

CARMEL COLLEGE (AUTONOMOUS), MALA
Department of Chemistry

Certificate Course

CCSM-01 SOLID WASTE MANAGEMENT

SYLLABUS FOR CERTIFICATE COURSE (30 hrs)

Module 01: Generation and characteristics of waste(3hours)

Sources, Types, composition, quantity, sampling and characteristics of waste, factors affecting generation of solid wastes.

Module 02: Waste collection, storage and transport(9 hours)

Collection and storage of municipal solid waste; Methods of collection - House to House collection - collection routes; on site storage methods-materials used for containers -Recycling and Reuse of waste -Need for transfer and transport; transfer station-selection of location, operation and maintenance; transportation Methods-manual, Mechanical methods with or without compaction, economy in transportation of waste, optimization of transportation routes.

Module 03: Waste processing techniques(6hours)

Processing techniques-biological and chemical conversion technologies – composting and its methods, Vermi-composting, mechanical composting, In vessel composting, incineration, pyrolysis, gasification.

Module 04: Disposal of Solid Waste(12hours)

Segregation, Volume reduction at source, recovery and recycle; dumping of solid waste-sanitary waste- sanitary landfills-site selection-design and operation of sanitary landfill - leachate and landfill gas management- landfill closure and environmental monitoring-landfill remediation; Municipal solid waste in Indian conditions, legal aspects of solid waste disposal, Plastic waste disposal.



Princy K.G.
Dr. PRINCY K.G.
ASSOCIATE PROFESSOR & HEAD
DEPT. OF CHEMISTRY
CARMEL COLLEGE, MALA

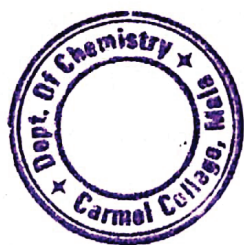
CARMEL COLLEGE (AUTONOMOUS), MALA
Department of Chemistry

Certificate Course –2022-23
CCSM-01-Solid Waste Management

TIME TABLE FOR CERTIFICATE COURSE

	I SATURDAY	III SATURDAY	IV SATURDAY
June	VF	VF	RKT
July	VF	VF	RKT
August	VF	VF	RKT
September	VF	VF	RKT
October	VF	VF	RKT

VF- Dr .Vidya Francis ; RKT- Dr. Roshini K Thumpakara.



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DEPARTMENT OF BOTANY

Add on course: MUSHROOM CULTIVATION- THE WAY TO AN ENTREPRENEUR

Programme Code - BOMC001

Total – 30 hours

Course - Syllabus

Objective of the certificate course

1. Provide the knowledge to identify edible and poisonous mushrooms
2. Provide hands on training for the preparation of bed for mushroom cultivation and spawn production
3. Give the students exposure to the experiences of experts and functioning mushroom farms
4. Help the students to learn a means of self employment and income generation

Expected learning outcome

1. Students will be able to identify edible types of mushroom
2. Gain the knowledge of cultivation of different types of edible mushrooms and spawn production
3. Learn a means of self-employment and income generation

Module: I Mushroom morphology (2 Hours):

Different parts of a typical mushroom & variations in mushroom morphology. Key to differentiate Edible from Poisonous mushrooms.

Module: II Biology of Mushrooms (2 Hours):

Button, Straw & Oyster- General morphology, distinguishing characteristics, spore germination and life cycle.

Module: III Nutrient Profile of Mushroom (1 Hour):

Protein, amino acids, calorific values, carbohydrates, fats, vitamins & minerals.

Module: IV Health benefits of Mushroom (1 Hour):

Antiviral value, antibacterial effect, antifungal effect, anti-tumour effect, haematological value cardiovascular & renal effect, in therapeutic diets, for aged persons & diabetes mellitus.

Module: V Common edible mushrooms (2 Hours):

Button mushroom (*Agaricus bisporus*), Milky mushroom (*Calocybe indica*), Oyster mushroom (*Pleurotus sajorcaju*) and paddy straw mushroom (*Volvariella volvcea*).

