insurance Policies – Chief characteristics and similarity.
- Basic Pre-requisites for Life Insurance – Insurable Interest and utmost Good Faith.
- Procedure for taking a policy.
 - (i) Selection of the Plan.
 - (ii) Consultation of Premium tables.
 - (iii) Filling up of Proposal Form.
 - (iv) Document regarding proof of age.
 - (v) Important clauses of the Policy –eg. Suicide Clause.
 - (vi) Nomination

Unit-3: Annuities and Unit Linked Policies

- Concept of Annuity.
- Objectives of Annuity.
- Procedure followed for obtaining Annuities.
- Meaning of Unit Linked Insurance Policies.
- Procedure for obtaining Unit linked insurance Policies.

Unit-4: Post - Issue Matters

- Lapse of the Policy due to Non-Payment of Premium.
- Revival of the Lapsed Policies.
- Surrender of the Policy – Payment of surrender value.
- Assignment of the Policies.

- Settlement of claims – Procedure to be followed.

PRACTICAL

- 1. Visit the Websites of five different Insurance Companies Offering Life Insurance. Get details on the Various Policies Offered by them.**
- 2. Prepare a Comprehensive Report for each of these Companies Covering the following:**
 - (a) Insurance products best suited for the different life stages – take five examples like young executive having joined job after studies, young married woman with one small child, middle aged man having two school going children and one dependent parent, Elderly lady staying alone with no dependents, member of the armed forces in mid 30s.
 - (b) From the chart above, recommend the best suited life insurance policy to each of them.
 - (c) List the documents to be submitted for applying for each type of insurance and help them fill out the application form. You can obtain sample application forms from the relevant insurance company.
 - (d) Explain the claims procedure along with requirements for claiming insurance at the time of occurrence of the insured event.
- 3. Viva**

LEARNING OUTCOME BASED VOCATIONAL CURRICULUM

COURSE: X-Ray Technician

JOB ROLE: X - Ray Technician (815)

(QUALIFICATION PACK: Ref.Id. HSS/Q0701)

Class - XI (2018-19)

1. COURSE OVERVIEW

COURSE TITLE: Health Care –X Ray Technician

A X-ray Technician creates X-ray images of parts of human body to help physicians diagnose and treat various illnesses and injuries as accurately as possible. Individuals at this job need to create X-ray images of parts of the human body using radiographic equipment under the guidance and supervision of Radiologist. They explain medical imaging procedure, prepare X-ray room and patient for procedure, operate and maintain X-ray machine, record radiological supplies, prepare report & document under Radiologist's guidance, maintain records and carry out other administrative jobs as needed in the department. This job requires individuals to work in a team and in close collaboration with Radiologist. They must be polite and be able to calm and placate upset individuals. They should be able to remain standing for long periods of time and must have strength to transfer and position patients for scans. They should have the capacity to visualize two and three - dimensional spatial.

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

- Communicate effectively with the customers
- Identify the principal components of a computer system
- Identify and control hazards in the workplace that pose a danger or threat to their safety or health, or that of others.
- Enable a candidate to produce good quality X-ray films
- Able to help doctor fraternity leading to optimum utilization of available resources.
- Recognize the benefits of great customer service;
- Provide customers necessary information appropriately and systematically;
- Use techniques to provide services based on customer's needs and wants;
- Administer first aid to a casualty with small cuts, grazes, bruises, external bleeding, minor burns and scalds

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

COURSE LEVEL: This is a level 4 course for Class XI.

COURSE DURATION: 265 PERIODS
CLASS XI: 265 PERIODS

2. SCHEME OF UNITS

This course is a planned sequence of instructions consisting of Units meant for developing employability and vocational competencies of students of Class XI opting for vocational subject along with general education subjects. The unit-wise distribution of Periods and marks for Class XI is as follows:

CLASS XI			
Units		No. of Periods for Theory and Practical = 265 (245 Teaching and Training + 20 Evaluation)	Max. Marks for Theory and Practical = 100 (30 Theory and 70 Practical)
Part A	Employability Skills		
	Unit 1: Communication Skills - III	20	10
	Unit 2: Self-management Skills - III	15	
	Unit 3: Information and Communication Technology Skills - III	10	
	Unit 4: Entrepreneurship Development – III	25	
	Unit 5: Green Skills - III	15	
		80	
Part B	Vocational Skills		
	Unit 1: Radiological Needs of Patients	30	50
	Unit 2: X-Ray Room for Conventional Radiological Procedure	35	
	Unit 3: Operation of Conventional Radiological Equipment	35	
	Unit 4: Infection Control Policies, Procedures and Hygiene	35	
	Unit 5: Bio Medical Waste Management	30	
		165	
Part C	Practical Work		
	Practical Examination	06	15
	Written Test	01	10
	Viva Voce	03	05
		10	30
Part D	Project Work/Field Visit		
	Practical File/Student Portfolio	10	10
		10	10
	Total	265	100

3. UNIT CONTENTS

CLASS XI

Part A - Employability Skills (REF. PAGE NO. 5)

Part B–Vocational Skills

S. No.	Units	Duration (Periods)
1.	Radiological Needs of Patients	40
2.	X-Ray Room for Conventional Radiological Procedure	40
3.	Operation of Conventional Radiological Equipment	40
4.	Infection Control Policies, Procedures and Hygiene	15
5.	Bio Medical Waste Management	25
Total		160

Unit 1: Radiological Needs of Patients			
Learning Outcome	Theory	Practical	Total Duration (40 Periods)
1. List out Patient medical history and interpreting conventional radiological needs	<ol style="list-style-type: none"> Documentation required in context of medical history of patient, procedures undertaking and reports To determine the radiological diagnostic tests required for the patient based on the physician's prescription and the medical history 	1. Anatomy, terms of location and position, fundamental planes, vertebrate structure of man, organization of the body cells and tissues	04
2. Register the X-ray requisition after scrutiny.	1. Comprehension about essential components of X-ray requisition e.g. name, age, sex, OPD no., referring Doctor, diagnosis and X-ray to be done.	<ol style="list-style-type: none"> Scrutinize the requisition form and ascertain that the request is proper. Enter name, age, sex, part to be X-rayed and name of the referring doctor, in register. Able to make judgment about the priority of patients as per clinical patients 	04

<p>3. Demonstrate the Maintenance and care of X-ray machine, its accessories and dark room equipments</p>	<ol style="list-style-type: none"> 1. Basic principles and components of electrical circuits. 2. Basic principles or X-ray equipments e.g. X-ray tube, generator and X-ray table 3. Acquire the basic knowledge of processing (manual/ auto) process, films, chemicals, cassettes and hangers etc. 4. The basics of the cardio vascular system 5. The basics of the respiratory system <ul style="list-style-type: none"> • Basics of the digestive system • Basics of the urinary system • Basics of the reproductive system • Basics of the reproductive system • Basics of the musculoskeletal system • Basics of the ear, nose, throat and eye • Basics of the surface anatomy and surface markings of human body 	<ol style="list-style-type: none"> 1. Check phases and line voltage. 2. Check MAS and KV meters and worm the machine. 3. Check the table, tube and control panel. 4. Check the level of chemicals in tank. 5. Check the temperature of the solutions. 6. Check the unexposed X- ray films. 7. Check the movements of the automatic processors with reference to their functioning. 8. Rectify faults if defected. Consult and report where ever necessary to the radiologist / X-ray engineers. 9. Healthy body systems 10. Basic principles and practical aspects of x-ray machines 11. Medical history of the patient and document it as required 12. Interpret instructions and requirements documented by the physician in the patient's prescription 13. Determine the radiological diagnostic tests required for the patient based on the physician's prescription and the medical history 	<p>04</p>
<p>4. Describe the Correct interpretation of the request made by</p>	<ol style="list-style-type: none"> 1. Method of preparation required for various radiological investigations. 2. Awareness of contradiction for doing x-ray in cases of 	<ol style="list-style-type: none"> 1. Co-relates the part to be X-rayed with the clinical problems of the patient. 2. Varity the 	<p>04</p>

referring Doctor	child bearing age group of ladies.	preparation of the part for the consent X- Alert ray investigation.	
5. Demonstrate the Selection of the proper factors (KV and Mass) and proper sized filled according to the patients built and part to be X-rayed and take the x-ray radiograph of the consent part and process it.	<ol style="list-style-type: none"> 1. Radiological anatomy and physiology of the part to be examined. 2. Mass and KV and their relationship. 3. Various film size. 4. Anatomy, physiology and pathology concerning the procedure. 5. Correct position of the part during exposure. 6. Processing process of manual and automatic processor. 	<ol style="list-style-type: none"> 1. Part of the Analytical body to be x-rayed and selects the exposure factor accordingly. 2. Select the film size. 3. Proper part to be x-rayed. 4. Instructions to the patient. 5. X-ray the requisite part. 6. Film according to the exposure factor. 	05
6. To Instruct the patient required.	<ol style="list-style-type: none"> 1. Instructions regarding collection of film and or report. 	<ol style="list-style-type: none"> 1. Analyze the urgency of x- ray. 2. Should he keep the film ready for dispatch. 	04
7. Demonstrate Operation the x-ray machine for special investigation with radiologist.	<ol style="list-style-type: none"> 1. Sufficient knowledge of special investigations like O.C.G., I,V.P., G.I.T. exam other special investigation 	<ol style="list-style-type: none"> 1. Utilize machine and its accessories such as grids, cones, devices etc. for different procedure and follow the instruction of radiologist. 	04
8. Describe the maintenance of proper accounting of fills, chemicals and x-rays equipments and its accessories.	<ol style="list-style-type: none"> 1. Registers and records of x-rays films and chemicals. Maintenance and servicing of various x-ray equipments and its accessories. 	<ol style="list-style-type: none"> 1. Maintenance of registers like, registration register, dispatch register chemical films, x-ray equipments and accessories register. 	04
9. To Maintain the x-ray store and keep records Up to date.	<ol style="list-style-type: none"> 1. Register and records to be maintain. 2. Should have sufficient knowledge of storage and to keep the record of old x-ray films up to date for any future reference. 	<ol style="list-style-type: none"> 1. Cataloging the x-ray film according to year, date and number. Maintain the standard condition for storage such as humidity, light and temperature etc. 	04
10. Describe the Sorting and dispatching of x-ray films.	<ol style="list-style-type: none"> 1. Identification of film with requisition form. 2. Dispatch the x-ray film in a concerned doctor/ patients . 	<ol style="list-style-type: none"> 1. Sort out X-ray films And dispatch it. 	03
Total			40

Unit 2: X-Ray Room for Conventional Radiological Procedure			
Learning Outcome	Theory	Practical	Total Duration (40 Periods)
1. Demonstrating Setting up the equipment to be used,	<ol style="list-style-type: none"> 1. Method of preparation required for various radiological investigations. 2. Knowledge of radiological anatomy and physiology of the part to be examined. 3. Knowledge of mass and KV and their relationship. 	<ol style="list-style-type: none"> 1. Prepare the room, apparatus and instruments for conventional radiological procedures like X-ray, BMD or mammography 2. Setting up the equipment to be used. 	20
2. Describe the safety precautions to protect self, patients, staff and others from exposure to radiation,	<ol style="list-style-type: none"> 1. Operate radiographic apparatus required for taking an X-ray scan protect self, patients, departmental staff and public from radiation exposure through use of protection instruments and monitoring personnel and the work area 	<ol style="list-style-type: none"> 1. Set up the machine for the desired procedure 2. Radiation physics detection and measurement 3. Biological effects of radiation 4. Position the patient correctly for an x-ray in the following positions: <ul style="list-style-type: none"> • Erect • Sitting • Supine • Prone • Lateral • Oblique • Decubitus 	20
Total			40

Unit 3: Operation of Conventional Radiological Equipment			
Learning Outcome	Theory	Practical	Total Duration (40 Periods)
1. Demonstrate Selection and performing basic views and conventional studies using appropriate radiographic parameters and equipment,	<ol style="list-style-type: none"> 1. The basic principles essential for operation of an X-ray machine: <ul style="list-style-type: none"> • X-Ray and related equipment • Main electric supply and distribution • Diagnostic X-Ray circuits/Exposure timers/AEC etc. • Specialized X-Ray generators - high frequency/shared • Cassettes/construction/ types/care 	<ol style="list-style-type: none"> 1. Measuring exposure and doses of radiographic beams 2. Radiation protection principles and codes of practice 	15

Unit 3: Operation of Conventional Radiological Equipment			
Learning Outcome	Theory	Practical	Total Duration (40 Periods)
	<ul style="list-style-type: none"> • Grid/construction/types/uses • Intensifying screens/construction/type/care/uses 		
2. Demonstrate selection and performing contrast studies using appropriate radiographic parameters and equipment under guidance of radiologist,	1. Information of radiographic: <ul style="list-style-type: none"> • Film/construction/type • Diagnostic X-Ray tubes (past/present/future) • Tube rating and tube supports • X-Ray tables stands • X-Ray films and film processing • Image characteristics • Quality assurance • Presentation and viewing of radiographs 	1. Control and manipulate parameters associated with exposure and processing to produce a required image of desirable quality	15
4. Conceptualize carrying out routine procedures for troubleshooting and maintenance of imaging and processing systems.	1. Principles and practical aspects of X-ray machines 2. Pathology of various systems: cardiovascular system, respiratory system, central nervous system, musculoskeletal system, gastro-intestinal tract and reproductive system	1. Check MAS and KV meters and worm the machine. 2. Check the table, tube and control panel. 3. Check the level of chemicals in tank. 4. Check the temperature of the solutions. 5. Check the unexposed X- ray films. 6. Check the movements of the automatic processors with reference to their functioning. 7. Rectify faults if detected. Consult and report where ever necessary to the radiologist / X-ray engineers.	10
Total			40

Unit 4: Infection Control Policies, Procedures and Hygiene			
Learning Outcome	Theory	Practical	Total Duration (15 Periods)
1. Define infection control risk management	1. Infection control risk management plan 2. Different infection control process	1. Planning for infection control risk 2. Differentiate the processes	02
2. Demonstrate the safe handling, use and disposal of sharp	1. Responsibilities for sharp 2. Different status of a sharp	1. Responsibility towards a sharp	02
3. Demonstrate the reprocessing of reusable medical equipment	1. Category of reusable medical equipment 2. Cleaning of reusable instrument 3. Sterilization of the reusable equipment	1. Reusable medical equipment 2. Clean reusable instrument 3. Sterilize the medical equipment	02
4. Demonstrate the process of environment cleaning	1. Risk factor 2. Cleaning routine	1. Different risks factors	02
5. Demonstrate good hygiene practice	1. Grooming routines to be followed for personal hygiene 2. Importance of personal hygiene	1. Practice good personal health and hygiene. 2. Enlist the hygiene routine to be followed to ensure good health 3. Hand washing 4. Demonstrate trimming of nails.	02
6. Identify factors affecting good health	1. Factors that affect health and prevent diseases	1. Maintaining routine exercise and good health 2. Prepare a plan for maintaining good physical health	02
7. Perform hand washing	1. Method of hand washing 2. Importance of washing and maintain good hand hygiene	1. Hand washing and hygiene practices	01
8. Demonstrate personal grooming	1. Importance of good appearance and grooming in life and Workplace.	1. Good grooming habits as per norms of healthcare industry.	01
Total			15

Unit 5: Bio Medical Waste Management			
Learning Outcome	Theory	Practical	Total Duration (25 Periods)
1. Demonstrate the knowledge of bio- medical	1. Define bio- medical waste 2. Enlist the risks involved in	1. Waste according to their category	

Unit 5: Bio Medical Waste Management			
Learning Outcome	Theory	Practical	Total Duration (25 Periods)
waste management	<p>poor waste management in hospital</p> <ol style="list-style-type: none"> Importance of hospital waste management with respect to hospital staff and general public Explain how bio-medical waste management helps in environment protection Enlist the routes of transmission of infection in hospitals 	<ol style="list-style-type: none"> Demonstrate the knowledge of the need of bio- medical waste management Routes of transmission of infection in hospitals 	05
2. Demonstrate the knowledge of the sources and disposal methods of bio-medical waste	<ol style="list-style-type: none"> Enlist the sources of bio-medical waste Bio medical waste generation in hospital Method of disposing off of micro biological and bio technological waste in hospitals 	<ol style="list-style-type: none"> Various sources of bio-medical waste in hospitals Disposal techniques of different bio-medical waste 	06
3. Demonstrate the knowledge of segregation, packaging, transportation and storage of bio-medical waste	<ol style="list-style-type: none"> Autoclaving and shredding Transportation process of bio- medical waste Treatment of general waste and bio- medical waste in hospital Importance of color coding criteria recommended by WHO 	<ol style="list-style-type: none"> Appropriate color coding for bio-medical waste Different methods of treatment of bio-medical waste Transportation of bio-medical waste Bio- medical waste according to category, container to be used for disposal and class of bio-medical waste 	08
4. Identify the role of personnel involved in waste management	<ol style="list-style-type: none"> Functions of hospital waste management committee Duties of medical superintendent regarding bio- medical waste management Duties of matron in bio – medical waste management Importance of training on hospital waste management to different categories of staff in a hospital 	<ol style="list-style-type: none"> Role of various personnel in bio-medical waste management in hospital Role and functions of HHA in bio- medical waste management Importance of providing training to all categories of staff of the hospital 	06
Total			25

4. ORGANISATION OF FIELD VISITS

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

Visit a Hospital and observe various activities of the nurses on daily schedule basis. Also observe the following activities at Hospital. The students may be taken for a visit to a centre where following facilities are available:

1. X – ray machine – 300 mA
2. Processing tanks Auto/Manual
3. Ultra sound (optional)/ MRI (optional)
4. Personal radiation monitoring service from BARC
5. Tele Therapy unit (Cobalt 60)

5. LIST OF EQUIPMENT AND MATERIALS

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

Physics Equipments

1. Batter eliminator 5 Amp.
2. A meter 0-3 and 0-5 Amp. (DC & AC)
3. Volt meter 0-5, 0-15 & 0-400 Volts (DC & AC)
4. Standard resistance 5, 10, 15 & 20 Ohms in various ranges
5. Tangent Galvanometer
6. Circular coil
7. Diode valve - 3
8. Rectified voltage supply with different tapping 0-450 Volts
9. Choke coils
10. Condensers of various capacities
11. Step down transformer with various tapping 0-25 Volts
12. Various transformer (Auto Transformer)
13. Transistors used as rectifiers

Equipments for Radiation Physics Practical

1. Secondary standard Dosimeter
2. X-Ray dosimeter
3. Survey meter
4. Copper sheets 25, 0.5 1 mm thick (size 1'CX1')
5. Perpex sheets 1 cm, and 5 cm about
6. Intensifying screen of 3 sizes 15"X12", 10"X12" and 10"X8"
7. Aluminum sheets 1 mm thick (size 3'X3')
8. Film hangers various types of above 3 sizes

Dark Room Equipments

1. Plastic buckets
2. Glass rods
3. Glass beakers

Dark Room Chemicals

1. Developers
2. Fixer

6. VOCATIONAL TEACHER'S/ TRAINER'S QUALIFICATION

The suggestive qualifications and minimum competencies for the vocational teacher should be as follows:

S. No.	Qualification	Minimum Competencies	Age Limit
1.	Post-graduation in Radiation Physics/B.Sc (Radiography) with 01 year experience/ Senior Radiographer with 10 year work experience M.B.B.S graduate for core subjects	<ul style="list-style-type: none">• Effective communication skills (oral and written)• Basic computing skills.• Technical competencies (e.g., Should be able to perform and train the patient related skills	18-37 years (as on Jan. 01 (<u>year</u>)) Age relaxation to be provided as per Govt. rules.

LEARNING OUTCOME BASED VOCATIONAL CURRIC ULUM

**JOB ROLE: Floriculturist (Protected) / Entrepreneur
(QUALIFICATION PACK: Ref. Id.AGR/Q0702)**

SECTOR: Horticulture (816)

Class - XI (2018-19)

1. COURSE OVERVIEW

COURSE TITLE: Agriculture – Floriculturist (Protected Cultivation)

A Floriculturist (Protected Cultivation) is a person who has undertaken the various activities of flower cultivation involving preparatory cultivation, cultivation and post harvest management in green house. He also performs maintenance and care of plants, design and maintenance of green house, preparing media and various other inputs essential for flower crop cultivation. The job is to be performed in an efficient manner to allow the production of high quality flowers, their harvesting and post harvest management towards getting a higher return.

COURSE OUTCOMES: 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 a computer; Demonstrate self-management skills; Demonstrate the ability to provide a self-analysis in context of entrepreneurial skills & abilities; Demonstrate the knowledge of the importance of green skills in meeting the challenges of sustainable development and environment protection; Communicate effectively with the client identify the principal components of a computer system Identify different types of protected structure Prepare media for protected cultivation Demonstrate irrigation and fertigation Demonstrate green house operations Demonstrate irrigation and fertigation Demonstrate care and maintenance of protected structure Identify and categorize crops for protected cultivation

Demonstrate special horticultural practices in protected cultivation Identify and control of insect-pest and diseases demonstrate the harvest and post harvest practices Administer first aid to a casualty with small cuts, grazes, bruises, external bleeding, minor burns and scalds

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

COURSE LEVEL: On completion of this course, a student can take up B. Voc. Degree programme in university/ college for course in Horticulture such as floriculture and landscape gardening or green house technology.

COURSE DURATION: 265 PERIODS
CLASS XI:265 PERIODS

2. SCHEME OF UNITS

This course is a planned sequence of instructions consisting of Units meant for developing employability and vocational competencies of students of Class XI opting for vocational subject along with general education subjects. The unit-wise distribution of hours and marks for Class XI is as follows:
The unit-wise distribution of hours and marks for Class XI is as follows:

CLASS XI			
Units		No. of Periods for Theory and Practical 265	Max. Marks for Theory and Practical 100
Part A	Employability Skills		
	Unit 1: Communication Skills –III	20	10
	Unit 2: Self-management Skills –III	15	
	Unit 3: Information and Communication Technology Skills – III	10	
	Unit 4: Entrepreneurial Skills – III	25	
	Unit 5: Green Skills – III	10	
		80	10
Part B	Vocational Skills		
	Unit 1: Importance of Horticultural crops & Principal of Horticultural crop production technology.		50
	Unit 2: Importance and scope of Floriculture and Landscaping: Present status and future prospects.		
	Unit 3: History of gardening in India.		
	Unit 4: Types and styles of gardens.		
	Unit 5: Principle and elements of landscaping.		
	Unit 6: Important annual and perennial flower crops.		
	Unit 7: Principles and methods of propagation of ornamental crops.		
	Unit 8: Commercial seed production in Flower Crops.		
	Unit 9: Essential plant nutrients, their deficiency symptoms, toxicities, organic and inorganic manures and fertilizers for floricultural crops.		
	Unit 10: Application of biotechnology in flower crops.		
	Unit 11: Protected cultivation of commercial flower crops.		
	Unit 12: Concept of xeric scraping, water scraping, interior scraping, roof gardening, terrace gardening and vertical gardens.		
	Unit 13: Pest and disease management in flower crops.		
	Unit 14: Post Harvest management of Flower crops.		
	Unit 15: Value addition in flowers crops.		
	Total	165	50
Part C	Practical Work		
	Practical Examination	06	15

	Written Test	01	10
	Viva Voce	03	05
		10	30
Part D	Project Work/Field Visit		
	Practical File/ Student Portfolio	10	10
		10	10
	Total	265	100

3. UNIT CONTENTS

CLASS XI

Part A: Employability Skills (Ref. Page No. – 5)

Part B: Vocational Skills

1. Importance of Horticultural crops & Principal of Horticultural crop production technology.
2. Importance and scope of Floriculture and Landscaping: Present status and future prospects.
3. History of gardening in India.
4. Types and styles of gardens.
5. Principle and elements of landscaping.
6. Important annual and perennial flower crops.
7. Principles and methods of propagation of ornamental crops.
8. Commercial seed production in Flower Crops.
9. Essential plant nutrients, their deficiency symptoms, toxicities, organic and inorganic manures and fertilizers for floricultural crops.
10. Application of biotechnology in flower crops.
11. Protected cultivation of commercial flower crops.
12. Concept of xeriscraping, water scraping, interior scraping, roof gardening, terrace gardening and vertical gardens.
13. Pest and disease management in flower crops.
14. Post Harvest management of Flower crops.
15. Value addition in flowers crops.

PRACTICAL

Marks: 40

1. Visit to a Garden / orchard farm.
2. Identification of ornamental trees, shrubs, climbers and bulbous plants.
3. Preparation of herbarium of different ornamentals.
4. Laying out nursery for different seasonal flower crops.
5. Land preparation for flower crops directly raised through seeds.
6. Preparation of nursery beds and field preparation for planting flower seedlings.
7. Identification of propagules like seeds, bulbs, tubers, rhizomes, etc.
8. Preparation of different type of cuttings for the propagation of carnation, chrysanthemum, bougainvillea etc.
9. Identification of manures and fertilizers and calculation of these as per recommended dose for the flower crops to be planted.
10. Identification of deficiency symptoms of nutrients in flower crops.
11. Identification of common tools and equipment used for cultivating flower crops.
12. Use of different irrigation methods in flower crops.
13. Controlling weeds in gardens through manual and chemical methods.
14. Identification and applying different kinds of mulches in the gardens.
15. Seed production of flower crops like marigold, pansy, petunia, antirrhinum etc.
16. Visit to local flower market.
17. Identification of important insect, mites, nematodes and other diseases (viral, bacterial and fungal).

18. Preparation of pesticide solution and their safe application.

4. 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 Playhouse/Green house and observe the following: Location, Site , area, types of green house, infrastructure, equipments used, Office building, Store, Pot yard, Packing Yard, Seed bed, Nursery bed, Water tank/Tube well, Gate and fencing. During the visit, students should obtain the following information from the owner or the supervisor of the nursery:

1. Area under poly house and its layout
2. Types of plants raised
3. Type of rootstock used
4. Methods of propagation adopted
5. Whether plants raised by micro propagation
6. Number of plants grow annually
7. Number of plants/flowers sold annually
8. Sale procedure
9. Manpower engaged
10. Total expenditure in construction of greenhouse
11. Irrigation unit
12. Fustigation unit
13. Total annual income
14. Profit/Loss (Annual)
15. Any other information

5. LIST OF EQUIPMENT AND MATERIALS

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

- | | |
|-------------------------|----------------------|
| 1. Tape | 14. Pruning knife |
| 2. Crow bar | 15. Super cut |
| 3. Rope | 16. Thinning scissor |
| 4. Khurpi | 17. Hand cultivator |
| 5. Wheel hoe | 18. Hand weedier |
| 6. Trenching hoe | 19. Weeding fork |
| 7. Transplanting travel | 20. Garden hoe |
| 8. Dibbler | 21. Shovel |
| 9. Planting board | 22. Digging fork |
| 10. Secateurs | 23. Garden rake |
| 11. Garden hatchet | 24. Spade |
| 12. Water can | 25. Small Trowel |
| 13. Sprinkler | 26. Rake |

- | | |
|--|--|
| 16. Sprayer | 37. Drip and sprinkler |
| 17. Duster | 38. Mobile benches |
| 18. Temperature & humidity control system | 39. Fan |
| 19. Automatic shade system | 40. Pad |
| 20. Fogging and blackout | 41. Ventilator |
| 21. Irrigation system | 42. Thermometer |
| 22. Mobile benches, | 43. Lux meter/Light meter |
| 23. Fan | 44. Misting |
| 24. Pad | 45. Digital electronic temperature indicator |
| 25. Ventilator | 46. Radiation measuring instrument |
| 26. Thermometer | 47. Sprayer |
| 27. Lux meter/Light meter | 48. Hygrometer |
| 16. Misting | |
| 29. Digital electronic temperature indicator | (ii)List of Chemicals |
| 30. Radiation measuring instrument | 49. Dry and liquid fertilizer |
| 31. Sprayer | 50. Peat |
| 32. Hygrometer. | 51. Formalin |
| 33. Temperature & humidity control system | 52. Bavestin |
| 34. Automatic shade system | 53. Sulphur |
| 35. Fogging and blackout | 54. Insecticide |
| 36. Irrigation system | 55. Indofil-45 |
| | 56. Neem cake |
| | 57. Plant Growth regulator/hormones |

6. VOCATIONAL TEACHER'S/ TRAINER'S QUALIFICATION

The suggestive qualifications and minimum competencies for the vocational teacher should be as follows:

S. No.	Qualification	Minimum Competencies	Age Limit
1.	Post-graduation in Horticulture from a recognized Institute/University, with at least 1 year work 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

TYPOGRAPHY & COMPUTER APPLICATION (817)

Job Role: (Executive Assistant.)

SCHEME OF UNITS

This course is a planned sequence of instructions consisting of Units meant for developing employability and vocational competencies of students of Class XI opting for vocational subject along with general education subjects.

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

CLASS XI (2018-19)

	Units	No. of Periods for Theory and Practical 260	Max. Marks for Theory and Practical100
Part A	Employability Skills		
	Unit 1: Communication Skills-III	20	10
	Unit 2: Self-Management Skills-III	15	
	Unit 3: Information and Communication Technology Skills-III	10	
	Unit 4: Entrepreneurial Skills-III	25	
	Unit 5: Green Skills-III	10	
	Total	80	
Part B	Vocational Skills		
	Unit 1: Typography		50
	Unit 2: Keyboard Operations		
	Unit 3: Part-II Computer Applications		
	Unit 4: Windows Operating System		
	Unit 5: Introduction To Office		
	Unit 6: MS Word		
	Total	160	50
Part C	Practical Work		
	Practical Examination	06	15
	Written Test	01	10
	Viva Voce	03	05
	Total	10	30
Part D	Project Work/field Visit		
	Practical File/Student Portfolio	10	10
	Total	10	10
	Grand Total	260	100

**CLASS–XI
ELECTIVE
TYPOGRAPHY & COMPUTER APPLICATION (ENGLISH) (817)
(Common for Office Secretary Ship and Stenography & Computer Application)**

Part A: Employability Skills (REF. PAGE NO. 5)

Part B: Vocational Skills

THEORY

Unit No.	CONTENTS	UNIT WISE MARKS
UNIT – 1	<p style="text-align: center;">Part-1 Typography</p> <p style="text-align: center;">INTRODUCTION TO TYPOGRAPHY</p> <p style="text-align: center;">1.1 The Typewriter 1.2 Origin & Devt. of Typewriter 1.3 Importance of Typewriter/Computer 1.4 Categories of Typewriters 1.5 Computers 1.6 Laptops</p>	
UNIT – 2	<p style="text-align: center;">KEYBOARD OPERATIONS</p> <p style="text-align: center;">2.1 Keyboard 2.2 Sitting Posture 2.3 Methods of Keyboard Operation 2.4 Learning Home Row 2.5 Learning Upper Row 2.6 Learning Bottom Row 2.7 Learning Number Row 2.8 Learning Special Signs and Symbols</p>	
UNIT – 3	<p style="text-align: center;">PART-II COMPUTER APPLICATIONS</p> <p style="text-align: center;">UNIT-3COMPUTER HARDWARE</p> <p style="text-align: center;">3.1 Storage Devices 3.2 Input Devices 3.3 Output Devices</p>	

	3.4	Ports	
UNIT – 4	WINDOWS OPERATING SYSTEM		
	4.1	Logging On	
	4.2	Switching between Accounts	
	4.3	Features of the Windows System	
	4.4	Opening & Closing Application	
	4.5	Manipulating Windows	
	4.6	Using Computer Folder	
	4.7	Control Panel	
	4.8	Locating Files and Folders	
	4.9	Creating a folder	
	4.10	Deleting a file or folder	
	4.11	Renaming a file or folder	
UNIT – 5	INTRODUCTION TO OFFICE		
	5.1	Introduction to Word	
	5.2	Introduction to Excel	
	5.3	Introduction to Power Point	
	5.4	Introduction to Outlook	
	5.5	Working with the Office Assistant	
	5.6	Office Short Cut Bar	
	5.7	The Web Toolbar	
UNIT – 6	MS WORD		
	6.1	Processing With Word	
	6.2	Formatting with word	
	6.3	Line & Paragraph Spacing	
	6.4	Paragraph spacing	
	6.5	Rulers Bar	
	6.6	Working with shapes and styles	
	6.7	Printing	
	6.8	Hyperlink	
	6.9	Clip Art	
	6.10	Using template	
	6.11	Working with text boxes	
	6.12	To move a text box	
	6.13	To Move shapes, using promote or demote commands	
	6.14	To Change colour scheme	
	6.15	Managing Documents and customizing word	
	6.16	Mail Merge	

PRACTICAL

Unit No.	Content	Unit Wise Marks
Unit - 1	<p>Key Board Operations Accuracy key boarding skills for typing a paragraph using typing tutor software minimum benchmark accurate typing speed of 20 words per minute.</p>	
Unit – 2	<p>MS Word</p> <ul style="list-style-type: none"> • Creating, formatting and page setting a document keeping the following areas in mind. • Folder Creation. • Font – size, type, style. • Alignment – left, right, centre, justify. • Page setting – Left Margin, Right Margin, Top Margin, Bottom Margin. • Spell check & corrections. • Saving in the newly created folder. • Printing the document. • Finding and replacing words. • Saving the changed / modified document in the folder. • Reprinting the changed document. 	
Unit – 3	<p>Practical File Should contain at least 20 printouts of documents typed over the year verified by the Teacher / instructor concerned to be shown at the time of final practical examination.</p>	
Unit – 4	<p>Viva</p>	

GEOSPATIAL TECHNOLOGY (818)

Job Roles: - (GIS Operator)

Introduction

The term Geospatial technology is an umbrella phrase associated with a range of various technologies which include remote sensing, Global Positioning System (GPS), Geographic Information System (GIS), information technologies, and field sensors, that are intended to facilitate the process of capturing/storing/processing/displaying/disseminating information tied to a particular location.

This present course curriculum offers an opportunity for the students to understand the basics of geospatial technology for developing an interest in the principles, practical uses, and resources related to geospatial technologies. With the exponential growth of Indian geospatial market, this initiative is intended to develop the pool of manpower trained in this particular subject. This course will enable the students to get an insight into the diverse geospatial database concepts, creating and implementing of the same, GIS theory and spatial analysis, supplemented by extensive practical exercises. Also, it will help the students to acquire skills for further studies and to enter into the world as professionals.

SCHEME OF UNITS

This course is a planned sequence of instructions consisting of Units meant for developing employability and vocational competencies of students of Class XI opting for vocational subject along with general education subjects. The unit-wise distribution of hours and marks for Class XI is as follows:

CLASS XI			
	Units	No. of Periods for Theory and Practical 260	Max. Marks for Theory and Practical 100
Part A	Employability Skills		
	Unit 1: Communication Skills – III	20	10
	Unit 2: Self-management Skills – III	15	
	Unit 3: Information and Communication Technology Skills – III	10	
	Unit 4: Entrepreneurial Skills – III	25	
	Unit 5: Green Skills – III	10	
	Total	80	
Part B	Vocational Skills		
	Unit 1: Geospatial Overview	30	50
	Unit 2: Mapping & Cartography	35	
	Unit 3: Remote Sensing	35	
	Unit 4: Geographical Information System (GIS)	35	
	Unit 5: Ground Positioning System (GPS)	30	
	Total	165	
Part C	Practical Work		
	Practical Examination	06	15

	Written Test	01	10
	Viva Voce	03	05
	Total	10	30
Part D	Project Work/Field Visit		
	Practical File/Student Portfolio	10	10
	Total	10	10
	Grand Total	265	100

Part A – Employability Skills (Ref. Page No. 5)

Part B – Vocational Skills

Chapter–1: Geospatial Overview

5

1. Introduction to Geospatial Technology.
2. Why to study Geospatial Technology.
3. Importance of Geospatial Technology.

Chapter–2: Mapping & Cartography

10

- What is Map & its Importance.
- Map Scale and Types.
- Elements of Map and Indexing.
- Map Coordinate System.
- Interpretation of Satellite Images.

Chapter–3: Remote Sensing

15

- Overview on Remote Sensing Technology.
- Fundamentals of Remote Sensing.
- Physics of Electro Magnetic Energy.
- Remote Sensing Platforms, Sensors and Data Products.
- Remote Sensing Applications.
- Indian Remote Sensing Systems.

Chapter–4: Geographical Information System (GIS)

15

- Fundamentals of GIS.
- Components of GIS.
- GIS Acquisition of GIS.
- Data Types of GIS.
- Application of GIS.

Chapter–5: Ground Positioning System (GPS)

5

- Overview of GPS.
- Functions of GPS.
- Segments of GPS.

- Accuracy of GPS.
- Applications of GPS.

PRACTICAL

Marks: 40

Exercise No. 1:

5

1. To map School building and surrounding environment.

Exercise No. 2:

5

- To display the various types of the matic geological, political. Meteorological and cadastral maps subject to availability.
- To read the maps and identify Map features.
- To learn usage of Maps.

Exercise No. 3:

10

- To display two different scales of Toposheets of same area.
- To read Toposheet index and identify the adjacent Toposheets.
- To understand the small and large scale concepts.
- To compare the same area coverage by two different scaled Toposheets.
- To identify the different types of point's line and polygon features.
- To identify the map elements.
- To know the four coordinates of Topo heets.
- To learn find out the location of any point.

Exercise No. 4:

10

- To display the satellite imagery and Toposheet of same area.
- To identify the same features from Topo sheet and Satellite image.
- Compare the identified features with toposheets and satellite image.

Exercise No. 5:

5

- To understand the GIS environment for example open file, Display images and operate various functions such as zoon in, Zoom out, open attribute table and reading them overlay etc.

Exercise No. 6:

5

- To Understand the GPS data collection and map them.
- Prepare table of coordinates and elevation of all points collected.
- Compare the results on Google map.

ELECTRICAL TECHNOLOGY (819)

Job Roles :- (Field Technician – Other Home)

Introduction

After successfully completing the two years of Senior Secondary Vocational Course the student would have acquired relevant appropriate and adequate technical knowledge together with professional skills and competencies in the field of Electrical Technology so that he/she is properly equipped to take up gainful employment in this vocation.

Thus he/she should have acquired:

A. Understanding of

- (a) The relevant basic concepts and principles in basic science subjects (Physics, Chemistry and Mathematics) so that he/she is able to understand the different vocational subjects.
- (b) The basic concepts in engineering drawing.
- (c) The concepts, principles of working, maintenance, constructional details and functions of electrical motors, electrical appliances, measuring and testing instruments and electrical circuits.
- (d) Testing, installation, fault identification and repairing of electrical motors, appliances and instruments.
- (e) Different types of electrical wiring.

B. Adequate Professional Skills and Competencies in

- (a) Testing, installation, commissioning, fault location, repairing, servicing and major repairs of electrical motors, appliances and instruments.
- (b) Undertaking complete house wiring jobs, testing, and location of faults and repairing of house wiring.

C. A Healthy and Professional Attitude so that He / She has

- (a) An analytical approach while working on a job.
- (b) An open mind while locating/rectifying faults.
- (c) Respect for working with his/her own hands.
- (d) Respect for honesty, punctuality and truthfulness.

SCHEME OF UNITS

This course is a planned sequence of instructions consisting of Units meant for developing Employability and vocational competencies of students of Class XI opting for vocational subject along with general education subjects. The unit-wise distribution of hours and marks for Class XI is as follows:

CLASS XI			
	Units	No. of Periods for Theory and Practical 260	Max. Marks for Theory and Practical 100
Part A	Employability Skills		
	Unit 1: Communication Skills – III	20	10
	Unit 2: Self-management Skills – III	15	
	Unit 3: Information and Communication Technology Skills – III	10	
	Unit 4: Entrepreneurial Skills – III	25	
	Unit 5: Green Skills – III	10	
	Total	80	10
Part B	Vocational Skills		
	Unit 1: Current Electricity		50
	Unit 2: D.C. Circuits		
	Unit 3: Electric Cells		
	Unit 4: Heating and Lighting Effects of Current		
	Unit 5: Capacitors		
	Unit 6: Electromagnetic Effects		
	Unit 7: A.C Circuits		
	Unit 8: Soldering and Brazing		
	Unit 9: Measuring Instruments		
	Unit 10: Electrical Engineering Drawing		
	Unit 11: Electrical wiring		
	Total	165	50
Part C	Practical Work		
	Practical Examination	06	15
	Written Test	01	10
	Viva Voce	03	05
	Total	10	30
Part D	Project Work/Field Visit		
	Practical File/Student Portfolio	10	10
	Total	10	10
	Grand Total	265	100

LASS–XI
ELECTIVE
ELECTRICAL TECHNOLOGY
THEORY

Part A – Employability Skills (Ref. Page No. 5)

Part B – Vocational Skills

Marks: 50

1. Current Electricity

Electricity as a source of energy, Definition of Resistance, Voltage, Current, Power, Energy and their units, Relation between electrical, mechanical and thermal units, Factors affecting resistance of a conductor, Temperature co-efficient of resistance, Difference between AC and DC voltage and current.

2. D.C. Circuits

Ohm's Law, Series – parallel resistance circuits, calculation of equivalent resistance, Kirchhoff's Laws and their applications.

3. Electric Cells

Primary cell, wet cell, dry cell, battery, series and parallel connections of cells, Secondary cells, Lead Acid Cell, Discharging and recharging of cells, common charging methods, preparation of electrolyte, care and maintenance of secondary cells.

4. Heating and Lighting Effects of Current

Joule's Law of electric heating and its domestic applications, heating efficiency, lighting effect of electric current, filaments used in lamps, and gaseous discharge lamps, their working and applications.

5. Capacitors

Capacitor and its capacity, Concept of charging and Discharging of capacitors, Types of Capacitors and their use in circuits, Series and parallel connection of capacitors, Energy stored in a capacitor.

6. Electromagnetic Effects

Permanent magnets and Electromagnets, their construction and use, Polarities of an electromagnet and rules for finding them.

Faraday's Laws of Electromagnetic Induction, Dynamically induced e.m.f., its magnitude and induction, Static induction, self-induced e.m.f., its magnitude and direction, inductance and its unit. Mutually induced e.m.f., its magnitude and direction, Energy stored in an inductance.

Force acting on a current carrying conductor in magnetic field, its magnitude and direction, Torque produced on a current carrying coil in a magnetic field, Principles and construction of dynamo.

7. A.C Circuits

Generation of A.C. voltage, its generation and wave shape. Cycle, frequency, peak value (maximum value), average value, instantaneous value, R.M.S. value, form factor, crest factor, phase, phase difference, power and power factor, A.C. Series Circuits with (i) resistance and inductance (ii) resistance and capacitance and (iii) resistance inductance and capacitance, Q factor of R.L.C. series circuits.

8. Soldering and Brazing

General characteristics of soldering, brazing joints, processes and their characteristics, brief description of soldering and brazing tools equipment, types of solders and fluxes and their uses, soldering defects and their remedies, brazing materials, advantages and disadvantages of soldering and brazing.

9. Measuring Instruments

Construction and working principles of moving iron and moving coil voltmeters and ammeters, dynamometer type wattmeter, ohm meter, megger and induction type energy meter- their circuit connection and application for measurement of electrical quantities.