Module: VI Principles of mushroom cultivation (7 Hours):

Structure and construction of mushroom house. Sterilization of substrates. Spawn production - culture media preparation- production of pure culture, mother spawn, and multiplication of spawn. Composting technology, mushroom bed preparation. Spawning, spawn running, harvesting. Cultivation of oyster and paddy straw mushroom. Problems in cultivation - diseases, pests and nematodes, weed moulds and their management strategies.

Module: VII Post harvest technology (3 Hours):

Preservation of mushrooms - freezing, dry freezing, drying, canning, quality assurance and entrepreneurship. Value added products of mushrooms.

Module: VIII Training/ Workshop/ Field visit (12 Hours)

Sterilization and sanitation of mushroom houses, instruments and substrates. Preparation of mother culture, media preparation, inoculation, incubation and spawn production. Cultivation of oyster mushrooms using paddy straw/agricultural wastes. Different methods- efficient and economic methods for mass production and household production. Costing- production cost, breeding cost, supply chain system. Scope of new entrepreneur. Overview of Indian market and foreign market

References

1. Marimuthu, T. et al. (1991). Oster Mushroom. Department of Plant Pathology. Tamil Nadu Agricultural University, Coimbatore.
2. Nita Bhal. (2000). Handbook on Mushrooms. 2nd ed. Vol. I and II. Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi
3. Pandey R.K, S. K Ghosh, 1996. A Hand Book on Mushroom Cultivation. Emkey Publications.
4. Pathak, V. N. and Yadav, N. (1998). Mushroom Production and Processing Technology. Agrobios, Jodhpur.
5. Tewari Pankaj Kapoor, S. C. (1988). Mushroom Cultivation. Mittal Publication, New Delhi.
6. Tripathi, D.P. (2005) Mushroom Cultivation, Oxford & IBH Publishing Co. PVT.LTD, New Delhi.
7. V.N. Pathak, Nagendra Yadav and Maneesha Gaur, Mushroom Production and Processing Technology/ Vedams Ebooks Pvt Ltd., New Delhi (2000)

Faculty details: Liji T J, M.Sc., BEd; Guest Faculty and Entrepreneur

Mode of Assessment / Evaluation

1. Continuous Internal Assessment (CIA) by periodical class tests
2. Term End Exam(TEE).

Methods of evaluation

Distribution of marks	Total -100 marks
Attendance a 10% marks	10 marks
CIA – 15% marks	15 marks
TEE – 50% marks	50 marks
Project – 25% marks	25 marks
Total	100 marks
Grading	
Percentage of mark	Grade
80% and above	A
70% to 79%	B
60% to 69%	C
50% to 59%	D

Model Question Paper
CARMEL COLLEGE MALA
DEPARTMENT OF BOTANY

Add on Course- BOTMC001- Mushroom Cultivation- The way to an enterprenuer

TIME: 2Hrs

Max. Marks 50

SECTION A

(Answer any five questions. Each question carries 4 marks)

1. Different parts of a typical mushroom
2. Explain the nutritional value of mushroom
3. What are the edible mushroom
4. Explain spawn production
5. What are the diseases affected the mushroom cultivation
6. What are the value added products of mushroom
7. Explain the structure and construction of mushroom house **(5x4=20)**

SECTION B

(Answer any four questions. Each question carries 5 marks)

13. What are the health benefits of mushroom
14. Explain the general morphology of Button, Straw & Oyster mushroom
15. Explain the life cycle of mushroom
16. Explain the Composting technology, mushroom bed preparation
17. Explain the media preparation, inoculation, incubation and spawn production
18. Explain the sterilisation and sanitization of mushroom culture **(4x5=20)**

SECTION C

(Answer any one. Each question carries 10 marks)

19. Explain the different methods of mushroom cultivation
20. Explain the various methods of mushroom preservation **(1x10=10)**