10. Electrical Engineering Drawing

Schematic and wiring diagram for domestic simple wiring, symbols used for different electrical devices and equipments.

11. Electrical wiring

Types of wiring – cleat wiring, casing and capping, C.T.S./T.R.S. wiring, metal sheath wiring, conduit wiring and concealed wiring – their procedure.

Factors of selection of a particular wiring system, importance of switch, fuse and earthing of wiring system, types of faults, their causes and remedies.

Types of ear thing- plate ear thing and Pipe ear thing, their procedure and application.

Methods of finding numbers of circuits and circuit distribution by distribution board system, loop in system of wiring connections IE rules related to wiring.

PRACTICAL

Marks: 40

1. Verify that resistance of conductor is directly proportional to resistivity and length and inversely proportional to cross-sectional area of the conductor.
2. Verification of Ohm's Law.
3. Verification of temperature coefficient of resistance:
 - (i) Positive for Tungsten and Ni chrome and
 - (ii) Negative for carbon.
4. Study of series resistive circuits.
5. Study of parallel resistive circuits.
6. Study of series and parallel connection of cells in circuits.
7. Preparation of Electrolyte for lead acid battery and its charging and measurement of Specific gravity with the help of hydrometer.
8. To find heat efficiency of an electric kettle.
9. Charging and Discharging of a capacitor.
10. Verification of magnetic field of a Solenoid with .
 - (i) Iron core and
 - (ii) Air core.
11. Verification of Faraday's Laws of electromagnetic induction.
12. Verification of Torque development in a current carrying coil in magnetic field.
13. Study of R.L. series circuit and measurement of power and power factor.
14. Study of R.C. series circuit and measurement of power and power factor.

15. Study of R.L.C. series circuit and measurement of power and power factor.
16. Study of R.L.C. series circuit for calculation of inductive reactance, capacitive reactance, impedance and Q- Factor.
17. Measurement of resistance by ammeter and voltmeter method and Ohm meter.
18. Dismantling and reassembly of dynamo.
19. Calibration of ammeter, voltmeter and wattmeter with the help of standard meters.
20. Calibration of single phase energy meter with the help of standard wattmeter and stop watch.
21. Controlling lamps in series, parallel and series parallel.
22. Controlling lamps for two or three places.
23. Drawing schematic diagram to give supply to consumers.
24. Practice on casing and capping wiring.
25. Practice on cleat wiring.
26. Practice on CTS/TRS wiring.
27. Practice on metal sheet weather proof rigid PVC wiring.
28. Practice on conduit wiring.
29. Practice on concealed wiring.
30. Measurement of insulation resistance of wiring installation by megger.
31. Polarity test of wiring installation.
32. Testing of wiring installation.
33. Installation of pipe ear thing for wiring installation.
34. Installation of plate ear thing for wiring installation

PRACTICAL GUIDELINES

Parameters	Marks
Project / Practical Activities.	15
Viva Based on Project.	10
Practical File / Report or Portfolio.	05
Demonstration of skill Competency in Lab Activities.	10
Total	40

BIS regulations, recommendations and NE pertaining to wiring installation IE regulation related to Earthing.

ELECTRONICS TECHNOLOGY (820)

Job Roles: - (Installation Technician)

Course Objectives

After successfully completing the two year of senior secondary vocational course, the student would have acquired relevant appropriate and adequate technical knowledge together with the professional skills and competencies in the field of Electronics so that he/she is properly equipped to take up gainful employment in this Vocational.

Thu she should have acquired

A. Understanding of

- (a) There Levant basic concepts and principles in basic science subjects (Physics, Chemistry and Mathematics) so that he/she is able to understand the different vocational subjects.
- (b) The basic concepts in engineering drawing.
- (c) The concepts, principles of working of basic electronic devices and circuits.
- (d) The knowledge of testing procedure of components and circuits by making use of different test instruments.
- (e) The procedure of making P.C.B.
- (f) The concepts and principles used in Radio/Audio/Video Systems and Communication devices and its maintenance.

B. Adequate Professional Skills and Competencies in

- (a) Testing different electronic components.
- (b) Testing the performance of electronic circuits.
- (c) Locating the fault at component level and at the stage level.

C. A Healthy and Professional Attitude so that He/ She as

- (a) An analytical approach while working on a job.
- (b) An open mind while locating/rectifying faults.
- (c) Respect for working with his/her own hands.
- (d) Respect for honesty, punctuality and truthfulness.

SCHEME OF UNITS

This course is a planned sequence of instructions consisting of Units meant for developing employability and vocational competencies of students of Class XI opting for vocational subject along with general education subjects. The unit-wise distribution of hours and marks for Class XI is as follows:

CLASS XI			
	Units	No. of Periods for Theory and Practical 265	Max. Marks for Theory and Practical 100
Part A	Employability Skills		
	Unit 1: Communication Skills – III	20	10
	Unit 2: Self-management Skills – III	15	
	Unit 3: Information and Communication Technology Skills – III	10	
	Unit 4: Entrepreneurial Skills – III	25	
	Unit 5: Green Skills – III	10	
	Total	80	10
Part B	Vocational Skills		
	Unit 1: Overview of Atom, Sub-Atomic Particles and CRO		05
	Unit 2: Voltage and Current		10
	Unit 3: Basics of Semiconductor		15
	Unit 4: Bipolar Junction Transistor		10
	Unit 5: Transistor Amplifier and Applications		10
	Total	165	50
Part C	Practical Work		
	Practical Examination	06	15
	Written Test	01	10
	Viva Voce	03	05
	Total	10	30
Part D	Project Work/Field Visit		
	Practical File/Student Portfolio	10	10
	Total	10	10
	Grand Total	265	100

CLASS–XI
ELECTIVE
ELECTRONIC TECHNOLOGY
THEORY

Part A – Employability Skills (Ref. Page No. 5)

Part B – Vocational Skills

Marks: 50

- | | | |
|-----------|---|-----------|
| 1. | Overview of Atom, Sub-Atomic Particles and CRO | 5 |
| | <ul style="list-style-type: none">• Brief History of Electronics.• Atom and its elements, Bohr Atomic model, Atomic energy level.• Electron, Force, Field intensity, Potential, Energy, current, current density, Ionization potential.• Electric field, Magnetic field, Motion of charged particles in electric and magnetic field.• Overview of CRO, Electronic and Magnetic deflection in CRO, Applications. | |
| 2. | Voltage and Current | 10 |
| | <ul style="list-style-type: none">• Resistance, Ohm's law, V-I Characteristics, Resistors, Capacitors, Inductors.• Voltage and Current sources, Symbols and Graphical representation, Conversion of current and voltage sources.• Overview of AC, DC, Cells and Batteries, Energy and Power. | |
| 3. | Basics of Semiconductor | 15 |
| | <ul style="list-style-type: none">• Semiconductor materials, Energy band structure of Insulators, Metals and Semiconductors, Energy gap, Field and Photo-electric emission.• Intrinsic & Extrinsic semiconductor, N-type and P-type semiconductor, Drift current, Diffusion current and Total current, Mobility of charges, Effects of temperature on Conductivity of semiconductor.• PN junction diode, depletion layer, potential barrier, Forward & Reverse bias, V-I Characteristic, Effects of temperature, Resistance levels, Breakdown in Junction diode, Zener diode, Photo diode, LED, Types and applications of diode.• Diode as a rectifier, Half wave and full wave rectification, Voltage multipliers, Zener diode Regulator.• *Special information – (Introduction to Filters, Clippers, Clampers). | |
| 4. | Bipolar Junction Transistor | 10 |
| | <ul style="list-style-type: none">• Construction and operation of NPN and PNP transistors, Biasing of BJT.• CB, CE and CC configuration, Characteristics and transistor parameters for CB, CE, CC configuration.• Introduction to FET, JFET, MOSFET, CMOS and VMOS, Characteristics of various transistors, Comparison of various transistors. | |
| 5. | Transistor Amplifier and Applications | 10 |
| | <ul style="list-style-type: none">• Introduction, Single and Multi stage amplifiers, General amplifier characteristics, Feedbacks in amplifier.• Introduction to Oscillators, Multi-Vibrators and Signal generator.• *Special information - (Introduction to Thyristors, PNP diode, SCR, LASCR, DIAC, TRIAC). | |

PRACTICAL

Marks: 40

1. Study of current and voltage measurement using Ammeter and Voltmeter.
2. Study of current and voltage measurement using Galvanometer.
3. Study of current, voltage and resistance measurement using of Multi-meter
4. Study of Power and Energy measurement using Wattmeter and Energy meter.
5. Study of working principle of Signal Generator and measurement of amplitude, time period and frequency of signal using Oscilloscope.
6. Study of V-I Characteristic of Diode.
7. Study of V-I Characteristic of Zener Diode. And use of Zener Diode as voltage regulator.
8. Study of Half wave rectifier with and without filter circuit.
9. Study of Full wave rectifier with and without filter circuit.
10. Study CE configuration for NPN and PNP transistors and measurement of voltage and current gain.
11. Study CB configuration for NPN and PNP transistors and measurement of voltage and current gain.
12. Study CC configuration for NPN and PNP transistors and measurement of voltage and current gain.
13. Study of working of single layer PCB manufacturing
14. Study of working of double layer PCB manufacturing.
15. Design of 7 segment display using LED and bread board.

PRACTICAL GUIDELINES

Parameters	Marks
Project / Practical Activities.	10
Viva Based on Project.	10
Practical File / Report or Portfolio.	10
Demonstration of skill Competency in Lab Activities.	10
Total	40

**LEARNING OUTCOME
BASED
VOCATIONAL CURRICULUM**

MEDIA

JOB ROLE: Animator

(QUALIFICATION PACK: Ref Id. MES/Q0701)

SECTOR: Media and Entertainment (821)

Class XI

1. COURSE OVERVIEW

COURSE TITLE: Media and Entertainment - Animator

An Animator is an artist who creates multiple images, which when displayed in rapid sequence give an illusion of movement called animation. An Animator needs to refer to the concept of artwork prepared by animation artists to produce a sequence of 2D or 3D images by producing multiple images called frames, which when sequenced together rapidly create an illusion of movement. The images can be made up of digital or hand-drawn pictures, models or puppets. An Animator has the responsibilities of developing animation as per client requirement and work with editors to composite the various layers of animation.

COURSE OUTCOMES: 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;
- Demonstrate the knowledge of uses and applications of Animation;
- Demonstrate the knowledge of principles of Animation;
- Demonstrate the knowledge of basic compositing;
- Demonstrate the knowledge of various features of 2D Animation;
- Demonstrate the knowledge of the concept of 3D production pipeline;
- Demonstrate the concept of bouncing balls and various other steps of animation; and
- Demonstrate the knowledge of project setting and animation rendering.

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

COURSE LEVEL: This is a beginner level course.

COURSE DURATION: 260 PERIODS
CLASS XI: 260 PERIODS

2. SCHEME OF UNITS AND ASSESSMENT

This course is a planned sequence of instructions consisting of Units meant for developing employability and vocational competencies of students of Class XI opting for vocational subject along with general education subjects. The unit-wise distribution of hours and marks for Class XI is as follows:

CLASS XI			
	Units	No. of Periods for Theory and Practical 260	Max. Marks for Theory and Practical 100
Part A	Employability Skills		
	Unit 1: Communication Skills – III	20	10
	Unit 2: Self-management Skills – III	15	
	Unit 3: Information and Communication Technology Skills – III	10	
	Unit 4: Entrepreneurial Skills – III	25	
	Unit 5: Green Skills – III	10	
	Total	80	10
Part B	Vocational Skills		
	Unit 1: Introduction to Animation	35	50
	Unit 2: Principles of Animation	45	
	Unit 3: Introduction to 2D Animation	45	
	Unit 4: 3D Modeling	35	
	Total	160	50
Part C	Practical Work		
	Practical Examination	06	15
	Written Test	01	10
	Viva Voce	03	05
	Total	10	30
Part D	Project Work/Field Visit		
	Practical File/Student Portfolio	10	10
	Total	10	10
	Grand Total	260	100

3. UNIT CONTENTS

CLASS XI

Part A: Employability Skills (Ref. Page No. 5)

Part B: Vocational Skills

S.No.	Units	Duration (Periods)
1.	Introduction to Animation	40
2.	Principles of Animation	20
3.	Introduction to 2D Animation	50
4.	3D Modeling	50
	Total	160

UNIT 1: INTRODUCTION TO ANIMATION			
Learning Outcome	Theory (15 Periods)	Practical (25 Periods)	Duration (40 Periods)
1. Describe the history of animation	1. History of animation	1. Decide different themes and team up then pick up the topic and display the picture of it in class to have a healthy discussion on animation.	06
2. Identify various traditional methods and modern methods	1. Various traditional methods of Animation (e.g.	1. Develop a skit and give different types of the animation	14

UNIT 1: INTRODUCTION TO ANIMATION

Learning Outcome	Theory (15 Periods)	Practical (25 Periods)	Duration (40 Periods)
of Animation.	flipbook animation, cut-out animation etc.) 2. Methods of Animation - Flipbook Animation, Traditional Animation, Cut-Out Animation, Clay Animation, Stop Motion Animation, Computer Graphics Animation (CG), Clay Animation (Plasticine), Silhouette Animation, Model Animation, Object Animation, Graphic Animation, Brick film and Pixilation		
3. Demonstrate the knowledge of Digital Animation Approaches	1. Full animation 2. Limited animation 3. Live action animation 4. Rot scoping 5. Computer animation 6. Difference between 2D and 3D animation 7. CGI animation	1. Demonstration of Digital animation approaches and develop a pipeline to make an animation film	20
Total			40

UNIT 2: PRINCIPLES OF ANIMATION

Learning Outcome	Theory (10 Periods)	Practical (10 Periods)	Duration (20 Periods)
1. Identify the principles of animation	1. Animation principles: <ul style="list-style-type: none"> • Squash and Stretch • Exaggeration • Anticipation • Ease in and Out • Arcs • Overlapping Action and Follow-through 	1. Demonstration of the twelve basic principles of animation 2. Enlisting the advantages and limitations of different animation techniques 3. Demonstration of the uses of a	10

	<ul style="list-style-type: none"> • Pose to Pose and Straight-Ahead Animation • Reference and Planning • Timing • Staging • Appeal • Personality <p>2. Application of each of the above mentioned principles</p>	combination of these 2,3 or 4 principles to get the necessary feel and action in a shot and scene	
2. Demonstrate the knowledge of production pipeline	<p>1. Steps in animation production pipeline</p> <ol style="list-style-type: none"> a. Pre – production b. Production c. Post - production 	1. Speech competition in class on the topic "Computer Animation".	10
Total			20

UNIT 3: INTRODUCTION TO 2D ANIMATION

Learning Outcome	Theory (20 Periods)	Practical (30 Periods)	Duration (50 Periods)
1. Demonstrate the concept of 2D Animation using Adobe Flash	<p>1. Basics of 2D animation with concept of Adobe Flash</p> <p>2. Concept of 2D animation and pipeline of 2D animation i.e. preproduction, production and post-production</p>	1. Demonstration of the phases pre-production, production and post-production	10
2. Demonstration different types of 2D Animation using Adobe Flash	<p>Types of 2D Animation -</p> <ol style="list-style-type: none"> 1. Cell animation 2. Digital animation 3. Path animation 4. Stop-motion animation 5. Sand animation 6. Cut-out animation 7. Rot scoping 8. Cinema graph 	1. Demonstration of the process of different 2D animation in a pictorial form.	20
3. Demonstrate the basic process and demonstrate application of 2D animation using	<ol style="list-style-type: none"> 1. Work cycle of 2D animation 2. Process of creating a 2D animation using Adobe Flash and 	<ol style="list-style-type: none"> 1. Speech competition on computer animation topic 2. Develop a 2D animation using Adobe 	20

UNIT 3: INTRODUCTION TO 2D ANIMATION

Learning Outcome	Theory (20 Periods)	Practical (30 Periods)	Duration (50 Periods)
Adobe Flash animation	other software's, like syndic creation, etc. 3. Process of cut out animation 4. Tweenings used in Adobe Flash i.e. Shape , Classic and Motion tweening	Flash software.	
Total			50

UNIT 4: 3D MODELLING

Learning Outcome	Theory (20 Periods)	Practical (30 Periods)	Duration (50 Periods)
1. Perform 3D Modeling of a real life surface.	1. Development of a real life surface i.e. Shark using 3D software "Autodesk Maya". Three types of surfaces will be used during modeling to understand the modeling properly they are polygons, nubs and Subdivision surfaces. 2. Texturing, rigging and animation process	1. Collage of animation pipeline 2. Make a model of shark as explained in the unit.	50
Total			50

4. ORGANISATION OF FIELD VISITS

In a year, at least 3 field visits/educational tours should be organized for the students to expose them to the activities in the work place. Visit a Digital Photo-Video Studio and observe the following:

1. Digital still photography
2. 1 point, 2 point, 3 point and 4 point studio lighting and its effect on object/ sub model (male/ female) face
3. Frame composition techniques in outdoor photography
4. Natural (sunlight) lighting outdoor photographs and output review.

5. LIST OF EQUIPMENT AND MATERIALS

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

1. 3-Hole Punched Paper
2. Adobe After Effects
3. Adobe Flash
4. Adobe Photoshop
5. Adobe Premiere Pro
6. Art Gum Eraser
7. Autodesk Maya
8. Brushes
9. Computer System
10. Demonstration Charts
11. Digital Camera
12. Drawing Pencil Sets
13. Drawing sheets
14. Flipbook
15. Internet Connection
16. Marker/Chalk
17. Non-Photo Blue Pencils
18. Paints
19. Printer
20. Scanner

6. VOCATIONAL TEACHER'S/ TRAINER'S QUALIFICATION

The suggestive qualifications and minimum competencies for the vocational teacher should be as follows:

S. No.	Qualification	Minimum Competencies	Age Limit
1.	Graduation in any stream from a recognized Institute / organization with at least 1 year work/teaching experience in relevant field	<ul style="list-style-type: none">• Effective communication skills (oral and written)• Basic computing skills.	18-37 years (as on Jan. 01 (year)) Age relaxation to be provided as per Govt. rules.

TAXATION (822)

Job Roles :- (Asstt. Tax consultant/GST Accounts Asstt.)

Introduction

The course is designed to enable students to develop conceptual, skill and application skill in the commerce related field. The course will familiarize students with current business process and practices. This will help students in developing capabilities to identify business opportunities, analyze their risk- return possibilities and support business development in socially desirable avenues with strong moral commitment.

SCHEME OF UNITS

This course is a planned sequence of instructions consisting of Units meant for developing employability and vocational competencies of students of Class XI opting for vocational subject along with general education subjects. The unit-wise distribution of hours and marks for Class XI is as follows:

CLASS XI			
	Units	No. of Periods for Theory and Practical 265	Max. Marks for Theory and Practical 100
Part A	Employability Skills		
	Unit 1 : Communication Skills-III	20	10
	Unit 2 : Self-management Skills -III	15	
	Unit 3 : Information and Communication Technology Skills-III	10	
	Unit 4 : Entrepreneurial Skills-III	25	
	Unit 5 : Green Skills-III	10	
		80	10
Part B	Vocational Skills		
	Unit 1 :Introduction to Income Tax & important Definitions.	30	50
	Unit 2: Exempted Incomes and Residential Status & Incidence of Tax Liability.	35	

	Unit 3 : Heads of Income	35	
		165	50
Part C	Practical Work		
	Practical Examination	06	15
	Written Test	01	10
	Viva Voce	03	05
		10	30
Part D	Project Work/Field Visit		

	Practical File/Student Portfolio	10	10
		10	10
	Total	265	100

CLASS–XI (2018-19)

Part A – Employability Skills (Ref. No. - 5)

Part B – Vocational Skills

TAXATION THEORY

Marks: 50

Unit-1: Introduction to Income Tax & important Definitions.

Unit-2: Exempted Incomes and Residential Status & Incidence of Tax Liability.

Unit-3: Heads of Income:

- (i) Income from Salary.
- (ii) Income from House Property.
- (iv) Income from Business Profession.
- (v) Income from Other Sources.

PRACTICAL

Marks: 40

1. Computation of Income under different heads.
2. Viva-Voce.

COST ACCOUNTING (823)

Job Roles:- (Jr. Accountant)

Introduction

The course is designed to enable students to develop conceptual, skill and application skill in the commerce related field. The course will familiarize students with current business process and practices. This will help students in developing capabilities to identify business opportunities, analyze their risk- return possibilities and support business development in socially desirable avenues with strong moral commitment.

SCHEME OF UNITS

This course is a planned sequence of instructions consisting of Units meant for developing employability and vocational competencies of students of Class XI opting for vocational subject along with general education subjects. The unit-wise distribution of hours and marks for Class XI is as follows:

CLASS XI (823) 2018-19			
Units		No. of Periods for Theory and Practical 265	Max. Marks for Theory and Practical 100
Part A	Employability Skills		
	Unit 1: Communication Skills –III	20	10
	Unit 2: Self-management Skills –III	15	
	Unit 3: Information and Communication Technology Skills – III	10	
	Unit 4: Entrepreneurial Skills – III	25	
	Unit 5: Green Skills – III	10	
		80	
Part B	Vocational Skills		
	Unit 1: General Principles	30	50
	Unit 2: Direct Materials.	35	
	Unit 3: Direct Labour and Direct Expenses.	35	
	Unit 4: Overheads General - Classification, Distribution and Control.	35	
	Unit 5: Overheads Distribution.	30	
		165	50
Part C	Practical Work		
	Practical Examination	06	15
	Written Test	01	10
	Viva Voce	03	05
		10	30
Part D	Project Work/Field Visit		
	Practical File/ Student Portfolio	10	10

		10	10
	Total	265	100

CLASS–XI (2018-19)

Part A – Employability Skills (Ref. No. - 5)

Part B – Vocational Skills

**COST ACCOUNTING
THEORY**

Marks: 60

1.	General Principles.	12
2.	Direct Materials.	12
3.	Direct Labour and Direct Expenses.	12
4.	Overheads General - Classification, Distribution and Control.	12
5.	Overheads Distribution.	12

1. General Principles 12

- Meaning and Scope of Cost Accounting.
- **Objectives of** Cost Accounting.
- Cost Accounting Versus Financial Accounting.
- Importance of Cost Accounting.
- Objections to Cost Accounting.
- Elements of Cost.
- Components of Total Cost.
- Classification of Costs.
- Installation of a Costing System.
- Methods of Costing.
- Techniques of Costing.
- Systems of Costing.