**CENTRE FOR DEVELOPMENT OF IMAGING TECHNOLOGY
TECHNOLOGY EXTENSION DIVISION**

SYLLABUS

DIPLOMA IN COMPUTER APPLICATION (DCA)	
Scheme: 2022 Scheme Duration: 6 Months Eligibility: SSLC or Equivalent	
THEORY SUBJECTS	
DCA 101	Introduction to Information System
DCA 102	Networking and Internet
DCA 103	Office Automation Systems
DCA 104	Principles of Programming and Web Technologies
LAB SUBJECTS	
DCA 105	Lab I-Computer Basics and Office Automation
DCA 106	Lab II- Programming in C and Python & Web Application Development
ANNEXURE	
Assignments for Theory & Questions for Lab	

Detailed Syllabus(Theory)

DCA 101 - INTRODUCTION TO INFORMATION SYSTEM

Theory Hours - 50 Hrs

Module I - Computer Fundamentals (10Hrs)

Learning outcome

- Understanding of the concept and architecture of computers.
- How a computer system works?
- Learning the basic terminologies.

Topics

Introduction :- Fundamentals - Definition, Hardware, Software, Operating System, data, information etc; Functions and Characteristics; Applications of Computers; Capabilities and Limitations

Familiarise different generations of computer

Computer classifications :- Analogue / Digital / Hybrid, PC, Microcomputer, Minicomputer, Mainframe computer, Super Computer.

Components of a computer :- Input Unit ; Output Unit ; CPU ; Memory unit

Input devices :- Keyboard; Mouse; Scanner; Digital/ Web Camera; Touch screen; graphic tablet

Output Devices :- VDU; Printer; Audio Output devices; LCD Projector

Intelligent terminal and dumb terminal

Memory Unit ; Volatile and Non-Volatile memory ; Primary Memory ; Secondary Memory ; BIOS Memory ; Cache Memory ; Virtual memory ; SIMM ; DIMM ; Storage devices; online / offline storage.

Familiarisation of other hardware components :- SMPS ; Motherboard ; Video Cards - PCI, PCI Express, and AGP ; Multimedia Cards - Sound Cards, TV Tuner Cards and Capture Cards ; I/O Cards - SCSI, Serial, USB, and Parallel ; Communications Cards - NICs and Modems

Ports :- Characteristics and different types - Serial, Parallel, USB, Ethernet port etc

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Ports :- Characteristics and different types - Serial, Parallel, USB, Ethernet port etc

Configuring the Peripheral Devices ; methods for connecting peripherals to system - different types of cable connection, explain Bluetooth and Wi-Fi / IR, NFC connectivity

Data representation in computers :- Number System - Types, examples, Conversion rules ;

Coding system - ASCII, BCD, EBCDIC, ISCII, Parity Bit, etc.

Units :- Time Units - Milliseconds, Microseconds, Nanoseconds, Pico seconds ; storage units - Bit, Byte, Kilo Byte, Mega Byte, Giga Byte, Tera Byte, Peta Byte, Exa Byte, Nibble.

Module II - Basics of Information Technology (10Hrs)

Learning outcome

- Acknowledge the role of technologies in today's society
- To identify the basic hardware and software components of a computer and explore their functioning
- Learn about various operating systems

Topics

Introduction to IT - Role of IT in society - Advantages and Disadvantages, Characteristics and features of IT, Application areas - Science and Engineering, Education, Business and Commerce, Medicine and Entertainment - Advantages & Disadvantages of IT

Basics of Computer System - Generations & Peripheral devices - Hardware - Software - system software & application software-off the shelf and custom software-programming languages-compilers-interpreters- Operating systems: structure & functions - Types of Operating system: Batch processing OS, Mutitasking OS, Multiprocessing OS, Time sharing OS ,Real Time OS, Distributed OS, Network OS-Examples of OS: MS-DOS, MS-Windows, Linux Ubuntu, Apple Macintosh

Data and information Concepts -- Importance of data and information, Difference between data and information

Introduction to ITES (IT Enabled Services) - what are IT enabled services? Benefits and threats, ITES fields - BPO - GIS - Call Centers - Data Management Services - Medical Transcription - Data Digitization, Web services, Payroll management, Telemarketing

Topics

Information System :- Data, Information & System ; Information System; Dimensions of Information System - Organization, Management, IT ; Functions of Information System

Business Information Systems :- Role of Business Information Systems - Top, Middle, Bottom ;

Types of Business Information Systems - TPS, MIS, EIS, DSS, AI/Expert Systems

Management Information System(MIS) :- Objectives ; Components ; Functions ; Resources ; Characteristics; Terminologies and Applications

Enterprise System and Types :- ERP ; CRM ; SCM

Module V – Basics of Databases (10Hrs)

Learning outcome

- Knowledge about data processing, data management systems, relational data model, familiarize MS Access, SQL and importing of Excel files.

Topics

Database Management System - Introduction; Data Processing Vs. Data Management Systems ; Database Concepts; Characteristics of Database; Types of Database System; Advantages and Disadvantages of a DBMS ; Database Administrators and Database Users

Creating database using MS Access - Importing Excel files to MS Access; Using Forms-creating a form and editing data using form

Relational Model Concepts - Data Definition Language (DDL) ; Data Manipulation Language (DML); Introduction to SQL; SQL commands; Importing Excel files to SQL; Familiarise MySQL, NoSQL and Oracle

DCA 102 - NETWORKING AND INTERNET

Theory Hours - 50 Hrs

Module I - Computer Networks (10Hrs)

Learning outcome

- Knowledge about networking technologies and types of networks, devices used, security devices, topologies, nodes, mobile communication and latest technologies

Topics

Introduction to Computer Networks - Evolution of Networking, Wired & Wireless Networking

Types of Networks - LAN (Local Area Network) , MAN (Metropolitan Area Network) , WAN (Wide Area Network) , PAN (Personal Area Network)

Network Devices - Hub, Switch, Router, Bridge, Gateway; Modem, Repeater, Access Point; Modem, Ethernet Card, RJ11, RJ45

Network Security Devices - Active Devices, Passive Devices, Preventative Devices, Unified Threat Management (UTM), Firewalls

Integrated Services Digital Network (ISDN)

Networking Topologies - Bus Topology, Star Topology, Ring Topology, Mesh Topology, Tree or Hybrid Topology

Nodes in a Networked Communication - Types of Nodes, MAC Address, IP Address, IPv4, IPv6

Connecting to Internet - Connecting the computer to the Internet

Types of connectivity - Dial-up; Wired broadband connectivity - ISDN, Cable Internet, DSL, Leased Line, FTTH; Wireless broadband connectivity - Mobile broadband, Wi-MAX, Satellite broadband

Internet Access sharing methods - LAN, Wi-Fi, Li-Fi

Services on Internet - World Wide Web (WWW), Browser, Web browsing, Search Engines, E-mail, Social media; Various stages of Data Transfer from Server to Client; Domain Name; Resolution; Mobile communication;

Generations in mobile communication - First Generation, Second Generation - GSM, GPRS, EDGE, CDMA, Third Generation - WCDMA, Fourth Generation, Fifth Generation; Mobile communication services- SMS, MMS, GPS, Smart Cards

Mobile Operating System

Latest Technologies - Data Analysis; Cloud Computing; Internet of Things & Edge Computing; Block Chain; Artificial Intelligence & Machine Learning; Augmented Reality & Virtual Reality; Robotic Process Automation (RPA); 5G Spectrum

Module II - Introduction to Internet (10Hrs)

Learning outcome

- Understanding about internet
- Explore different kinds of information available on the Internet, surfing safely and Searching information on the Internet
- Importance of online conference tools in daily life and its usage
- Understand e-learning concept of e-learning and its importance in the modern world.