2. Direct Materials 12

- Materials Control.
- Purchasing of Materials.
- Receiving of Materials.
- Inspection of Materials.
- Storage of Materials.
- Issuing of Materials.
- Maintenance of Inventory Records.
 - (i) Incoming Materials.

(ii) Outgoing Materials.

3. Direct Labour and Direct Expenses

12

- Direct and Indirect Labour.
- Control over Labour Costs.
- Personnel Department.
- Engineering and Works Study Department.
- Time-keeping Department.
- Pay-master's Department.
- Cost Accounting Department.
- Treatment of Holiday Pay, Idle Time, Overtime etc. in Cost Accounts.
- Labour Turnover.
- Direct Expenses.

4. Overheads - Control

12

- Classification of Overheads.
- Comments on Certain Items of
 - (i) Factory Overheads.
 - (ii) Office and Administrative Overheads.
 - (iii) Selling and Distribution Overheads.

5. Overheads - Distribution

12

- Overheads Distribution Stages.
- Distribution of Factory Overheads.
- Distribution of Office and Administration Overheads.
- Actual Versus Pre-determined Overhead Rates.
- Over and Under-absorption of Overheads.

PRACTICAL

Marks: 40

(30 marks for report and 10 marks for viva-voice)

The students will be required to prepare reports for an organization in respect of the following:

- Cost sheet of the firm for a selected period.
- Maintenance of Bin Cards.
- Maintenance of Stores Ledger.
- Treatment of Material Losses.
- Recording Attendance Time.
- Recording Job Time.
- Treatment of Material Losses.
- Classification and Codification of Different Items of Overheads.

OFFICE PROCEDURES & PRACTICES (824)

Job Role : - (Executive Asstt.)

SCHEME OF UNITS

This course is a planned sequence of instructions consisting of Units meant for developing employability and vocational competencies of students of Class XI opting for vocational subject along with general education subjects. The unit-wise distribution of hours and marks for Class XI is as follows:

CLASS XI (824) 2018-19			
Units		No. of Periods for Theory and Practical 265	Max. Marks for Theory and Practical 100
Part A	Employability Skills		
	Unit 1: Communication Skills –III	20	10
	Unit 2: Self-management Skills –III	15	
	Unit 3: Information and Communication Technology Skills – III	10	
	Unit 4: Entrepreneurial Skills – III	25	
	Unit 5: Green Skills – III	10	
		80	
Part B	Vocational Skills		
	Unit 1: INTRODUCTION OF OFFICE, OFFICE MANAGER, ORGANISATIONAL CHARTS AND MANUALS	30	50
	Unit 2: OFFICE – SPACE AND ENVIRONMENT MANAGEMENT	35	
	Unit 3: OFFICE FORMS AND STATIONERY	35	
	Unit 4: COMMUNICATION	35	
	Unit 5: OFFICE MACHINES	30	
	UNIT 6: CORRESPONDENCE – BUSINESS AND GOVERNMENT		
		165	50
Part C	Practical Work		
	Practical Examination	06	15
	Written Test	01	10
	Viva Voce	03	05
		10	30
Part D	Project Work/Field Visit		
	Practical File/ Student Portfolio	10	10
		10	10
	Total	265	100

**CLASS–XI
ELECTIVE
OFFICE PROCEDURES & PRACTICES
(Common for Office Secretary ship and Stenography & Computer Application)**

THEORY

Part A – Employability Skills (Ref. No. - 05)

Part B – Vocational Skills

MM: 50

**UNIT I: INTRODUCTION OF OFFICE, OFFICE MANAGER, ORGANISATIONAL CHARTS AND
MANUALS** **8 MARKS**

- 1.1 Meaning of Office, Functions and Importance
- 1.2 Changing Scene – Paperless Office and Virtual Office
- 1.3 Centralization and Decentralization of office services - advantages and disadvantages
- 1.4 Qualities and Functions of Office Manager
- 1.5 Organizational Chart and Office Manual - advantages and disadvantages

UNIT II OFFICE – SPACE AND ENVIRONMENT MANAGEMENT **8 MARKS**

- 2.1 Office Layout, Open and Private Office - advantages and disadvantages
- 2.2 Front and Back Office
- 2.3 Elements of Office Environment-
 - 2.3.1 Ventilation
 - 2.3.2 Office Lighting – Natural and Artificial Light
 - 2.3.3 Cleanliness
 - 2.3.4 Sanitation
 - 2.3.5 Heating and Air Conditioning,
 - 2.3.6 Noise – Internal and External
 - 2.3.7 Health
 - 2.3.8 Safety – First Aid Box, Fire, Accidents etc.

UNIT III: OFFICE FORMS AND STATIONERY **8 MARKS**

- 3.1 Office Forms
 - 3.1.1 Meaning, importance and advantages of Office forms
 - 3.1.2 Computerization of office forms
 - 3.1.3 Principles of Form Designing
- 3.2 Office Stationery
 - 3.2.1 Methods of purchasing stationery
 - 3.2.2 Purchase Procedure
 - 3.2.3 Storing Stationery
 - 3.2.4 Control on consumption of stationery
- 3.3 Maintenance of Stock Register
- 3.4 Physical verification of Stock

UNIT IV: COMMUNICATION**8 MARKS**

- 4.1 Meaning, Importance and Types of communication
- 4.2 Elements of communication Process
- 4.3 Methods of communication
 - 4.3.1 Verbal (Oral and Written)
 - 4.3.2 Non Verbal
- 4.4 Characteristics of Effective Communication
- 4.5 Barriers to Communication
- 4.6 Telephone Etiquettes

UNIT V : OFFICE MACHINES**8 MARKS**

- 5.1 Meaning, advantages and disadvantages of Mechanisation
- 5.2 Factors in selection of office machines
- 5.3 Kinds of Office Equipment/Machines

UNIT VI: CORRESPONDENCE – BUSINESS AND GOVERNMENT**10 MARKS**

- 1.1 Business Correspondence – meaning, importance and essentials
- 1.2 Parts of Business Letter
- 1.3 Types of Business letters
 - 6.3.1 Enquiry Letter
 - 6.3.2 Quotation Letter
 - 6.3.3 Placing an Order
 - 6.3.4 Execution of Order
 - 6.3.5 Adjustment Letter
- 1.4 Display of a Business Letter
 - 1.4.1 Indented Style
 - 1.4.2 Fully Block Style
 - 1.4.3 Semi Block Style
- 1.5 Writing Job Applications and Resume
- 1.6 Government Correspondence
 - 1.6.1 Official Letter
 - 1.6.2 Demi-Official Letter
 - 1.6.3 Memorandum
 - 1.6.4 Notification
 - 1.6.5 Office Order
 - 1.6.6 Circulars
 - 1.6.7 Endorsement

**CLASS XI
ELECTIVE
OFFICE PROCEDURES AND PRACTICES
PRACTICAL**

MARKS 40

Note: The practical work should be as near as the actual work performed in an Office.

Job 1: INTRODUCTION OF OFFICE, OFFICE MANAGER, ORGANISATIONAL CHARTS AND MANUALS 5

- The students should visit different modern offices (minimum two) in order to understand the concept of an office.
- After the visit, a Project Report indicating different departments of office, functions of office, functions of Office Manager etc. to be prepared by each student.
- The students should create their own E-mail Accounts and send letters to their friends and keep a record of the same in their project files (Minimum five mails).
- The students are required to study different Organizational Charts online and prepare at least one sample of the same.

JOB II: OFFICE- SPACE AND ENVIRONMENT MANAGEMENT 5

- During the visit mentioned above, the students should observe the office layout, environment aspects of the office, physical amenities provided to the staff etc.
- The changing scenario in the office being visited has to be observed by the students and their views presented in the Project Report.

JOB III: OFFICE FORMS AND STATIONERY 5

- The students should practice filling up of different types of forms – offline and online. (At least five different type of forms)
- The students should practice making entries in Bin Cards, Stationery Requisition Slip, Issue of Stationery and Stock Register.

JOB IV: COMMUNICATION 5

- Role Play by the students on different aspects of Non verbal communication.
- Practice of Telephone Handling and observing telephone etiquettes while making calls and receiving Calls.

JOB V: OFFICE MACHINES 5

- The students should practice on different office machines like Photocopier, FAX, Franking Machines, Laptop, Computers etc.

JOB VI: CORRESPONDENCE – BUSINESS AND GOVERNMENT**5**

- The students should practice drafting and typing different types of Business letters like Enquiry, Quotations, Placing an Order, Execution of Order, and Adjustment Letters etc.
- The students should practice preparation of Resume and fill up on-line job application forms. (at least two application forms online)
- The students should gain knowledge of formats of Memorandum, Notification, Endorsement, Circulars, Official and Demi-official letters and also the use of each.

JOB VII: Viva and File Work**10**

Shorthand (English) (825)

Job Role : - (Stenographer)

SCHEME OF UNITS

This course is a planned sequence of instructions consisting of Units meant for developing employability and vocational competencies of students of Class XI opting for vocational subject along with general education subjects. The unit-wise distribution of hours and marks for Class XI is as follows:

CLASS XI (825) 2018-19			
Units		No. of Periods for Theory and Practical 265	Max. Marks for Theory and Practical 100
Part A	Employability Skills		
	Unit 1: Communication Skills –III	20	10
	Unit 2: Self-management Skills –III	15	
	Unit 3: Information and Communication Technology Skills – III	10	
	Unit 4: Entrepreneurial Skills – III	25	
	Unit 5: Green Skills – III	10	
		80	
Part B	Vocational Skills		
	Unit 1: INTRODUCTION TO STENOGRAPHY	30	50
	Unit 2: CONSONANTS AND THEIR JOINING	35	
	Unit 3: VOWELS, DIPHTHONGS AND TRIPHONES, GRAMMALOGUES AND PUNCTUATION SIGNS	35	
	Unit 4: ALTERNATIVE FORMS OF 'R' AND 'H', ABBREVIATED 'W', PHRASEOGRAPHY AND TICK 'THE'	35	
	Unit 5: CIRCLES AND LOOPS	30	
	Unit 6: HOOKS (INITIAL AND FINAL)		
	Unit 7: HALVING PRINCIPLE AND DOUBLING PRINCIPLE		
	Unit 8: COMPOUND CONSONANTS, DOT AND TICK 'H'		
		165	50
Part C	Practical Work		
	Practical Examination	06	15
	Written Test	01	10
	Viva Voce	03	05
		10	30
Part D	Project Work/Field Visit		
	Practical File/ Student Portfolio	10	10
		10	10
	Total	265	100

SHORTHAND

CLASS-XI (2018-19)

Part A – Employability Skills (Ref. Page No. 5)

Part B – Vocational Skills

Unit 1. INTRODUCTION TO STENOGRAPHY 4

- Meaning and Importance
- Techniques of Note Taking
- Sitting Posture
- Essentials of a good stenographer

Unit 2. CONSONANTS AND THEIR JOINING 4

- Meaning of Consonants
- Classification of Consonants
- Length of Strokes
- Pairs of Consonants
- Types of Strokes
- Formation of Consonants
- Joining of Strokes

Unit 3. VOWELS, DIPHTHONGS AND TRIPHONES, GRAMMALOGUES AND PUNCTUATION SIGNS 4

- Meaning
- Places of a Vowels
- Intervening Vowels
- Diphthongs and Triphones
- Grammalogues and Punctuation Signs

Unit 4. ALTERNATIVE FORMS OF 'R' AND 'H', ABBREVIATED 'W', PHRASEOGRAPHY AND TICK 'THE' 6

- Upward and Downward forms of Consonants 'R' and 'H'
- Qualities of a good Phraseogram

Unit 5. CIRCLES AND LOOPS 6

- Small Circle for 'S' and 'Z'
- Use of Circle 'S' in Phraseography
- Short forms/Grammalogues
- Large Circle 'SS', 'SZ' and 'SW'
- Loops

Unit 6.HOOKS (INITIAL AND FINAL)

10

- Hook to straight strokes and curved strokes
- Attachment of circle 'S' with double consonants(Straight Strokes) and curved strokes
- Attachment of Circle in the middle
- The Shun Hook
- Shun following circle 'S' and 'NS'
- Use of Shun Hook in Phraseography

Unit 7.HALVING PRINCIPLE AND DOUBLING PRINCIPLE

10

- Meaning of Halving Principle
- When is the Halving Principle not employed?
- Use of Halving Principle in Phraseography
- Short Forms/Grammalogues
- Meaning of Doubling Principle
- When is the Doubling Principle not employed?
- Use of Doubling Principle in Phraseography
- Short Form

Unit 8.COMPOUND CONSONANTS, DOT AND TICK 'H'

6

- Meaning of Compound Consonants
- Rules for the use of Compound Consonants
- DOT 'HAY'
- Tick 'H' in Phrases

Note: The Curriculum of Shorthand of Class XI & XII is based on Pitman Shorthand. There is minor variation between old Syllabus and new Syllabus. Some of the Chapters which were not included in the old syllabus have been incorporated in the new syllabus. Only the sequence of Chapters has been changed based on Pitman Shorthand.

Examination Scheme

Theory

Theory paper to be set by the School Examiner / Teacher covering the contents given above, of Questions of Short, Medium and Long Answers, for testing the knowledge, understanding and application of mind, acquired during the year as per the Sample Question Paper given in the Book.

Practical

- Practical:** Practical to be performed according to the chapters of English Shorthand Book : Consonants, Joining of Consonants, Vowels, Intervening Vowels, Grammalogues, Phraseography, Tick 'The', Punctuation Marks, Diphthongs & Triphones.
- Practice of Alternative forms 'R', 'H' and Abbreviated 'W'.**
- Practice of words** of Small Circles S/Z, Large Circles SW,SS/SZ, Small Loop–ST, Large Loop – STR.
- Practice of words** of Halving and Doubling Principle, Tick 'H' & Dot 'H'.
- Practice of writing letters** and their transcription on Computer.

Examination Scheme: The School Examiner will conduct Practical Examination in the following manner:

1. A Dictation Passage of 5 minutes on the theory chapters studied by the student during the year up to Tick 'H' & Dot 'H', as per the Sample Question Paper given in the Book.
2. A Dictation of 5 minutes consisting of Grammalogues, Words and Phrases studied during the year as per the sample paper given in the Book.
3. Practical Work File to be maintained and shown to the Examiner for evaluation / awarding marks.

PRACTICAL – INSTRUCTIONS TO EXAMINERS
(Five copies of the Question Paper to be given to each Centre)

Job – I: One Dictation of Unseen Passage of 400 words at the speed of 80 wpm for 5 minutes (Reading & Transcription time: 40 minutes). After completing the 1st Job, collect the Answer sheets.
Job-II: Business Letter to be dictated in 3 minutes. Reading & Transcription time: 20 minutes). The name and addresses should be dictated at low speed. The Body of the letter should be dictated @ 60 words per minute.

Note:

- Examiner should give one or two trial passages of one minute each to the students before start of the practical.
- 10 Minutes time may be given to the Examinees for adjustment of checking of computer before starting the Practical.

कक्षा - 11
वैकल्पिक
आषुलिपि (हिन्दी) (826)

SCHEME OF UNITS

This course is a planned sequence of instructions consisting of Units meant for developing employability and vocational competencies of students of Class XI opting for vocational subject along with general education subjects. The unit-wise distribution of hours and marks for Class XI is as follows:

CLASS XI (825) 2018-19			
Units		No. of Periods for Theory and Practical 265	Max. Marks for Theory and Practical 100
Part A	Employability Skills		
	Unit 1: Communication Skills –III	20	10
	Unit 2: Self-management Skills –III	15	
	Unit 3: Information and Communication Technology Skills – III	10	
	Unit 4: Entrepreneurial Skills – III	25	
	Unit 5: Green Skills – III	10	
		80	
Part B	Vocational Skills		
	यूनिट 1. आषुलिपि का परिचय		50
	यूनिट 2. व्यंजन रेखाएं एवं उनका मिलान		
	यूनिट 3. स्वर		
	यूनिट 4. सकैल एवं लूप		
	यूनिट 5. हुक्स (अकृष)		
	यूनिट 6. वैकल्पिक संकेत—“र-ड़”, “ढ़”, “ल”, “ह” एवं “ष” का प्रयोग		
	यूनिट 7. यौगिक व्यंजन		
	यूनिट 8. स्वर संकेत तथा आवश्यक स्वर		
	यूनिट 9. ह्रासिग (अद्धकरण) एवं डबलिंग (द्विगुणन) के नियम		
	यूनिट 10. नोट लिखना और अनुवाद लिप्यांतरण		
		165	50
Part C	Practical Work		
	Practical Examination	06	15
	Written Test	01	10
	Viva Voce	03	05
		10	30
Part D	Project Work/Field Visit		
	Practical File/ Student Portfolio	10	10
		10	10
	Total	265	100

आषुलिपि (हिन्दी) (826)

(सैद्धांतिक)

भाग (अ) - रोजगार कौशल

भाग (ब) - व्यावसायिक कौशल

पूर्णांक: 50

यूनिट 1. आषुलिपि का परिचय

- 1.1 हिन्दी आषुलिपि का विकास
- 1.2 आषुलिपि का अर्थ
- 1.3 आषुलिपि का महत्व
- 1.4 आषुलिपि लिखते समय आवश्यक लेखन सामग्री, आषुलिपिक के बैठने की स्थिति एवं तकनीक
- 1.5 आषुलिपिक के आवश्यक गुण

यूनिट 2. व्यंजन रेखाएं एवं उनका मिलान

- 2.1 व्यंजन का अर्थ एवं वर्गीकरण
- 2.2 रेखाक्षरों का मिलान

यूनिट 3. स्वर

3.1 स्वर का अर्थ

- 3.1.1 बिन्दु तथा डैष से अंकित किए जाने वाले स्वरों का पृथक-पृथक वर्गीकरण
- 3.1.2 रेखाक्षरों में स्वर ध्वनियों का स्थान
- 3.1.3 व्यंजन "य" एवं "व" की स्वर ध्वनि
- 3.1.4 स्वरों के साथ अनुस्वार आने पर विशेष संकेत लगाना
- 3.1.5 दो व्यंजनों के बीच स्वर संकेत एवं व्यंजनों के लिखने का स्थान

3.2 षब्द चिन्ह, कारक की विभक्ति एवं सर्वनाम

- 3.2.1 षब्द चिन्ह का अर्थ
- 3.2.2 षब्द चिन्हों के अभ्यास की विधि

- 3.3 वाक्यांश
- इ
- 3.4 द्विध्वनिक एवं त्रिध्वनिक स्वर
- 3.5 द्विध्वनिक एवं त्रिध्वनिक मात्राएं
- 3.6 वैकल्पिक संकेत (र-ड़, ढ, ल तथा ह)
- 3.7 संक्षिप्त "व"

यूनिट 4. सर्किल एवं लूप

- 4.1 वृत्त (छोटा और बड़ा)
- 4.2 लूप (छोटा और बड़ा)

यूनिट 5. हुक्स (अंकुष)

- 5.1 प्रारंभिक हुक "र-ड़" एवं "ल" हुक का प्रयोग
- 5.2 अन्तिम हुक "न-ण", "व" और "य" के लिए हुक का प्रयोग
- 5.3 हुक और वृत्त का मेल
- 5.4 "षन हुक" का प्रयोग

यूनिट 6. वैकल्पिक संकेत—"र-ड़", "ढ", "ल", "ह" एवं "ष" का प्रयोग

- 6.1 ऊपर से नीचे व नीचे से ऊपर की ओर लिखे जाने वाली "र-ड़" एवं "ढ" रेखा को लिखने के नियम
- 6.2 ऊपर से नीचे व नीचे से ऊपर की ओर लिखे जाने वाली "ह" रेखा को लिखने के नियम
- 6.3 ऊपर से नीचे व नीचे से ऊपर की ओर लिखे जाने वाली "ल" रेखा को लिखने के नियम
- 6.4 ऊपर और नीचे की ओर लिखी जाने वाली "ष" रेखा के नियम

यूनिट 7. यौगिक व्यंजन

यूनिट 8. स्वर संकेत तथा आवश्यक स्वर

- 8.1 आरम्भिक एवं अन्तिम स्वर की मौजूदगी
- 8.2 आरम्भिक एवं अन्तिम व्यंजन की मौजूदगी
- 8.3 स्वरों का संकेत किन स्थितियों में अवश्य करना चाहिए

यूनिट 9. हार्विंग (अर्द्धकरण) एवं डबलिंग (द्विगुणन) के नियम

9.1 हार्विंग के नियम

- 9.1.1 अर्द्ध रेखाओं का स्थान
- 9.1.2 हार्विंग नियम में अपवाद
- 9.1.3 वाक्यांशों में हार्विंग के नियम का प्रयोग

9.2 डबलिंग के नियम

- 9.2.1 डबल रेखाओं का स्थान
- 9.2.2 डबलिंग नियम में अपवाद
- 9.2.3 वाक्यांशों में डबलिंग के नियम का प्रयोग

यूनिट 10. नोट लिखना और अनुवाद लिप्यांतरण

(सैद्धांतिक)

परीक्षा पद्धति :- थ्योरी परीक्षा बोर्ड द्वारा ली जाएगी जिसके लिए निर्धारित पाठ्यक्रम से प्रश्न पूछे जाएंगे, जो लघु, मध्यम एवं दीर्घ उत्तर वाले होंगे । सैद्धांतिक परीक्षा 60 अकों की होगी ।

प्रैक्टिकल

अंक : 40

व्यावहारिक कार्य आषुलिपि के सैद्धान्तिक पाठों के अनुसार कराया जाएगा ।

1. सुन्दर, सही साइज, सही दिशा में आषुलिपि की नोट बुक पर आषुलेखन कराना पहला लक्ष्य होगा ।
2. इसके बाद स्वरों का प्रयोग, षब्द चिन्ह, कार्य की विभक्ति एवं सर्वनाम, वाक्यांश, द्विध्वनिक एवं त्रिध्वनिक स्वरों का प्रयोग सिखाया जाएगा ।
3. सर्किल एवं लूप आदि का सही ढंग से अभ्यास कराया जाएगा ।
4. प्रारम्भिक एवं अन्तिम हुक, वैकल्पिक संकेत, यौगिक व्यंजन आदि का गहन अभ्यास पाठों के अनुसार कराया जाएगा । हर अभ्यास की डिक्टेसन देकर उनको हर छात्र/छात्रा से पढ़वाने का अभ्यास कराया जाएगा । हर अभ्यास की डिक्टेसन का प्रतिलेखन कम्प्यूटर पर कराया जाएगा ।
5. हार्विंग एवं डबलिंग के नियमों का गहराई से अभ्यास कराया जाएगा । नियमित रूप से पाठों की डिक्टेसन बोलकर उनको पढ़ने व उनके प्रतिलेखन पर अषुद्धियों की गणना की जाएगी । नियमित अभ्यास के इन प्रतिलेखनों की फाईल रखी जाएगी जिनके आधार पर परीक्षक द्वारा अंक प्रदान किए जाएंगे ।

व्यावहारिक परीक्षा :- पढ़ाए गए पाठों के आधार पर व्यावहारिक परीक्षा का प्रश्न पत्र परीक्षक द्वारा तैयार किया जाएगा जिसमें तीन कार्यों की परीक्षाएं होंगी ।

कार्य

1. डिक्टेसन 40 षब्द प्रति मिनट की गति से (कुल षब्द 200) पांच मिनट में दी जाएगी, जिसका लिप्यांतरण कम्प्यूटर पर किया जाएगा ।

2. षब्द चिन्ह एवं वाक्यांश लिखने की एक डिक्टेसन

3. परीक्षार्थी द्वारा कक्षा में किए गए व्यावहारिक कार्य की फाईल रखी जाएगी जिसे परीक्षक द्वारा मूल्यांकन करके अंक प्रदान किए जाएंगे।

AIR CONDITIONING AND REFRIGERATION (827)

Job Role: (Service Technician)

SCHEME OF UNITS

This course is a planned sequence of instructions consisting of Units meant for developing employability and vocational competencies of students of Class XI opting for vocational subject along with general education subjects. The unit-wise distribution of hours and marks for Class XI is as follows:

CLASS XI (2018-19)

	Units	No. of Periods for Theory and Practical 260	Max. Marks for Theory and Practical 100
Part A	Employability Skills		
	Unit 1: Communication Skills-III	20	10
	Unit 2: Self-Management Skills-III	15	
	Unit 3: Information and Communication Technology Skills-III	10	
	Unit 4: Entrepreneurial Skills-III	25	
	Unit 5: Green Skills-III	10	
	Total	80	10
Part B	Vocational Skills		
	Unit 1: Meaning of Air Conditioning and Refrigeration etc.		50
	Unit 2: Vapour Compression Cycle, Working of a Domestic Refrigerators		
	Unit 3: Meaning of Compressors, Compressor construction		
	Unit 4: Meaning of Alternating Current etc. , Wiring circuit diagrams		
	Unit 5: Psychometrics– Composition of air, Human comfort etc.		
	Unit 6: Applications of Air Conditioning, Measurement of air velocity and flow		
	Total	160	50
Part C	Practical Work		
	Practical Examination	06	15
	Written Test	01	10
	Viva Voce	03	05
	Total	10	30
Part D	Project Work/field Visit		
	Practical File/Student Portfolio	10	10
	Total	10	10
	Grand Total	260	100

CLASS XI (2018-19)
AIR CONDITIONING AND REFRIGERATION (827)

Part A - Employability Skills (REF. PAGE NO. - 05)

Part B–Vocational Skills

Course Objectives

After successfully completing the two year of Senior Secondary Vocational Course the student would have acquired relevant appropriate and adequate technical knowledge together with the professional skills and competencies in the field of Air conditioning and Refrigeration Technology so that he/she is properly equipped to take up gainful employment in this vocation.

Thus he should have acquired

A. Understanding of

- (a) The relevant basic concepts and principles in basic science subjects (Physics, Chemistry and Mathematics) so that he/she is able to understand the different vocational subjects.
- (b) The basic concepts in engineering drawing.
- (c) The concepts and principles of working of refrigeration and airconditioning equipment.
- (d) The knowledge of testing, faults, identification and repair procedures in respect of refrigeration and air conditioning equipment.
- (e) The knowledge to prepare estimates for cost of repair/installation/maintenance/ overhauling jobs.

B. Adequate Professional Skills and Competencies in

- (a) Testing, fault location and repairing of refrigeration and air conditioning equipment.
- (b) Installing and commissioning of refrigeration and air conditioning equipment.
- (c) Carrying out preventive maintenance of refrigeration and air conditioning equipment.
- (d) Dismantling, overhauling and reassembling of refrigeration and air conditioning equipment.

C. A healthy and Professional Attitudes of that He/She has

- (a) An analytical approach while working on a refrigeration or air conditioning equipment.
- (b) An open mind while locating/rectifying faults in a refrigeration or air conditioning equipment.
- (c) Respect for working with his/her own hands.
- (d) Respect for honesty, punctuality and truthfulness.

**CLASS–XI
ELECTIVE
AIR CONDITIONING AND REFRIGERATION (827)
THEORY**

Marks: 50

1. Introduction

- Meaning of Air Conditioning and Refrigeration, Brief history of Air Conditioning and Refrigeration general safety, Application of Refrigeration, Concept of System, its boundary, and surroundings, Unit of Refrigeration, use specification of Refrigeration tools Equipment, Instruments. Basic knowledge of heat energy. Comparison of heat engine heat pump and refrigeration machine. Rating of Refrigeration Machines & Co-efficient of performance. **6**
2. Vapour Compression Cycle, Representation of Vapour Compression Cycle on temperature– entropy and pressure– enthalpy diagram, Effect of sub-cooling, Super heating, change in suction pressure and discharge pressure on coefficient of performance, Deviation of actual cycle from the theoretical cycle,. **6**
3. Working of a Domestic Refrigerators, Water Cooler& defreeze Refrigeration Tyre operation. Refrigeration tools and materials, tubing, cutting, bending, flaring, joining, tube, fittings, instruments and gauges. **6**
4. Meaning of Compressors, Types of compressor–reciprocating (semi-hermetic, hermetic and open types), rotary, centrifugal and screwed type. Working of compressor. **5**
5. Compressor construction, Valves, pistons, connecting rods, crankshafts, seals, oil circulation, hermetic and semi-hermetic units, cooling of windings, Mufflers. **5**
- 6** Meaning of Alternating Current D.C currents, Violate & phase difference knowledge of ohm's law, measurement of current, voltage & power. **5**
- 7** Wiring circuit diagrams of refrigerators and air conditioners. **3**
- 8**Psychometry– Composition of air, moist air, vapours and gases, specific humidity, absolute humidity, degree of saturation, relative humidity, Dry Bulb Temperature. **5**
- 9**Human comfort, Concept of effective temperature, Comfort Zone. **3**
- 10**Applications of Air Conditioning, Comfort, Industrial and Process Air Conditioning, Study of Window – type Air Conditioners, package units, Central Air Conditioning Plants. **3**
1. Measurement of air velocity and flow. **3**

PRACTICAL

Marks: 40

1. To learn proper techniques of cutting, fitting, reaming, bending, flaring of soft and hard copper Tubing, wedging, etc.
- 2**To learn brazing of copper tubing.
- 3**To understand the construction and functions of reciprocating compressors, condensers, and evaporators.
- 4**To study a hermetic unit and it's testing.
- 5**Study of various types of compressors, dismantling and assembling compressor.

- 6 Testing of reciprocating compressors.
- 7 To Study Domestic Refrigeration & water cooler.
- 8 Study of window, split and package type air conditioner.
- 9 Charging and testing of air-conditioner.
- 10 Measurement of Voltage, Current, Power etc.
- 11 Making electric circuit diagrams for refrigerator & air conditioner.
- 12 Study of tools and materials, Instruments and Gauges.

PRACTICAL GUIDELINES

Parameters	Marks
Project / Practical Activities	10
Viva Based on Project	10
Practical File / Report or Portfolio	10
Demonstration of Skill Competency in Lab Activities	10
Total	40

LIST OF RECOMMENDED BOOKS

1. **Refrigeration and Air Conditioning** by R.S. Khurana.
2. **Refrigeration and Air Conditioning** by N. Singh
3. **Refrigeration and Air Conditioning** by Sareo and Gabi
4. **Refrigeration and Air Conditioning** by P.L. Ballancy.

SUGGESTED LIST OF TOOLS, MEASURING INSTRUMENTS AND VEHICLES

S. No.	Name of Item	Quantity
1.	Kammer Ball-pane 1/4Kg.	12
2.	Plier combination (Insulated) 15cm.	6
3.	Plier side cutting 15 cm.	6
4.	Plier heavy duty insulated 20 cm.	5
5.	Plier Flat nose 15 cm.	5

S. No.	Name of Item	Quantity
6.	Screw Driver 10 cm.	6
7.	Screw Driver 20 cm.	12
8.	Pin punch 10 cm.	6
9.	Centre Punch 10 cm.	6
10.	Rule 30 cm (Steel).	5
11.	Scriber 15 cm.	5
12.	Knife double edge.	5
13.	Oilstone 20×5×2.5 cm Carborundum.	2
14.	Try Square Engineering 20 cm.	6
15.	Tap and Dies whit worth 3 to 12. Ty1-5 mm with die handle and tap.	1 Set
16.	Tap and dies BAO to 6 with the holder and Tap Wrench.	2 Set
17.	Standard pipe die 9.5 to 38 mm with handle.	2 Set
18.	Drill H.S.S. Parallel shank 1.5 to 12 mm by 1.5 mm.	1 Pair
19.	Hand Drill 6 mm capacity.	4 No.
20.	Bench grinder 1/2 HP, 250 volt.	1 No.
21.	Fire Extinguisher.	3 Nos.
25.	Sealing copper washer for stand.	10 each
	(a) Filling (Assorted).	10 each
	(i) 10×1m	10 each
	(ii) M-12, M-14, M-16, M-18, M-22, M-26	6 Nos.
26.	Drill Machine Electric 12 mm cap with stand (portable).	6 Nos.
27.	Tube cutter 3 to 25 mm cap.	3 Nos.
28.	Measuring Tap 200 cm (watch makers).	2 Nos.
29.	Instruments (watch makers) screw driver1–5 mm lap1set of 6.	3 Set
30.	Blow lamp 1 litre capacity.	3 Nos.
31.	Hammer, steel head with heads in set 28.5 mm.	3 Nos.
32.	Spanner socket size 4.7 mm to 15 mm. 10 to 31 mm with reversible ratchet short and long couplet.	1 Set
33.	Spanner ring D.E. off-set Multi point AE6 mm to 28 mm.	3 Set

S. No.	Name of Item	Quantity
34.	Electric Heaters.	1 No.
35.	Spanner open Jaw DE and across Flat 6 to 28 mm.	3 Set
36.	Spanner and Ring DE offset Multi Point with 4 to 15 Try 1.5 mm.	2 Set
37.	Spanner open Jaw DE across.	3 Set
38.	Wrench steel grip 2.5 cm cap.	3 Nos.
39.	Inside reamer.	1 No.
40.	Outside reamer.	1 No.
41.	Electronic leak detector Neon bulb.	1 No.
42.	Grip footprint 15 cm.	3 Nos.
43.	Spanner BA open Jaw DEO to 10.	3 Set
44.	Spanner sockets BA size 0–10.	3 Set
45.	Portable torch for soldering brazing for LPG/0-4.	1 Set
46.	Allen Key 1.5 to 12x0.4 mm.	3 Set
47.	Hacksaw frame adjustable.	4 Nos.
48.	Hand lamp wandering lead 10m.	3 Nos.
49.	Single thickness flaring tool with yoke size 4.5 mm to 15 mm.	1 Set
50.	Viceh and 5cm Jaw.	2 Nos.
51.	Viceh and 10cm Jaw.	2 Nos.
52.	High Vacuum pump 2 or 3 HP.	1 No.
53.	Charging board complete with calibrated glass and manifolds.	1 No.
54.	Flexible charging lines.	4 Nos.
55.	Bearings craper 15cm.	3 Nos.
56.	Hollow Punch.	3 Nos.
57.	Prick Punch.	3 Nos.
58.	Thermometers (–10°C to – 700°C).	12 Nos.
59.	Pocket Thermometer.	12 Nos.
60.	Adaptor Ammeter Volt-meter Instrument.	1 No.
61.	Remote bulb thermometer 10 cm dia (10°C to 70°C).	2 Nos.
62.	Compound gauge 6 cm dial with graduation.	6 Nos.
63.	Pressure gauge 6 cm dial 0–15 Kg/cm ² .	6 Nos.

S. No.	Name of Item	Quantity
	With 2Kg/cm ² graduation.	
64.	Shut off valve socket and TEE handed Key for 6mm.	3 Nos.
65.	Shut off valve socket and Tee handed key for 4 mm.	3 Nos.
66.	Gland packing socket & Tee handed key for 6 mm.	3 Nos.
67.	Gland packing socket & Tee handed key for 4 mm.	3 Nos.
68.	Measuring glands for oil 0.45Kg.	3 Nos.
69.	Pocket Testing lamp.	3 Nos.
70.	6 mm copper tube 8 metre long for charging line and gauge.	3 Nos.
71.	Pulley puller 3 legged 20 cm.	1 No.
	30 cm	1 No.
75.	Swedging Tools 6–9 mm.	2 Sets
76.	Glass lapping Block 45×45×6 mm.	2 Nos.
77.	Spring Balance dial Type 0–50 Kg..	2 Nos.
78.	Techno meter.	1 No.
79.	Sling Psychrometer.	6 Nos.
80.	Tube bending tool for Brass & Copper Tubes upto 15 mm.	1 Set
81.	Pipe bender spring Type for bending Universal.	2 Nos.
82.	Ratchet wrench 4–6 mm.	3 Nos.
83.	Cleaning Trays 60×60×5.	6 Nos.
84.	Refrigerators household assorted type (Reciprocating), different capacities.	3 Nos.
85.	Second hand refrigerator, repairable condition.	2 Nos.
86.	Compressor fractional HP for refrigeration with 1HP motor Hermetically sealed compressor.	2 Nos.
87.	Room Air Conditioner, second hand in repairable condition.	2 Nos.
88.	Refrigerator.	1 No.
89.	Room cooler.	1 No.
90.	Thermostatic Expansion valve.	6 Nos.
91.	Automatic Expansion valve.	6 Nos.
92.	Thermostatic switch.	3 Nos.
93.	Low pressure cutout.	1 No.

S. No.	Name of Item	Quantity
94.	Solenoid valves.	1 No.
95.	High pressure cutout.	6 Nos.
96.	Check valve.	2 Nos.
97.	Wheel spanner.	2 Nos.
98.	Liquid Line indicator 9×9 mm (sight glass).	3 Nos.
99.	Two way valves.	3 Nos.
100.	Three way valves.	3 Nos.
102.	Hand shut off valves 6 mm.	12 Nos.
103.	Hand shut off valves 8 mm, 12 mm.	6 Nos. each
104.	Hand shut off valves 15 mm.	3 Nos.
105.	Lockers, 24 pigeon holes.	1 No.
106.	Demonstration Table/Working Bench 2½×2×1m.	4 Nos.
107.	Almirah Steel.	4 Nos.
108.	Chairs (Steel).	4 Nos.
109.	Charts and Models of machine parts with duct arrangements.	2 Nos.
110.	Desert cooler.	1 No.
111.	Water Cooler second hand.	1 No.
112.	Deep Refrigerator second hand.	1 No.
113.	Insulation-Thermocole, Fibre-glass.	1 No.
114.	Anemometer.	1 No.
115.	Micro voltmeter.	1 No.
116.	Thermocouples (Copper constantan).	3 Nos.
117.	Cut-Modelo for pentype compressor.	1 No.
118.	Empty cylinder for F12, F22 capacity 10 Kg.	1 each
119.	Multimeter P125210/Type 260.	1 No.
120.	Soldering Iron 0.125 Kilowatt.	1 No.
121.	Trolley for gas cylinder.	1 No.
122.	Pinching Tool.	3 No.
123.	File, flat, rough (25 cm).	2 Nos.
124.	File, flat, smooth (25 cm).	2 Nos.

S. No.	Name of Item	Quantity
125.	Mallett wooden 15 to 76 cm dia.	2 Nos.
126.	Voltmeter 0–500 volts.	2 Nos.
127.	Ammeter 0–25 A.	2 Nos.
128.	Ammeter 0–10 A.	2 Nos.
129.	Drill (Electric) 12 mm with stand (Portable).	1 No.

**AIR CONDITIONING AND REFRIGERATION
CONSUMABLES AND RAW MATERIALS**

S. No.	Name and Particulars of Item	Quantity
1.	Jack-saw Blades 30 cm x 1.25 cm.	5 doz.
2.	Solder 20% lead 80% tin.	1 Kg.
3.	Fastener.	1 Kg.
4.	Copper Tubing 6 mm Internal 9 mm Internal	15 m. 9 m.
	12 mm Internal 15 mm Internal	3 m. 3 m.
5.	Silver Soldering Lead 42% (Easy Flow) Rod.	½ Kg.
6.	Emery Paper (Assorted).	2 doz.
7.	Emery cloth (Assorted).	2 doz.
8.	Solvent cleaning.	10 litre
9.	Lubricant cleaning.	1 litre
10.	Compressor oil (Copius).	10 litre
11.	Cotton waste.	10 Kg.
12.	Spirit.	4 litre
13.	Gasket 4 mm 1.5 x 0.6 m.	1 No.
14.	1 mm 1.5 x 0.6 m.	1 No.
15.	0.5 mm 1.5 m x 0.6 m.	1 No.
16.	Capillary tube 1.5 mm, 1 mm, 0.5 mm.	10 each
17.	Araldite (Economy size).	1 No.
18.	Thermocole sheet.	5 No.

S. No.	Name and Particulars of Item	Quantity
19.	Flare Nut (assorted).	10 doz.
20.	Compressor connectors 1/4"×1/8"M.P.T.	1 doz
21.	-do- 1/4" × 1/4" M.P.T.	1doz.
22.	Freon 22.	5 Kg.
23.	Oil.	20 Litre
24.	Grease.	1 Kg.
25.	Wire 2 mm (P.V.C.).	2 coil
26.	P.V.C. wire 4 mm.	2coil
27.	Nails, clips and clamps.	1 packet of 100 coils
28.	Wood-woods having.	80 Kg.
29.	Plastic pipe 9mm, 12 mm, 15 mm.	4 m each
30.	P.V.C. conduit 12 mm dia.	20 No.
31.	P.V.C. conduit cross bent C.T.C.	6 each
32.	P.V.C. Reducing Bush.	(As required)
33.	P.V.C. Container size: 10 litres, 25 litres.	3each
34.	Lead.	1 Kg.
35.	Button Holder 5 amp.	(As required)
36.	S.P. Switch 5 amp.	10 Nos.
37.	S.P. Switch 5 amp.	1No.
38.	Turpentine Oil.	5 litre
39.	Bitumen compound.	1 Kg.
40.	B Electric lamp for Domestic Refrigerator, Commercial Refrigerator.	3 Pieces
41.	Brine salts.	
	(a) NaCl	5 Kg.
	(b) CaCl ₂	5 Kg.
	(c) HgCl	5 Kg.
42.	Litmus solution.	25 ml
43.	Insulating tape.	6 rolls
44.	Black paint for conductor.	2 Kg.
45.	Painting Brush (assorted).	3 Nos.
46.	Insulating coaching mud.	2 Kg.
47.	White enamel paint.	1/2 Kg.

S. No.	Name and Particulars of Item	Quantity
48.	Demonstration Board 1.8 m×1.2 m.	3 Nos.
49.	Petrol.	1litre
50.	Wire Brushes 5cm (Steel).	3 Nos.
51.	Dead Nut (Assorted).	3 Kg.
52.	Old Dhoti.	25 Nos.
53.	Soldering Flux.	1 Kg.
54.	Relay 1/4 HP.	2 Nos.
55.	Refrigerant filter.	2 Nos.
56.	Relay.	2 Nos.
57.	Silica.	1 Kg.
58.	Capacitor 50 uf.	3 Nos.
59.	Running capacitor	10 Nos.
60.	Overload protector.	4 Nos.
61.	Hermetically sealed compressor (Second Hand).	1 No.
62.	Flaring toolset.	2 Nos.