Topics

Concepts of Internet - Basics of internet connectivity -Applications of Internet -tools and troubleshooting- Intranet and extranet -Internet Services-communication services- Information retrieval services-Web services-World Wide Web-email- Web Browsing softwares - Search Engines - URL - Web Protocols- Domain name - IP Address - Surfing the web

Basics of electronic mail -concept, technology behind email, different email providers, Getting an email account - Sending and receiving emails - mail operations -email folders- applications of Emails-web mail-client mail-email security- email client(eg-outlook)

Online/Web/Mobile Conferences & Tools - introduction towards Audio and Video conferencing - Advantages & Disadvantages -Popular Video conferencing tools

eLearning - What is eLearning, Features and uses, Different eLearning platforms in India, LMS

Learning outcome

- Understand the concept of e-government and the associated benefits and drawbacks
- Gather knowledge on various National and State e-governance initiatives.
- Recognize the benefits and limitations of e-commerce
- Understand major e-commerce business models and their impact in the society

Topics

What is E-Governance, objective, Scope, Benefits and outcomes of e-Governance - **Pillars of e-Governance:** People - Process - Technology - Resources, **Types of interactions in e-Governance:** Government to Citizen (G2C)- Government to Businesses (G2B)-Government to Government (G2G)-Government to Employees (G2E), **Phases of e-Governance Maturity Model** (Phase I: Information, Phase II: Interaction, Phase III- Transaction - Phase IV : Transformation)

e-Governance Infrastructures: Common Service Centre (CSC) - State Wide Area Network (SWAN) - National e-Governance Service Delivery Gateway (NSDG) - State Data Center (SDC)

Challenges to e-Governance, Security approaches to e-Governance

National level e-Governance initiative - Digital India initiative, Major services and projects implemented by union govt and state govt.

e-Commerce (Internet Commerce or electronic commerce) - What is e-Commerce - Features and Scope of e-Commerce - Traditional Commerce vs e-Commerce - e-Commerce Models (B2C, B2B, C2C, C2B, B2G - Benefits and limitations of e-Commerce - Major e-Commerce websites and its usage

Learning outcome

- Understand mobile computing, its principles and theories.
- List applications in different domains that mobile computing offers to the public, employees, and businesses.
- Understand the various options of payments - online & mobile payment, smart cards etc

Topics

Mobile Computing - Introduction and Concepts- mobile communication, mobile hardware and software, Mobile Device Operating Systems – Android, iOS, - Generations of Mobile Communication Technologies

e-Commerce & m-Commerce System Security

Familiarisation of mobile applications - Introduction to mobile applications-types of mobile applications-native web and hybrid, Different categories of mobile applications - cooking application - Education applications - Communication applications - Shopping application etc

Digital economy - Identify the methods of payments on the internet - e-Cash , e-cheques , credit cards on the Internet

Electronic Payment Systems - Need and uses of Electronic Payment System- Electronic Fund Transfer-one time password (OTP)-PIN and its importance-internet banking - Credit card - Debit card - UPI, Point of Sale(POS), Security Issues

Mobile Payment System - Different payment types: Mobile Wallets, QR code payments, Payment links, SMS payments, Benefits of Mobile Payment

Security issues in digital payment system ,Online banking frauds

Do's and Don'ts in electronic/mobile payment system

Learning outcome

- Understand various social media technologies and their importance in the day to day life.
- Benefits of social media in digital marketing and Education,
- Awareness on various cybercrimes and cyber security,
- Understand copyright and intellectual property rights

Topics

Social Media – Why & what Social Media – Present and Past - Social media Platforms and applications – Usage in business & Education- social media etiquette

Social media and digital marketing

Information Security – Concepts of Security - two factor authentication(2FA) - Biometric authentication methods - Data Encryption and Decryption- Cryptography

Awareness about cyber crime and Cyber security

Cyber crime - What is cyber crime, Understand the term computer Virus and Malware, Email spamming, Email spoofing, Email bombing, Forgery, Hacking, Cyber Stalking or Bullying, Web jacking, Phishing, Pornography, Cookies and threats

Cyber security - Basic concepts - Elements of security - Data security and protection from cyber attack - Antivirus - password, Concept of Firewall, Digital signature - uses and working