LIST OF (CONSUMABLE) FOR ENGINEERING DRAWING & DRAWING OFFICE

S. No.	Name and Particulars of Item	Quantity
1.	Drawing sheets Imperial size, superior quality.	6 dozen
2.	Water proof veeto ink, black.	6 Nos.
3.	Cello tape small roll 12 mm wide.	6 Nos.
4.	Cello tape medium roll 18 mm wide.	6 Nos.
5.	Brass Drawing pins superior quality.	One gross
6.	Ink eraser (rubbers).	2 Nos.
7.	Drawing Rubber, Superior.	3 Nos.
8.	Drawing pencil, 2H, H, HB, B (1 dozen each).	4 dozen
9.	Ammonia paper, Roll 10 m.	10 Rolles
10.	Tracing Paper Roll 101 cm–18.3 m.	One Roll
11.	Cloth duster.	3 Nos.
12.	Soap bar.	6 Bars
13.	Liquid NH3 bottles.	3 Nos.

MEDICAL DIAGNOSTICS (828)

Job Role: (Medical Lab Technician)

SCHEME OF UNITS

This course is a planned sequence of instructions consisting of Units meant for developing employability and vocational competencies of students of Class XI opting for vocational subject along with general education subjects. The unit-wise distribution of hours and marks for Class XI is as follows:

CLASS XI (2018-19)

	Units	No. of Periods for Theory and Practical 260	Max. Marks for Theory and Practical 100
Part A	Employability Skills		
	Unit 1: Communication Skills-III	20	10
	Unit 2: Self-Management Skills-III	15	
	Unit 3: Information and Communication Technology Skills-III	10	
	Unit 4: Entrepreneurial Skills-III	25	
	Unit 5: Green Skills-III	10	
	Total	80	
Part B	Vocational Skills		
	Unit 1: Investigation Urine & Faces Analysis		50
	Unit 2: Body Fluids		
	Unit 3: Process & Investigations		
	Unit 4: Blood Bank & Transfusion		
	Unit 5: Lab Process		
	Unit 6: Cytology		
	Total	160	50
Part C	Practical Work		
	Practical Examination	06	15
	Written Test	01	10
	Viva Voce	03	05
	Total	10	30
Part D	Project Work/field Visit		
	Practical File/Student Portfolio	10	10
	Total	10	10
	Grand Total	260	100

CLASS XI (2018-19)

MEDICAL DIAGNOSTICS (828)

Introduction

Objectives of Introducing Medical Diagnostics Course in Schools.

1. To help students understand the organization of Hospitals, Research labs, Diagnostic labs.
2. To equip students with the skills needed to work in a hospital or a diagnostics lab.
3. To impart skills to students that enables them to work in manufacturing units for diagnostic reagents.
4. To develop skills and ability to assist qualified experts in health care, diagnostics and related fields.
5. To develop ability and skill among students; to understand, analyze and assist the analytical, research and development work in drug labs and various pharmaceuticals.
6. To develop the technical skills to handle the equipment and apparatus of the lab.
7. To help students learn various analytical and investigative procedures and techniques used in medical labs and hospitals.

Part A - Employability Skills (REF. PAGE NO. - 05)

Part B–Vocational Skills

Unit–1: Investigation Urine & Faces Analysis

- Introduction.
- Maintenance & Equipments of Pathology Lab.
- Preparation of Reagents.
- Urine.
- Formation and composition.
- Collection Preservation Gravity & PH.
- Examination–Physical.
- Examination– Chemical.
- Sugar.
- Ketone Bodies, Bile.
- Blood, Crystals.
- Parasites & Abnormal Cells.
- Feces–Formation, Physical & Chemical Examination.
- Preparation of stool sample for microscopic examination.
- Sputum Examination.
- Assessment.

Unit–2: Body Fluids

- Body Fluids.
- Cerebro spinal fluid. Synovial fluid and Pleural fluid Pericardial fluids Peritoneal fluids.

- Other fluids collected transudate or exudates.
- Semen Analysis—Collection, Physical & Chemical examination.
- Sperm count – Microscopic examination & Motility.
- Assessment.

Unit-3: Process & Investigations

- Reagents – Preparation and their uses.
- Personnel care and protection Disposal of Bio-Medical waste Smear Making.
- Staining Methods.
- Osmotic fragility test.
- Differential Counts.
- Cell counts – RBC, WBC, and Platelets Eosinophil & Reticulocyte count ESR.
- LE Cell.
- Haemopoiesis– Erythrocytes Hemoglobin – Estimation Packed Cell Volume, Indices Hematocrit and Red cell indices Anemia.
- Leukocytes.
- Coagulation Factors.
- Coagulation disorders – Bleeding & Clotting Time.
- Bone marrow study.
- Assessment.

Unit-4: Blood Bank & Transfusion

- Blood Bank.
- Material & equipment Reagents – preparation Protocols.
- Storage & Preservation.
- Records in Blood bank.
- ABO System.
- Subgroups in ABO System.
- Practical importance of Other blood groups.
- Rh System.
- Antibody titers.
- Blood grouping techniques Problems in blood grouping Donor Motivation.
- Donors election & Registration.
- Blood Collection.
- Storage, Preservation & Processing of blood.
- Quality control.
- Investigation of transfusion, reactions.
- Grouping & cross matching Direct and Indirect Coombs test Mandatory Test.
- Assessment.

Unit-5: Lab Process

- Materials, Equipment & Techniques.
- Biopsy, Autopsy.

- Collection, Preservation & Labeling of Slides, Blocks, Specimens.
- Techniques.
- Grossing Methods.
- Fixatives.
- Processing of the tissues including Bone.
- Embedding Section Cutting Staining & Mounting Special Stains.
- Preservation of reports & records.
- Assessment.

Unit-6: Cytology

- Techniques Equipment & Procedures – FNAC, Imprints smear.
- Vaginal & Buccal smear, Swabs.
- Staining procedure and Mounting.
- Preparation of fluids for Cytological Examination.
- Immunohistochemistry.
- Assessment.

PRACTICAL

Unit-1: Urine & Feces Analysis

- Introduction.
- Maintenance & Equipment of Pathology Lab.
- Preparation of Reagents.
- Urine.
- Formation and composition.
- Collection Preservation Gravity & PH.
- Examination–Physical Examination - Chemical Sugar.
- Ketone Bodies.
- Bile, Blood, Crystals.
- Parasites & Abnormal Cells.
- Feces–Formation, Physical & Chemical Examination Preparation of stool sample for microscopic examination Sputum Examination.
- Assessment.

Unit-2: Body Fluids

- Body Fluids.
- Cerebrospinal fluid, Synovial fluid.
- Pleural fluid.
- Pericardial fluids.
- Peritoneal fluids.
- Other fluids collected transudate or exudates.
- Semen Analysis – Collection, Physical & Chemical examination.

- Sperm count– Microscopic examination & Motility.
- Assessment.

Unit-3: Hematology Process & Investigations

- Smear Making Staining Methods Osmotic fragility test.
- Differential Counts.
- Cellcounts – RBC, WBC, Platelets.
- ESR.
- LE Cell.
- Hemoglobin – Estimation.
- Hematocrit and Red cell indices.
- Coagulation disorders – Bleeding & Clotting Time.
- Bone marrow study – Demo.
- Assessment.

Unit-4: Blood Bank & Transfusion

- Blood Bank.
- ABO Blood grouping – cell and serum grouping.
- Rh typing.
- Anti body titers.
- Blood grouping techniques – Other methods.
- Donor selection & Registration – Demo.
- Blood Collection – Demo.
- Storage, Preservation & Processing of blood – Demo.
- Quality control Demo.
- Investigation of Transfusion, reactions.
- Cross matching.
- Direct and Indirect Coombs test.
- Mandatory Test – Screening Tests – Demo.
- Assessment.

Unit-5: Histopathology Lab Process

- Histopathology.
- Introduction.
- Materials, Equipment & Techniques.
- Biopsy, Autopsy.
- Collection, Preservation & Labeling of Slides.
- Blocks, Specimens Techniques.
- Grossing Methods.
- Fixatives.
- Processing of the tissues including Bone.
- Embedding.

- Section Cutting.
- Staining & Mounting.
- Special Stains.
- Preservation of reports & records.
- Assessment.

Unit-6: Cytology

- Cytology.
- Techniques Equipment & Procedures – FNAC.
- Imprintsmear, Vaginal & Buccalsmear, Swabs.
- Staining procedure and Mounting.
- Preparation of fluids for Cytological Examination.
- Immunohisto chemistry.
- Assessment.

**LIST OF EQUIPMENTS REQUIRED TO IMPART TRAINING
AT MEDICAL COLLEGE HOSPITAL, INSTITUTES**

Minimum Requirements: (for a batch of 30 students)

- A. Basic Instruments.
B. Instruments for Demonstrations.
C. Reagents & Chemicals, Glassware.

A. Basic Instruments

(Approx. Cost 5 lacs)

1.	Microscope with built in illumination.	Monocular	–	6
		Binocular	–	2
2.	Calorimeter.		–	1
3.	Photoelectric colourimeter.		–	1
4.	Incubator.		–	1
5.	Hot Air Oven.		–	1
6.	Autoclave.		–	1
7.	Simple Balance.		–	1
8.	Haemoglobinometer Colormetric.		–	1
9.	Single Pan Balance.		–	1
10.	Haemocytometer (Hellige).		–	10
11.	Water bath (Serological).		–	2
12.	Centrifuge Machine angle rotator with wintube adaptor, time & speed regulator.		–	2
13.	Inoculation Chamber Rotary.		–	1
14.	Microtome.		–	1

- | | | | |
|-----|--------------------------------------|---|---|
| 15. | ELISA Reader & Washer. | - | 1 |
| 16. | Distillation Plant All Glass Double. | - | 1 |
| | Single Distillation. | - | 1 |

B. Instruments for Demonstrations (Approx. Cost 10 lacs)

- | | | | |
|-----|--|---|---|
| 1. | HaematologyAnalyser (semi automated). | - | 1 |
| 2. | HaematologyAnalyser (fully automated). | - | 1 |
| 3. | Biochemistry Analysers (semi automated). | - | 1 |
| 4. | Biochemistry (fully automated). | - | 1 |
| 5. | ELISA Reader (automated). | - | 1 |
| 6. | Electrophrasis Apparatus. | - | 1 |
| 7. | HistoKinett. | - | 1 |
| 8. | Densitometer. | - | 1 |
| 9. | Freezing Microtome. | - | 1 |
| 10. | Tissue Processor. | - | 1 |
| 11. | McIntosch Apparatus for Anaerobic Culture. | - | 1 |
| 12. | Laminar flow System. | - | 1 |

C. Reagents/Chemicals, Glass Wares

As per requirements of Diagnostic Laboratories for 40–50 samples per day.

TEXTILE DESIGN (829)

Job Role: Design Assistant (Apparel/ Textile)

SCHEME OF UNITS

This course is a planned sequence of instructions consisting of Units meant for developing employability and vocational competencies of students of Class XI opting for vocational subject along with general education subjects. The unit-wise distribution of hours and marks for Class XI is as follows:

CLASS XI (2018-19)

	Units	No. of Periods for Theory and Practical 260	Max. Marks for Theory and Practical100
Part A	Employability Skills		
	Unit 1: Communication Skills-III	20	10
	Unit 2: Self-Management Skills-III	15	
	Unit 3: Information and Communication Technology Skills-III	10	
	Unit 4: Entrepreneurial Skills-III	25	
	Unit 5: Green Skills-III	10	
	Total	80	
Part B	Vocational Skills		
	Unit 1: Overview of Textile Industries and Textile Fibers	35	50
	Unit 2: Textile Spinning and Yarn	45	
	Unit 3: Textile Weaving and Woven Fabrics	45	
	Unit 4: Other Forms of Textiles	35	
	Total	160	
Part C	Practical Work		
	Practical Examination	06	15
	Written Test	01	10
	Viva Voce	03	05
	Total	10	30
Part D	Project Work/field Visit		
	Practical File/Student Portfolio	10	10
	Total	10	10
	Grand Total	260	100

CLASS XI (2018-19)

TEXTILE DESIGN (829)

Preamble

Since clothing and home furnishings make up a major portion of the family budget, knowledge of textiles is as appropriate for consumers who wish to purchase wisely as it is for those whose career interests lie in textiles. The marketers of textile fibers, fabrics, and finished goods must all be familiar with the manufacturing methods, construction, and finishing techniques which affect the performance of textile products.

The objective of this course is to understand the raw materials - fibers, fiber source and properties. The conversion of fiber into yarn, yarn spinning processes conversion of yarn for fabric developments (like woven, knit and other forms of fabrics). At the end of the course the students shall be able to understand integration of fiber, yarn and various forms of fabrics and will be able to integrate fabric properties, characteristics, performances and behavior according to various end uses for Apparel and Home furnishing products.

Part A - Employability Skills (REF. PAGE NO.- 05)

Part B–Vocational Skills

THEORY

Unit–1: Overview of Textile Industries and Textile Fibers

15

Objectives

- To familiarize the background of Indian Textile Industries.
- To learn and understand Textile terminology.
- To understand the sources and properties of Textile fibers.
- To predict the performances and characteristics of fabrics, according to fiber content for various end uses.

Learning Outcome

After finishing the course, the students shall be able.

- To use appropriate terminology used in Textile Application.
- To understand the interrelationships in Textile Business.
- To get an overview of Textile Industries in India.

Course Content

- The major Textile Production Segments in India.
- Sources of Fabrics.
- Classification of Textile Fibers according to origin and chemical composition; Essential Properties and Performances of Textile Materials like Aesthetic, Durability, Comfort, Safety, Care and Maintenance Properties.
- Properties of Cotton, Flax, Hemp and Jute.
- Properties of Silk, Wool, Mohair and other Natural Fibers.

- Properties of Viscose Rayon, Loyocel and Acetate.
- Properties of Polyester, Nylon, Acrylic and Spandex.

Unit–2: Textile Spinning and Yarn

7

Objectives

- To familiarize Yarn Spinning Process.
- To understand the properties and characteristics of various types of yarns.

Learning Outcome

After finishing the course, the students shall be able.

- To understand basics of Yarn Manufacturing.
- To predict and select different types of yarn for fabric development according to various end uses.

Course Content

- Classification of Yarns; Spun Yarn Production Process, Carded and Combed Yarns; Woollen and Worsted Yarns; Mono Filament and Multi Filament Yarns.
- Yarn Numbering Systems – Cotton Count, Metric Count, Denier, Tex and Deci-Tex. Single and Plied Yarns; Yarn Twist, Amount of Twist and Direction of Twist.
- Textured Yarns – Core Spun Yarn; Novelty and Fancy Yarns, Blended Yarns, Sewing Threads.

Unit–3: Textile Weaving and Woven Fabrics

6

Objectives

- To familiarize the weaving process involved in producing Woven Fabrics.
- To understand the properties and characteristics of various types of Woven Fabrics.

Learning Outcome

- To predict and select different types of woven fabrics according to various end uses.
- To recognize and identify different types of woven fabrics.

Course Content

- Preparatory to weaving, including High speed machines for Winding, Warping, Sizing, Beaming and Weft Winding.
- The Loom, types of Looms, classification and selvedge formations.
- Basic motions of the loom, including the application of Dobby and Jacquards. Non-automatic loom, Automatic loom, Shuttle less weaving machines, Terry looms and Drop box loom.
- Introduction to basic weaves; plain, basket, rib, twill, satin, sateen, dobby, jacquard, crepe, pique, seer sucker, terry, velvet and velveteen.

Unit–4: Other Forms of Textiles

22

Objectives

- To familiarize the basics of different types of Knitting and properties of knitted fabrics, and other forms of Textiles like Non-woven, Felt, Lace and Braids.

Learning Outcome

- To predict and select different types of Knitted, Non-woven, Felt, and Braid according to various end uses.
- To recognize and identify different types : Knitted, Non-woven, Felt, and Braid fabrics.

Course Content

- Difference between Woven and Knitted fabrics.
- General knitting terms : types of knitting machines, circular and flat machines.
- Types of Knitting Stitches.
- Properties of Weft Knitted Fabrics, Jersey, Rib, Purl and Interlock.
- Comparison and properties of Warp Knitted Fabrics.
- Non-Woven Fabrics – Methods and Materials to Manufacture Non-Woven Fabrics, Felt, Embroidery, Tufted Fabrics, Braids and other Narrow Fabrics.

Methodology of Teaching

- Illustrated lectures with slides and visuals along with fibers, yarns, woven, knitted non-woven, lace and braid fabric samples.
- A teacher would be expected to create a library of fabrics to explain and conduct the classes.
- Visit to textile mills & Industry.

PRACTICAL

Experiment No. 1:

- To determine the chemical nature of fiber by burning test.

Experiment No. 2:

- To determine the variation in staple lengths of natural fibers.

Experiment No. 3:

- To determine the yarn fineness using direct count system.

Experiment No. 4:

- To determine the yarn fineness using English count system (indirect).

Experiment No. 5:

- To convert yarn fineness from direct count system into indirect count system and vice versa.

Experiment No. 6:

- To determine the twist direction in yarn.

Experiment No. 7:

- To determine the twist per unit length of a yarn.

Experiment No. 8:

- To determine the difference between a staple fiber yarn and a filament yarn.

Experiment No. 9:

- To differentiate between a single staple fiber yarn and a plied staple fiber yarn.

Experiment No. 10:

- To determine the sequence of process and material flow in yarn manufacturing.

Experiment No. 11:

- To measure the thread density in different kind of fabrics and compare according to end uses.

Experiment No. 12:

- To identify the possible end-uses of woven, knitted and non-woven fabrics.

Experiment No. 13:

- To measure grams per square meter (GSM) of different quality of fabrics and compare the weight according to end uses.

Experiment No. 14:

- To analyze the design of different fabric samples.

Experiment No. 15:

- To visit a fabric store or fabric department within a store and survey the various woven fabrics on display and note the wide variety of fabrics and possible end uses.

Experiment No. 16:

- To find the fabric thickness of different fabrics.

Experiment No. 17:

- To evaluate the wale and course per inch with the help of a pick glass.

Experiment No. 18:

- To source fifteen different nonwoven fabrics from the market physically evaluate their possible end-uses.

Experiment No. 19:

- To prepare a flow chart for weaving or knitting process in the industry.

Experiment No. 20:

- To estimate the drape of various fabrics.

Reference Books

- Textile Science, Students Handbook & Practical Manual, Class–XI, Published by CBSE.

MARKING SCHEME

Two Practical from each Section shall be Conducted.

- (i) Session Work.
Maintenance of Record.
On the Lab Learning.
- (ii) Viva Voice.
- (iii) All the laboratory experiments will carry five marks each, they should be evaluated on the basis of evenness of the dyeing and printing, neatness and cleanliness maintained during the practical.

DESIGN (830)

Job Role: (Asstt. Designer)

SCHEME OF UNITS

This course is a planned sequence of instructions consisting of Units meant for developing employability and vocational competencies of students of Class XI opting for vocational subject along with general education subjects. The unit-wise distribution of hours and marks for Class XI is as follows:

CLASS XI (2018-19)

	Units	No. of Periods for Theory and Practical 260	Max. Marks for Theory and Practical100
Part A	Employability Skills		
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	Unit 2: Self-Management Skills-III	15	
	Unit 3: Information and Communication Technology Skills-III	10	
	Unit 4: Entrepreneurial Skills-III	25	
	Unit 5: Green Skills-III	10	
	Total	80	
Part B	Vocational Skills		
	Unit 1: Introduction to Design	35	50
	Unit 2: Design Tools and Techniques	45	
	Unit 3: Occupational Health and Safety	45	
	Unit 4: Practical Workshop	35	
	Total	160	
Part C	Practical Work		
	Practical Examination	06	15
	Written Test	01	10
	Viva Voce	03	05
	Total	10	30
Part D	Project Work/field Visit		
	Practical File/Student Portfolio	10	10
	Total	10	10
	Grand Total	260	100

CLASS XI (2018-19)

DESIGN (830)

Introduction

The Course on Design Fundamental is intended to introduce ideas, methodologies, principles, and skills that comprise a common knowledge base important to all design disciplines. These fundamental will foster a multidisciplinary design experience among students and will prepare them to move to the next level. It will provide the participants with foundation and fundamentals skills in design. The program is designed to provide a pathway to a range of vocational qualifications, including diplomas of graphic design, visual merchandising, visual arts, digital design, screen and performing arts.

The program provides a comprehensive range of skills and knowledge required as preparation for entry level jobs. The course will benefit applicants who have little or no training or experience in art and design and who wish to begin formal education in this field.

Part A - Employability Skills (REF. PAGE NO.- 05)

Part B–Vocational Skills

Unit–1: Introduction to Design

15

Session–1: Concept of Design

- Design Definition.
- Design versus Art.
- Design and Environment.
- The basis of Design Process.
- Use Design in today’s scenario.

Session–2: Design Fundamental

- Principles of Design.
- Elements of Design.
- Color
- Understanding of Color wheel.
- To increase and build sensitivity to the forms around them.
- To identify the revolving still life and outdoor in vicinity of environment.
- To relate the elements of design to understand design process for their projects.
- Understanding the colour quality, intensity, relationship with other colours, textures, shape.

Unit–2: Design Tools and Techniques

10

Sessions–1: Produce Drawing

- Defining Drawing.
- Different techniques of drawing.
- Exploration of medium.
- Compositions and Perspectives.
- Tonal Techniques.
- Use of Dreams and Music for creative Drawing.
- To identify the use of tone and value, Texture/Frottage.
- Identify to use contour line drawing (continuous or cross contour).

Unit–3: Occupational Health and Safety

10

Session–1: Work Safe Review Module

- Safety and Health responsibility.
- Role of War safe Inspector.
- Hazard identification, Risk assessment and Risk control.
- PPE.
- Dealing with emergency.
- Design a promotional poster advertising what students need to know about Safety and Dangers, or be warned about while working at College.

Unit–4: Practical Workshop

15

Session–1: Knowledge Workshop

- Source and apply design industry knowledge.
- Source and apply information on the history and theory of design.
- Project 1: Research on a Contemporary designer.
- Project 2: Photograph and Report on Signage and Window display.
- Project 3: Critique the Design of a Product.

Session–2: Design Concepts Workshop

- Design concepts workshop road signs.
- Design concepts workshop zoological and botanical logo.
- Design concepts workshop T-shirts design.

Session–3: Graphic Design Workshop

- Produce Designs for Clothing Range, Shoes or CD Cover.
- Color zones applied Colour assessment.
- Poster Design for an Opera or Ballet.

LAB REQUIREMENT FOR TWENTY STUDENTS

S. No.	List of Items
□	<p>Technical Drawing Equipment</p> <ul style="list-style-type: none">Computer station Licensed software (Autocad by Autodesk or Adobe Creative Suite CS6 or higher).Printer.Photography supplies, digital photo frame, access to photo printers.
□	<p>Drawing Equipment and Materials</p> <ul style="list-style-type: none">○ Soft boards All around the walls.○ Stools.○ Black board.○ White board.○ Crayons, pastels, charcoal.○ Colored pencils, pens, washable markers, calligraphy pens, erasers.○ Variety of paper, cardboard.○ Dry-erase boards, markers.○ Chalk, chalk board, erasers.○ Non-toxic paint (tempera, acrylic, oil, water colour, finger paint).○ Colored ink, stamps, wood blocks, natural materials, cardboard.○ Paint brushes, rollers, squeeze bottles, spray bottles, sponges, paint scrapers.○ Glue, paste, glue sticks, pots, brushes, spreaders.○ Paper scraps, magazines, cards, wrapping paper, ribbon, cellophane, newspapers. <p>Cardboard tubes, boxes, rolls.</p>

- Pair of scissors.
- Staplers.
- Geometry sets.
- Paper punches.
- Clips, thumb tacks.
- Adhesive tapes, glue, craft glue.
- Sandpaper, cloth, string, wire.

SALESMANSHIP (831)

Job Role: Sale Executive

SCHEME OF UNITS

This course is a planned sequence of instructions consisting of Units meant for developing employability and vocational competencies of students of Class XI opting for vocational subject along with general education subjects. The unit-wise distribution of hours and marks for Class XI is as follows:

CLASS XI (2018-19)

	Units	No. of Periods For Theory and Practical 260	Max. Marks for Theory and Practical 100
Part A	Employability Skills		
	Unit 1: Communication Skills-III	20	10
	Unit 2: Self-Management Skills-III	15	
	Unit 3: Information and Communication Technology Skills-III	10	
	Unit 4: Entrepreneurial Skills-III	25	
	Unit 5: Green Skills-III	10	
	Total	80	
Part B	Vocational Skills		
	Unit 1: Salesmanship	40	50
	Unit 2: Essentials of Sales	30	
	Unit 3: Preliminary Stages of Personal Selling Process	40	
	Unit 4: Advance Stages of Personal Selling Process	50	
	Total	160	
Part C	Practical Work		
	Practical Examination	06	15
	Written Test	01	10
	Viva Voce	03	05
	Total	10	30
Part D	Project Work/field Visit		
	Practical File/Student Portfolio	10	10
	Total	10	10
	Grand Total	260	100

CLASS XI (2018-19)
SALESMANSHIP (831)

Part A - Employability Skills (REF. PAGE NO. - 05)

Part B–Vocational Skills

THEORY

Marks: 50

S. No.	Unit	Sessions	Marks Allotted
1.	Salesmanship	<ul style="list-style-type: none">• Meaning & Importance of Personal Selling.• Function & Types of Personal Selling.• Introduction to Salesmanship.• Qualities of effective Sales person.	12
2.	Essentials of Sales	<ul style="list-style-type: none">• Knowledge of Industry and Company.• Knowledge of Products.• Knowledge of Customer.	10
3.	Preliminary Stages of Personal Selling Process	<ul style="list-style-type: none">• Prospecting: Meaning, Importance, Characteristics for qualifying as a prospects and methods of prospecting.• Pre-approach: Meaning, Importance and sources of information.• Approach: Meaning, Importance & Methods.	12
4.	Advance Stages of Personal Selling Process	<ul style="list-style-type: none">• Demonstration & Presentation: Concepts & Essential features of Good Presentation and Demonstrations.• Objection Handling: Understanding Objections, Procedure for Handling Objections.• Closing Sale: Features and methods of Closing Sale.• After sale Services: Concepts and importance of after Sale Service.	16

PRACTICAL

Marks: 40

1. Identify from newspaper column's the jobs of salesman advertised and the qualification desired.
2. Interview managers of organizations located nearby and ascertain the qualities of salesmen considered for appointment. Prepare reports.

MUSIC PRODUCTION (832)

Job Role: (Production Assistant)

SCHEME OF UNITS

This course is a planned sequence of instructions consisting of Units meant for developing employability and vocational competencies of students of Class XI opting for vocational subject along with general education subjects. The unit-wise distribution of hours and marks for Class XI is as follows:

CLASS XI (2018-19)

	Units	No. of Periods for Theory and Practical 260	Max. Marks for Theory and Practical100
Part A	Employability Skills		
	Unit 1: Communication Skills-III	20	10
	Unit 2: Self-Management Skills-III	15	
	Unit 3: Information and Communication Technology Skills-III	10	
	Unit 4: Entrepreneurial Skills-III	25	
	Unit 5: Green Skills-III	10	
	Total	80	
Part B	Vocational Skills		
			50
	Total	160	
Part C	Practical Work		50
	Practical Examination	06	
	Written Test	01	15
	Viva Voce	03	10
	Total	10	05
Part D	Project Work/field Visit		30
	Practical File/Student Portfolio	10	
	Total	10	10
	Grand Total	10	10
		260	100

CLASS XI (2018-19)
Music Production(832)

Section-1

Part A - Employability Skills (REF. PAGE NO. - 05)

Part B–Vocational Skills

Introduction

This Course will provide the students with a practical introduction to recording processes including, mixing, editing and post-production. It will aid the4 students to gain skills in recording studios and performance venues and get on track to a career in technical production. Also it will develop the necessary skills to record and produce music as well as live sound operation. This course will allow the students with the opportunity to participate in recording sessions and follow the production processes through to the completion of a demo recording. Moreover, it is intended to give the students the basic skills to begin an exciting career in music sound production or for the further study.

1) Learning Objectives

a) BSBWOR203A Work Effectively with others:

Unit Descriptor, Elements and Performance Criteria, Required Skills and Knowledge, Range Statement.

b) CUSSOU201A Assist with sound recordings:

Unit Descriptor, Elements and Performance Criteria, Required Skills and Knowledge, Range Statement.

c) CUETGE15B Handle physical elements during bump in bump out:

Unit Descriptor, Elements and Performance Criteria, Required Skills and Knowledge, Range Statement.

2)

a) Live Class Notes:

Introduction : Employment in the Production Industry, Review OHS, Difference between FOH and monitor, Lifting techniques, Cable and Connectors, DI sources (keyboards acoustic GTRs, CD players), Amplifiers, Vocal Microphone: Gain before feedback and stage placement, PA Lesson.

b) Studio Location:

Digital recording, Types of digital recording, Introduction to the Zoom H2 portable recording device, introduction to Boss 8 track digital recorders, External microphone recording with Boss 8 track portable digital recorders, multiple microphone recording with Boss 8 track portable digital recorders, Expanding capability of Boss Digi 8 track

using external mixer and multiple microphone, Introduction to signal flow in analogue consoles. Difference between in line and split consoles, Introduction to signal flow in audient console, single sound source, Multiple sound sources, Introduction to HD24, Recording from audient console into to HD24, Multiple sound sources.

c) Small PA Systems

Introduction: home studio monitoring, live solo and duo acts, public announcing, Basic system equipments, Setting up equipments, Power on procedure.

d) Medium PA Systems

Medium size PA systems, Introduction: small bands, live solo and duo acts (medium size venues), public announcing, Microphones, Mixing Console, Setting up equipments, Power on procedure, Level setting procedure, Occupational Health and Safety.

3) **Assignments:**

- (i) Assessment 1 : Worksheet 1: Portable Digital Recorders Zoom H2
- (ii) Assessment 2 : a) OHS Observation Checklist: Safe Lifting
b) Assessment Feedback Form
- (iii) Assessment 3: Worksheet 2 : Portfolio Digital Recorders Boss 8 Track
- (iv) Assessment 4: a) Observation Checklist: Zoom H2 and Boss 8 Track
b) Assessment Feedback form
- (v) Assessments 5: System Setup
- (vi) Assessment 6: Live Sound Recording
- (vii) Assessment 7: a) Studio Basics
b) Assessment Feedback form

Section-2

3) **Learning Objectives**

d) BSBWOR203A Work effectively with others:

Unit Descriptor, Elements and Performance Criteria, Required Skills and Knowledge, Range Statements.

e) CUSMLT202A Apply knowledge of music culture to music making:

Unit Descriptor, Elements and Performance Criteria, Required Skills and Knowledge, Range Statement.

f) CUSMPF201A Play or sing simple musical pieces:

Unit Descriptor, Elements and Performance Criteria, Required Skills and Knowledge, Range Statement

4) **Music Culture:**

Introduction, What is Music? What is Culture? , Modern music Examining music cultures around the world, Examining Australia's music culture, The future of Music Industry, Examining the musical instruments: Human voice, Examining the musical instruments ; the guitar, Types of Guitars, Examining the musical instruments: the piano, Examining musical instruments – percussion, Examining musical instruments: Synthesizer-what is a Synthesizer, How a Synthesizer creates a sound, signal generating and processing components, modulation and control components, Oscillators, Common Synthesizer waveforms, Noise: Pink/red, blue, white, Reshaping waveforms, Filters, Types of filters, Cutoff frequency, Resonance, Drive, Filter Slope, Modulation, LFO Controls, LFO envelopes, Global controls, Introduction to music notation, time signatures, scales Music theory-Chords and symbols, What is an ensemble.

5) **Assignments:**

- (i) Assessment 1: Worksheet: Music Culture
- (ii) Assessment 2: a) Worksheet: Digital Portable Recorders : Part A
b) Assessment 2: Worksheet: Digital Portable Recorders: Part B
- (iii) Assessment 3: a) Direct Observation Checklist: Digital Portable Recorders
b) Assessment feedback form
- (iv) Assessment 4: Worksheet: Instruments 1
- (v) Assessment 5: worksheet: Instruments 2
- (vi) Assessment 6: a) Direct Observation Checklist: Ensemble Playing
b) Assessment 6: Direct Observation Checklist: Ensemble Playing
- (vii) Assessment 7: a) Direct Observation Checklist: Studio Recording
b) Assessment Feedback form

SUGGESTED LIST OF EQUIPMENTS

- Microphone - New men Condenser Microphones (at least Six)
- Audio Console 16 track Analogue/Digital
- Stand (Giraffe) (6)
- Computer With sound card and 2GB Ram &500GB
- HDD Capable of running Audacity
- XLR Cable & Connectors
- Jack Connectors
- Studio speakers for Monitoring (2 L & R)

BUSINESS ADMINISTRATION (833)

Job Role: (Business Executive)

SCHEME OF UNITS

This course is a planned sequence of instructions consisting of Units meant for developing employability and vocational competencies of students of Class XI opting for vocational subject along with general education subjects. The unit-wise distribution of hours and marks for Class XI is as follows:

CLASS XI (2018-19)

	Units	No. of Periods for Theory and Practical 260	Max. Marks for Theory and Practical 100
Part A	Employability Skills		
	Unit 1: Communication Skills-III	20	10
	Unit 2: Self-Management Skills-III	15	
	Unit 3: Information and Communication Technology Skills-III	10	
	Unit 4: Entrepreneurial Skills-III	25	
	Unit 5: Green Skills-III	10	
	Total	80	
Part B	Vocational Skills		
	Unit 1: Introduction to Business Operations		60
	Unit 2: Business Environment		
	Unit 3: Products and Services		
	Unit 4: Types of Organization		
	Unit 5: Formation of Partnership Firm and Joint Stock Company		
	Unit 6: Business Correspondence		
	Unit 7: Functional Areas of Management		
	Unit 8: Organisational Behaviour		
	Total	160	60
Part C	Practical Work		
	Practical Examination	06	10
	Written Test	01	05
	Viva Voce	03	05
	Total	10	20
Part D	Project Work/field Visit		
	Practical File/Student Portfolio	10	10
	Total	10	10
	Grand Total	260	100

CLASS XI (2018-19)
BUSINESS ADMINISTRATION (833)

Part A - Employability Skills (REF. PAGE NO. - 05)

Part B–Vocational Skills

Marks: 60

Content	Topics	
1. Introduction to Business Operations	1.1 Concept and definition of Business Operations. 1.2 Types of Business Operations. 1.3 Management of Business Operations.	
2. Business Environment	2.1 Understanding Business Environment. 2.2 Internal and External Factors of Business Environment.	
3. Products and Services	3.1 Concept, Definition and Features of Product. 3.2 Classification of Products. 3.3 Concept, Definition and Features of Services. 3.4 Difference between Product and Service. 3.5 Meaning of Consumer, Identifying Consumer Needs, Classification of Consumers.	
4. Types of Organisation	4.1 Meaning and Definition of Organisation. 4.2 Characteristics and Significance of Organisation. 4.3 Types of Organisation.	
5. Formation of Partnership Firm and Joint Stock Company	5.1 Introduction to Partnership Firm. 5.2 Steps in Formation of a Partnership Firm. 5.3 Meaning, Definition and Characteristics of Joint Stock Company. 5.4 Types of Companies. 5.5 Formation of a Joint Stock Company.	
6. Business Correspondence	6.1 Meaning and Significance of Business Correspondence. 6.2 Rules of Good Business Communication. 6.3 Principles of Business Correspondence. 6.4 Forms and Types of Common Business Letters.	
7. Functional Areas of Management	7.1 Production Management. 7.2 Financial Management. 7.3 Marketing Management. 7.4 Human Resource Management. 7.5 Information Technology.	
8. Organisational Behaviour	8.1 Meaning, Definition and Importance of Organisational Behaviour. 8.2 Characteristics of Organisational Behaviour. 8.3 Groups, formation of groups and group dynamics.	

PRACTICAL

Marks: 30

1. Visit nearby business enterprises / companies and prepare a report on the following: **10**
 - a) Nature and Type of business being run by them.
 - b) Products and Services provided by them.
2. Role play on understanding the concept of Formal and Informal Communication. **10**
3. Viva **10**

LIST OF EQUIPMENTS AND SOFTWARE

1. Computers.
2. Printers.
3. Software like MS-Excel etc.
4. Computer Stationery.
5. Smart Boards to make the subject more interesting.
6. LCD Projector and Screen.

FOOD NUTRITION & DIETERICS (834)

Job Role: (Assistant Dietician)

SCHEME OF UNITS

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CLASS XI (2018-19)

	Units	No. of Periods for Theory and Practical 260	Max. Marks for Theory and Practical100
Part A	Employability Skills		
	Unit 1: Communication Skills-III	20	10
	Unit 2: Self-Management Skills-III	15	
	Unit 3: Information and Communication Technology Skills-III	10	
	Unit 4: Entrepreneurial Skills-III	25	
	Unit 5: Green Skills-III	10	
	Total	80	
Part B	Vocational Skills		
	Unit 1: Food and Nutrition: Basic Concepts		60
	Unit 2: Nutrition through the Life Cycle		
	Unit 3: Public Health and Nutrition: Basic Concept		
	Unit 4: Public Health and Nutrition Disorders		
	Unit 5: Public Health and Nutrition: Programmes and Policies		
	Unit 6: Nutrition Education, Communication and Behaviour Change		
	Total	160	60
Part C	Practical Work		
	Practical Examination	06	10
	Written Test	01	05
	Viva Voce	03	05
	Total	10	20
Part D	Project Work/field Visit		
	Practical File/Student Portfolio	10	10
	Total	10	10
	Grand Total	260	100

CLASS XI (2018-19)
FOOD NUTRITION & DIETERICS (834)

Part A - Employability Skills (REF. PAGE NO.- 05)

Part B–Vocational Skills

(Marks 60)

Unit 1: Food and Nutrition: Basic Concepts

Marks 15

- Food, Nutrition, Health, Fitness, Primary Health Care and Nutritional Status (Definition, Interrelationship in maintaining good health and well being)
- Food (Functions and Constituents of food –Nutrient and Food Groups : Basic concepts)
- Nutrients: Functions, Sources, Digestion, Absorption, Utilization and Requirements
- Recommended Dietary allowances and RDA for Indians (ICMR 2010) and their uses in planning diets.
- Concepts of meal planning, factors affecting meal planning, and Balanced diet (concept and guidelines in planning balanced diets)

Unit 2: Nutrition through the Life Cycle

Marks 15

- **Nutrition during Infancy (0-1years) and Preschool years (1-6 years):** Infancy, preschool period (critical from Growth, development view point, nutrient requirements- Infant and Young \Child Feeding practices, planning balanced diet for infants, preschoolers and special considerations for feeding young children.
- **Nutrition during Childhood and Adolescent:** Growth, Development, Nutrient needs, meeting nutrient needs through planning balanced diets, packed lunches factors influencing food and nutrient needs during adolescence (peer pressure, body image, media, stress, fasting)
- **Nutrition during Adulthood and Old Age:** Factors influencing nutrient requirements (age, gender, activity level-sedentary, moderate, heavy) Nutrient needs (RDA) and meeting requirement by planning balanced diets.
- **Nutrition during pregnancy and lactation:** Understanding why pregnancy and lactation are critical from nutritional point of view, recommended dietary allowances and planning balanced diets. Special considerations in pregnancy-nausea, vomiting, heart burn, constipation)

Unit 3: Public Health and Nutrition: Basic Concept

Marks 10

- Human Development Index (HDI), Sustainable Developmental Goals (SDG) : Basic Concepts
- Malnutrition (Undernutrition/Overnutrition): Concept/definition, causes (conceptual framework by UNICEF), consequences
- Methods for assessment of nutritional status (Direct methods –Anthropometry, Biochemical, Clinical, Dietary survey: Basic concept)

Unit 4: Public Health and Nutrition Disorders

Marks 10

- Major Deficiency Disorders: (PEM in the context of underweight, stunting, wasting, SAM; Nutritional Anemia with special reference to Iron Deficiency Anemia; Vitamin A Deficiency (Exophthalmia); Iodine Deficiency Disorders; Zinc deficiency: Prevalence, Causes, Consequences and its control.
- Other Nutritional Problems: Vitamin B complex deficiencies, vitamin C deficiency, Vitamin D deficiencies.
- Overweight/Obesity: Definition/Classification (WHO), Causes and Consequences.
- Non Communicable Diseases (Diabetes, CVD, cancer): Concept, Prevalence, Causes (Behavioural) and Consequences

Unit 5: Public Health and Nutrition: Programmes and Policies

Marks 5

- National program for welfare of women & Children :objectives, beneficiaries, functions/components) (ICDS, Midday meals)
- Programmes for welfare of Adolescent girls and Women (Rashtriya Kishore SwasthyaKaryakram (RKSK),Rajiv Gandhi Scheme for Empowerment of Adolescent Girls (SABLA), Indira Gandhi Maitritva Sahyog Yogna (IGMSY)

Unit 6: Nutrition Education, Communication and Behaviour Change

Marks 5

- Information, Education and Communication (IEC) for Behaviour Change: Definition, Nutrition Education: Need, Scope and Importance
- Process of nutrition education communication
- Nutrition Communication: Media and Multi-Media combinations: Types (Interpersonal communication: Individual and group approach; Mass Media, Traditional Media)

CLASS XI (2018 –19)

PRACTICAL

(Marks 30)

1. Identify and selection of rich sources of nutrients (Protein, Iron, Calcium, Vitamin A, Fat, Vitamin C)
2. Study of physical self with reference to assessment of nutritional status:
 - a) Age, height, weight, MUAC and compare with Standard/References
 - b) Observation of clinical signs / symptoms specific to good health Wellbeing
 - c) Record own diet for a day using 24 hour recall
 - d) Evaluate qualitatively for adequacy using Food groups and how to improve the same
 - e) Record Food practices including food taboos, fasting and special food preparation for adolescent, pregnant/lactating women.
 - f) Plan and design supplementary/complementary foods for infants and supplementary foods for preschoolers, highlighting their nutrient contribution.
 - g) Preparation of different healthy snacks for an adolescent suitable in her/his context
 - h) Study self with reference to physical activity (24 hours).
3. Collect five nutrition/health/hygiene messages from print and electronic media which have influenced one self.
4. Plan and prepare any one print/traditional/electronic media/approach you would use to disseminate nutrition/health/hygiene message to the community members.
4. Visit to any one programme/ institution (Govt. /NGO) for children/maternal nutrition and health well being (ICDS, MDM primary health care.); observation of activities in the programme and report writing.