Cyber Laws - An Overview & Scope of Cyber Law - Copyright, Trademarks and Software Patenting - Data Privacy & Confidentiality - Cyber laws in India - IT ACT-objectives, features, offences

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Sharing A Presentation - Convert presentation to PDF ; Convert presentation to Video ; Create an Image from presentation ; Print a PowerPoint Presentation; Broadcast PowerPoint presentation

Open Office Impress - Impress characteristics; Start Impress, Presentation Wizard; Drawing, Zoom, Lines, Rectangle, Freeform line filled, Polygon, Convert objects, Curves; Select objects, Copy objects, Delete objects, Flip objects, Arrange objects, Group objects; Export drawing, Area Fills, Color, Gradient, Hatching, Bitmaps, Transfer settings, Images, Insert images, Filters, Graphics mode, Color, Transparency, Crop, Gallery, Glue points, Size and position, Rotate, Alignment, Text, Text to polygon, Text boxes, Slides, Insert, Clone, Rename, Delete slides; Format, Character, Paragraph, Textbox format, Slide effects, Slide transitions, Sounds ; Automatic transition, Manual transition, Hyperlinks, From text, From images, Bitmaps

Module IV- Basics of Accounting & Billing Systems (10Hrs)

Learning outcome

- After going this module one should get an idea about basic accounting components and can familiarize billing system

Topics

Basics of Accounting - Accounting; Business Transaction; Purchase; Sales; Purchase return (Outward invoice); Sales return (Inward invoice); Assets; Liabilities; Capital; Debtors; Creditor; Debit; Credit; Drawings; Receipts; Account; Ledger; Journal entries; Trial balance; Profit; Profit & loss account; Balance Sheet

Billing System - Introduction; Need of Billing System; Features of Billing System; GST Billing; Billing using MS-Excel

Module V - Printing Technologies & Multimedia (10Hrs)

Learning outcome

- Knowledge about modern printing technologies, DTP, familiarize with image tools and Multimedia techniques

Topics

Printing Technologies - Introduction to various modern Printing processes; Printing Technology using DTP; Advantages of DTP; Introduction to DTP software; Use of various

tools in MS Paint, GIMP; Importing Graphics; Image Compression; Electronic Image file formats- BMP, JPEG, TIFF, GIF & PNG ; Topographic design; Vector drawing techniques; Portable Document Format (PDF)

Multimedia - Definition; Multimedia systems, elements & applications; Multimedia system architecture; Digital media and Hyper media; Multimedia file formats & standards; Types and methods of compression and decompression; Multimedia I/O Technologies; Adding text, integrating audio with Video; Image enhancing designing techniques; Image authoring and editing tools

DCA 104 - PRINCIPLES OF PROGRAMMING AND WEB TECHNOLOGIES

Theory Hours - 50 Hrs

Module I - Basics of Programming (10Hrs)

Learning outcome

- Understand the methodology to solve the problem, algorithm, flowchart & coding
- To identify programming language classifications.
- To Learn Object oriented programming concepts.
- Understand the features & architecture of Microprocessor generations and types.

Topics

Algorithms - Properties of a good algorithm - Flowchart - Problem-solving using Computer - Introduction to Programming Languages - Machine Language - Assembly Language - High Level Programming Languages - Procedure Orientation and Object Orientation - Object Orientation concepts - Compiler and interpreter - Introduction to Microprocessor & Microcontroller Programming Operation Cycle (Fetch, Decode, Execute, Store)

Module II- Introduction to C Programming (10Hrs)

Learning outcome

- To provide an overview of working principles of C language.
- Construct, compile, link & execute the C programs
- To learn and implement C language programming techniques.

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Data and information Concepts -- Importance of data and information, Difference between data and information

Introduction to ITES (IT Enabled Services) - what are IT enabled services? Benefits and threats, ITES fields - BPO - GIS - Call Centers - Data Management Services - Medical Transcription - Data Digitization, Web services, Payroll management, Telemarketing

Module III - Basics of Software (10Hrs)

Learning outcome

- Distinguish System software and Application software.
- Commonly used operating systems.
- Identify the primary functions of Operating Systems.
- Installation and configuration of software.