MASS MEDIA STUDIES (835)

Job Role: (Media Assistant)

SCHEME OF UNITS

This course is a planned sequence of instructions consisting of Units meant for developing employability and vocational competencies of students of Class XI opting for vocational subject along with general education subjects. The unit-wise distribution of hours and marks for Class XI is as follows:

CLASS XI (2018-19)

	Units	No. of Periods for Theory and Practical 260	Max. Marks for Theory and Practical 100
Part A	Employability Skills		
	Unit 1: Communication Skills-III	20	10
	Unit 2: Self-Management Skills-III	15	
	Unit 3: Information and Communication Technology Skills-III	10	
	Unit 4: Entrepreneurial Skills-III	25	
	Unit 5: Green Skills-III	10	
	Total	80	10
Part B	Vocational Skills		
	Unit 1: Introduction of Mass Communication		20
	Unit 2: Evolution of the Media		10
	Unit 3: Understanding Media		10
	Unit 4: Preproduction Skills		20
	Total	160	60
Part C	Practical Work		
	Practical Examination	07	15
	Viva Voce	03	05
	Total	10	20
Part D	Project Work/field Visit/Pre-Production Skills		
	Practical File/Student Portfolio	10	10
	Total	10	10
	Grand Total	260	100

CLASS XI (2018-19)
Mass Media Studies (835)

Part A - Employability Skills (REF. PAGE NO. - 05)

Part B–Vocational Skills

Rationale

In the last two decades changes of phenomenal proportion have occurred in the field of Mass Media Studies. Mass Media has taken a quantum leap forward in terms of scale content and convergence. The media experience is an important part of globalization and civil society. The media has become an indispensable part of life at the national and local level. It has become an important factor in shaping young minds.

Objectives

Introduction to the comprehensive understanding of the five principles of Mass Media viz, Film, TV, Print, Radio and New Media

Introduction to the evolution of Mass Media

To understand how the content and presentation of mass media shapes our thoughts, vision, ethics and action

Analysis of the ways in which content is created in media

To understand creative and technical processes involved in newsprint, radio, television production, filmmaking and the internet

Introduction to the organization of media and entertainment industries - the financial and commercial aspects.

To delineate the roles and responsibilities of creative, technical and administrative people in media to familiarize with the career options in media and entertainment industry

to analyze the vital importance of mass media in the functioning of a secular, liberal, democracy like India

To understand the convergence of mass media as the futuristic trend opening up more and more exciting career and creative opportunities

UNIT-I: INTRODUCTION TO MASS COMMUNICATION

- Definition and functions of Mass Media and Mass Communication
- Aspects of Mass Communication
- Barriers to Communication

UNIT-II: EVOLUTION OF THE MEDIA

Evolution of Cinema

- Hindi Cinema
 - DG Phalke and silent era
 - Coming of sound, Studio era, Post-Independence era
- Satyajit Ray and non-mainstream cinema

Evolution of Television

- Doordarshan in the first phase of local stations and black and white transmission

Site Experiment

- Colour television, AASUAD 1982-Satellite Transmission (INSAT)
- Evolution of Print media
- Development of print journalism in India
- **Evolution of radio**
- Pre and post-independence development of radio in India
- **Evolution of new media**
- Evolution of the internet in India

UNIT-III: UNDERSTANDING MEDIA

Chapter 1: Media Literacy

- Introduction of Media Literacy
- Introduction to Mass Media
- Audience Theories
- Media Ownership
- Media Representation
- Media and Violence

Chapter 2: Analysis of Films

- The concept of miseen scene
- Film Analysis
 - Short film-fiction(5)
 - Short film-nonfiction
 - (5)
 - OR
 - Feature film

Chapter 3: Analysis of TV Programmes

- The concept of a soap opera - Daily soap, Weekly soap
- Genres of Soap Opera, primary audience of each genre
- The Segmented nature of the audience
- Gaze of the audience, concept of a flow, continuous interruption
- Culture of Film based programmes
- Culture of Music based programmes
- Educational TV, non-fiction on TV

Chapter4: Content Analysis of Radio Programmes

News - the format, the language, frequency

Talks, magazine programmes-unidirectional nature, feedback with a time phase difference
Dramas - the unique nature of radio plays

Interactive programmes - phone in, live interaction, music, experiences, memories as content of these programmes

Chapter 5: Content Analysis of Newspapers and Periodicals

Newspapers -

The Macro composition of a daily-various sections like the front page, edit page, sports page, business page.

The Micro composition of a daily-proportion of visual and text, language, highlighting.

Periodicals -

The Macro composition of a periodical - various sections like the cover page, cover story, features, columns, business page.

The Micro composition of a periodical - proportion of visual and text, language, highlighting.

UNIT-IV: Pre-Production Skills

Understanding Fiction

- Story as a self content world
- Story as a subjective experience
- Content of a story
 - Theme/subject
 - Plot, time and space
 - Characters
- Techniques of story telling
 - Description
 - Dialogue
 - View point

Pre-Production Skills (Project)

- Fiction
- Researcher
- Script
- Storyboard
- Nonfiction

Portfolio Assessment.

LIBRARY AND INFORMATION SCIENCES (836)

Job Role: (Library Assistant)

SCHEME OF UNITS

This course is a planned sequence of instructions consisting of Units meant for developing employability and vocational competencies of students of Class XI opting for vocational subject along with general education subjects. The unit-wise distribution of hours and marks for Class XI is as follows:

CLASS XI (2018-19)

	Units	No. of Periods for Theory and Practical 260	Max. Marks for Theory and Practical 100
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	Unit 2: Self-Management Skills-III	15	
	Unit 3: Information and Communication Technology Skills-III	10	
	Unit 4: Entrepreneurial Skills-III	25	
	Unit 5: Green Skills-III	10	
	Total	80	
Part B	Vocational Skills		
	Unit 1: Library, Information and Society –Role and its implications		15
	Unit 2: Organization of Library Resources: Basics		15
	Unit 3: Reference and Information Sources		15
	Unit 4: Computer Applications in Libraries: Basics		15
	Total	160	60
Part C	Practical Work		
	Practical Examination	07	15
	Viva Voce	03	05
	Total	10	20
Part D	Project Work/field Visit		
	Practical File/Student Portfolio	10	10
	Total	10	10
	Grand Total	260	100

CLASS XI (2018-19)
LIBRARY AND INFORMATION SCIENCES (836)

Part A - Employability Skills (REF. PAGE NO.- 05)

Part B–Vocational Skills

Introduction:

Library & Information Science Course at Senior Secondary level will fulfill the requirement of developing necessary skills, in learners to identify, locate, evaluate and use the required information efficiently. One of the important aspects of the curriculum is to improve the education system for Library and Information Science at school level which may be equivalent to Certificate/ Diploma in Library and Information Science.

Objectives:

The objectives of the course at senior secondary level are as follows:

To develop among the students:

- The basic understanding of theory and practice of Library & Information Science;
- Knowledge and skill to pursue the subject for higher education in future; and
- Basic skill to work as Semi -professional in a Library, which may be considered at par with the diploma course in LIS subject.

Class XI

Chapter-1: Library, Information and Society –Role and its implications

Objective: the objective is to familiarize the students with the libraries, their types and their role in society. This chapter is subdivided into the following units:

Units -1: Library, Information and Society: Concepts

- Definition, Objectives, Purpose and Role of Library in the development of modern Society
- Concept of Trinity: Documents, Staff and users and their inter relationships.

Units -2A: Types of Libraries and their role:

- National Library
- Academic Libraries
- Special Libraries
- Public Libraries

Units -2B: Changing formats of libraries: Digital, Virtual and Hybrid

Unit-3: Five Laws of Library Science and their implications.

Chapter-2: Organization of Library Resources: Basics

Objective: The objective is to provide the basic concept of Library Classification and Library Cataloguing. This chapter is subdivided into the following units:

Unit-1: Library Classification(Theory)

- Need, Purpose and Types
- Concept of Main Classes
- APUPA Pattern for arrangement of documents
- Salient features of major schemes of Library Classification:
- Dewey Decimal Classification (DDC) – Latest Edition
- Colon Classification (CC) – Latest Edition

Unit 2: Library Cataloguing(Theory)

- Need, Purpose and Importance
- Items of information required for cataloguing in a document. (Book and Non Book material)
- Salient features of Cataloguing Codes:
 - Anglo American Cataloguing Rules (latest edition.)
 - Classified Catalogue Code (latest edition.)
- Forms of Library Catalogue
 - Physical Forms of Catalogue
 - Online Public Access Catalogue (OPAC)

Chapter-3: Reference and Information Sources

Objective: The objective is to provide an understanding of various Reference and Information Sources and the process to find out information from them. This chapter is divided into the following units:

Unit -1: Reference and Information Sources

- Definition, Need
- Types: Primary, Secondary and Tertiary

Unit -2: Categories of Reference and Information Sources: Description and Scope

- Encyclopedias
- Language Dictionaries
- Biographical Sources
- Atlases
- Year Books
- Directories
- Bibliographical tools

Chapter-4: Computer Applications in Libraries: Basics

Objective: The objective is to provide the concept / knowledge of computers and its applications in the field of Library and Information Service. The chapter is divided into following units:

Unit – 1: Computer Hardware for a Library: Concepts

- Desktop Computers, Server and their specifications
- Printers and their types
- Scanners
- Barcode technology
- RFID technology
- Modem, Wi-fi Modem
- Switches
- Router

Unit -2: Library Automation: Concepts and Applications

- Definition
- Need, Purpose and Importance

Unit 3 : Use of Web Based Communication systems

- Internet, Intranet, Search engines, E-mail, Database.

PRACTICAL WORK FOR CLASS XI

Practical work for class XI includes the following

- Library Classification (Practice) -10
- Library Cataloguing (Practice) -10
- Educational Tour to different types of Libraries and Documentation Centres -10
- Library summer training for one month(summer training) - work integrated learning.

Note: It is suggest that the practical work may include simple illustrative examples in the relevant areas.

- a) For example, in Library Classification, the purpose will be to understand the representation of a subject of Main Class in a Scheme of Classification, viz. namely DDC and colon classification.
- b) Also, in Library Cataloguing, the practical work should include to develop an understanding of the basic components of a book used for cataloguing purpose. It should also include training in preparing the Main Entry and Added Entries according to AACR-II.
- c) The Tour should preferably be a local tour to a well-organized Library. The effort should be to make the student understand the essentials of Library functions under proper guidance. The Tour should be organized by the school in consultation with the Head/ In-charge of the concerned Library. The students should submit a Tour Report to the teacher for evaluation.

Note: The student should be exposed to basic practice in the above fields.

Practical work in Classification should include classification of documents with Main Class and Subdivisions according to DDC. Cataloguing of Main Entry and Added Entries of Simple Books according to AACR II

Practical work in Computer Applications should include formulation of a simple query for Search and use of computers for use of internet and handling of any one Library Automation Software.

Evaluation Scheme

Minimum Qualification for Teachers

Master's degree in Library & Information Science (M.L.I. Sc.) from a recognized University.

FASHION STUDIES (837)

Job Role: (Assistant Fashion Designer)

SCHEME OF UNITS

This course is a planned sequence of instructions consisting of Units meant for developing employability and vocational competencies of students of Class XI opting for vocational subject along with general education subjects. The unit-wise distribution of hours and marks for Class XI is as follows:

CLASS XI (2018-19)

	Units	No. of Periods for Theory and Practical 260	Max. Marks for Theory and Practical 100
Part A	Employability Skills		
	Unit 1: Communication Skills-III	20	10
	Unit 2: Self-Management Skills-III	15	
	Unit 3: Information and Communication Technology Skills-III	10	
	Unit 4: Entrepreneurial Skills-III	25	
	Unit 5: Green Skills-III	10	
	Total	80	
Part B	Vocational Skills		
	Unit 1: Overview Of Fashion		60
	Unit 2: Introduction To Fabrics, Dyeing & Printing		
	Unit 3: Design Fundamentals		
	Unit 4: Materials Tools And Processes Of Product Making		
	Total	160	60
Part C	Practical Work		
	Practical Examination	06	10
	Written Test	01	05
	Viva Voce	03	05
	Total	10	20
Part D	Project Work/field Visit		
	Practical File/Student Portfolio	10	10
	Total	10	10
	Grand Total	260	100

FASHION STUDIES XI (2018-19)

FASHION STUDIES

(Code No. 837)

Part A - Employability Skills (REF. PAGE NO. - 05) - 10 MARKS

Part B–Vocational Skills

- 60 MARKS

Preamble:

Fashion is dynamic and ever changing. It is one of the most powerful forces in our lives. It influences every facet of our lifestyle at a particular period in time e.g. the clothes we wear, the music we listen, the food we eat, where we go for holiday or the car we drive in etc.

Fashion is a big business and key driver for several industries e.g. apparel, accessories, textiles, automobiles etc.

The purpose of the course 'Fashion Studies' is to tell the students about the fundamentals of fashion design. Fashion Design as a profession includes the entire process of designing and producing fashion apparels from the fibre and yarn stage to the finished product. The course will give an overview of fashion design and elaborate on different aspects like elements of design, history of fashion, fabrics, and understanding of the body, pattern development and garment construction.

COURSE STRUCTURE

CLASS XI (2018-19)

Chapters	Periods	Marks
Chapter-I Overview of Fashion	35	10
Chapter-II Introduction to Fabrics, Dyeing and Printing	65	15
Chapter–III Design Fundamentals	80	15
Chapter–IV Materials Tools and Processes of Product Making	60	20
	180+60 for practical	60+30 practical = 90

CONTENTS

CHAPTER 1: OVERVIEW OF FASHION

10 marks 35 periods

Objectives of the course

- i. To introduce students to Fashion Studies and provide an overview of fashion
- ii. To familiarize students with essential fashion terminology and theories
- iii. To provide information about fashion designers and brands
- iv. To clarify the roles of regulatory bodies and professionals in the garment industry

Learning outcomes

After completion of the unit, the students shall be able to do the following:

- i. Demonstrate their knowledge of fundamental aspects of fashion
- ii. Explain appropriate terminology and theories related to fashion
- iii. Explain the salient characteristics of fashion designers and brands
- iv. Explain the roles of regulatory bodies and fashion professionals in the garment industry

Content

- Understanding fashion: Introduction and definition
- Factors influencing fashion
- Key Concepts and Terminology
- Movement and Direction of fashion
- Consumers – Innovators, Motivators, Followers, Victims
- Fashion Forecasting
- Theories of fashion movement
- Salient characteristics of fashion designers and brands –
- International Trade in Fashion
- Fashion Regulatory Bodies in India
- Role of fashion professionals

CHAPTER II: INTRODUCTION TO FABRICS, DYEING & PRINTING marks

65 period 15

Objective of the course

- To introduce students to natural and manmade fibers
- To develop awareness of spinning, weaving, dyeing and printing

Learning outcome

After finishing the course, the students shall be able to do the following:

- Identify and differentiate fabric varieties

- Explain the various processes of fabric manufacturing, dyeing & printing

Course Content

- Textile fibers– natural and manmade
- Yarns
- Weaving
- Dyeing and printing

CHAPTER III: DESIGN FUNDAMENTALS **marks**

80 periods 15

Objective of the course

- To introduce the students to various aspects of design
- To develop familiarity with different Elements of Design and Principles of Design
- To develop familiarity with common design terminology
- To develop skills of visualization and communication using design principles

Learning outcome

After finishing the course, the students shall be able to do the following:

- Identify the Elements of Design
- Identify the Principles of Design
- Use appropriate design terminology
- Translate design concepts to design products

Course Content

- Meaning of design
- Basic Elements of Design – dot, line, shape and texture
- Color Theory – Hue, tint, shade, tone, color schemes
- Language and psychology of color
- Principles of Design – rhythm, balance, proportion, emphasis
- Silhouette and proportion in apparel

CHAPTER IV: MATERIALS TOOLS AND PROCESSES OF PRODUCT MAKING

60 periods 20 marks

Objective of the course

- To introduce students to the sewing machine
- To introduce students with home fashion product categories
- To introduce students to leather product categories

Learning outcome

After finishing the course, the students shall be able to do the following:

- Develop proficiency in the use of the sewing machine
- Differentiate between stitched and unstitched products
- Explain categories of leather products

Course Content

- Introduction to sewing machine - component parts and functions.
- Sewing tools , Safety rules and Sewing Aids
- Home Fashion Products
- Leather Fashion Products

PRACTICAL MANUAL

CLASS XI 2018-19

1. Relating fashion cycle theories to fashion trends
2. Influence of art on fashion design
3. Historical costumes as inspiration for Indian apparel design
4. Use of printed fabric for design
5. Burning test for fiber identification
6. Constructing basic weaves
7. Identification of printing techniques
8. Application of textile swatch to any product
9. Design sensitivity to determine the functionality of the product
10. Nature as inspiration for design
11. Application of color psychology to color schemes
12. Application of principles of design
13. Preparation of hand-stitched samples (e.g. tacking, hemming etc.)
14. Prepare samples of seams
15. Prepare samples of seam finishes
16. Prepare samples of gathers, pleats and tucks
17. Prepare Samples of Gathers, Pleats and Tucks

APPLIED MATHEMATICS (840)

Class –XI (2018-19)

1. COURSE OVERVIEW

COURSE TITLE: APPLIED MATHEMATICS

Learning objective and outcomes- Mathematical thinking is linked to subjects where mathematics can be productively applied. Studying applied mathematics will enhance learning and understanding of Physics, Chemistry, Economics, Accountancy and other Skill based subject etc. Through this course students will learn problem solving, reasoning and proving, reflecting, selecting tools and computational strategies, connecting, representing and communicating mathematical thinking.

2. SCHEME OF UNITS AND ASSESSMENT

CLASS XI			
	Unit	No. of Periods (in hour)	Marks
PART A	Theory		
	Unit 1: Sets, Relations And Functions	16	10
	Unit 2: Trigonometry And Vectors	18	10
	Unit 3: Algebra	20	18
	Unit 4: Linear Inequations And Coordinate Geometry	14	12
	Unit 5: Statistics And Commercial Mathematics	26	20
	Unit 6: Permutation, Combination, Binomial Theorem Probability	16	10
	Total	110	80
PART B	Practical Work		
	Project Work	12	08
	Practical Exam	18	12
	Total	30	20
	Total	140	100

3. UNIT CONTENTS

CLASS XI (2018-19)

APPLIED MATHEMATICS

Theory

Time: - 3 Hours

80 Marks

UNIT 1: SETS, RELATIONS AND FUNCTIONS

10 Marks

Sets and their representation, Empty set, Equal sets, Subset, Power Set Ordered pair, Cartesian product, Relation, Domain, Co domain, Range, Equivalence relation, One-One, Onto and Into functions Logarithm as a special function, Interval in which logarithm becomes one-one and onto, Laws of logarithm

UNIT 2: TRIGONOMETRY

10 Marks

Trigonometric functions in different quadrants, Trigonometric ratios of allied angles, Trigonometric ratios of sum and difference of 2 angles, Trigonometric ratios of multiple and sub multiple angles, Trigonometric Equations and solutions.

UNIT 3: ALGEBRA

18 Marks

1. Complex numbers-concept of i , Imaginary numbers, arithmetic operations on complex numbers (addition, subtraction, multiplication, division) Conjugate and modulus, Standard form $a+ib$ of a complex number, square root of a complex number, Representation of a complex number in geometric form, vector form, polar form
2. Quadratic equations: Solution of a quadratic equation with non real roots for real number coefficients and complex number as coefficient.
3. Arithmetic Progression- n th term and sum to n terms of an A.P, Arithmetic mean, Applications of A.P
4. Geometric Progression: n th term and sum to n terms of a G.P. Geometric mean, relation between $k=1kk$, $k=1kk^2$, $k=1kk^3$
5. Partial Fractions-Definition of polynomial fraction proper and improper fraction and definition of partial fraction.

UNIT 4: LINEAR INEQUATIONS AND COORDINATE GEOMETRY

12 Marks

1. Graphical solution of a linear Inequation in 2 variables, solution set for simultaneous linear in equation
2. Slope of a line, various forms of equations of a line-, point slope form, slope intercept form, two point form, intercept form and normal form, General Equation of a line.
3. Conic Sections-circle, parabola,. Standard equation of a circle and parabola

UNIT 5: STATISTICS AND COMMERCIAL MATHEMATICS

20 Marks

Measures of dispersion-Range, mean deviation from mean, Mean deviation from median for discrete frequency distribution and continuous frequency distribution Variance and standard deviation for discrete and continuous frequency distribution Demographic Statistics-Infant Mortality Rate, Crude Death Rate, Standardized Death Rate, Cost of Living Index Number, Wholesale Price Index Simple and Compound Interest, Profit, Loss, Discount and Percentage, Commission, Brokerage, Ratio Proportion and their properties, Insurance, Annuity

UNIT 6: PERMUTATION, COMBINATION, BINOMIAL THEOREM AND PROBABILITY

10 Marks

Fundamental Principle of Counting, Factorial $n!$, n_{pr} and n_{cr} and their relation. Statement of Binomial theorem for positive integral indices, general and middle term binomial expansion. Conditional Probability, Multiplication Theorem on Probability, Independent Events.

PRACTICALS

20 Marks

ASSIGNMENT (ANY 6)

12 Marks

1. Data analysis using Excel sheet
2. Demographic data analysis- CDR, STDR, CLI no. etc
3. Probability investigation sheet from online resource
4. Assignment on graphs and correlation to slope and different forms of equation of a line.
5. Venn diagram solution on Union, Intersection and complement of a set
6. Solving assignment of word problem using Venn diagrams(limited to 3 sets)
7. Graphing trigonometric functions
8. Identifying intervals where trigonometric functions are one-one.
9. Making insurance sheets

PROJECT- (SUGGESTED)

8 Marks

1. Application of coordinate system in real life
2. Visit to any Industrial unit to collect data and analyse it
3. Creating games using probability concept, adding constraints or enablers increasing win ability or making the game need more skills.
4. Analytical proofs in coordinate geometry
5. Power Point Presentation documenting investigation and research on any concept in the syllabus