Topics

Types of Software :- Software - System software , Application software, Utility Software ; Demo ware ; Shareware ; Freeware ; Firmware ; Free and Open Source Software.

Operating Systems :- Functions, Types - Batch Processing , Single User, Multi User, Multiprogramming, Multi-Tasking (Multiprocessing); Familiarise Multithreading

Booting and Shutdown of Computers ; BIOS ; POST ; Master Boot Record(MBR)

Introduction to old versions of Windows OS

Detailed study of Windows :- Overview ; GUI basics (Desktop, taskbar, icons, desktop background management) ; Navigation (Start menu, File explorer) ; Accessories ; Control Panel ; User Account management ; storage management ; file and folder management ; keyboard shortcuts ; data backup

Familiarise Ubuntu Linux :- Introduction ; History ; Versions ; basics

Familiarising Command mode :- Windows (DOS) ; Linux (Terminal)

Familiarize other operating systems :- UNIX ; Apple Macintosh

Linux commands

Computer Virus :- Introduction ; Mechanism of Virus ; How a virus spreads ; How is virus named ; A few prominent viruses ; Types of Computer Virus ; Related Concepts - Antivirus programs - Norton antivirus program

Module IV - Basics of Information System (10Hrs)

Learning outcome

- Knowledge about information system, its capabilities and uses with IT infrastructure in a business enterprise to achieve desired goals.

Topics

Information System :- Data, Information & System ; Information System; Dimensions of Information System - Organization, Management, IT ; Functions of Information System

Business Information Systems :- Role of Business Information Systems - Top, Middle, Bottom ;

Types of Business Information Systems - TPS, MIS, EIS, DSS, AI/Expert Systems

Management Information System(MIS) :- Objectives ; Components ; Functions ; Resources ; Characteristics; Terminologies and Applications

Enterprise System and Types :- ERP ; CRM ; SCM

Module V – Basics of Databases (10Hrs)

Learning outcome

- Knowledge about data processing, data management systems, relational data model, familiarize MS Access, SQL and importing of Excel files.

Topics

Database Management System - Introduction; Data Processing Vs. Data Management Systems ; Database Concepts; Characteristics of Database; Types of Database System; Advantages and Disadvantages of a DBMS ; Database Administrators and Database Users

Creating database using MS Access - Importing Excel files to MS Access; Using Forms-creating a form and editing data using form

Relational Model Concepts - Data Definition Language (DDL) ; Data Manipulation Language (DML); Introduction to SQL; SQL commands; Importing Excel files to SQL; Familiarise MySQL, NoSQL and Oracle

DCA 102 - NETWORKING AND INTERNET

Theory Hours - 50 Hrs

Module I - Computer Networks (10Hrs)

Learning outcome

- Knowledge about networking technologies and types of networks, devices used, security devices, topologies, nodes, mobile communication and latest technologies

Topics

Introduction to Computer Networks - Evolution of Networking, Wired & Wireless Networking

Types of Networks - LAN (Local Area Network) , MAN (Metropolitan Area Network) , WAN (Wide Area Network) , PAN (Personal Area Network)

Network Devices - Hub, Switch, Router, Bridge, Gateway; Modem, Repeater, Access Point; Modem, Ethernet Card, RJ11, RJ45

Network Security Devices - Active Devices, Passive Devices, Preventative Devices, Unified Threat Management (UTM), Firewalls

Integrated Services Digital Network (ISDN)

Networking Topologies - Bus Topology, Star Topology, Ring Topology, Mesh Topology, Tree or Hybrid Topology

Nodes in a Networked Communication - Types of Nodes, MAC Address, IP Address, IPv4, IPv6

Connecting to Internet - Connecting the computer to the Internet

Types of connectivity - Dial-up; Wired broadband connectivity - ISDN, Cable Internet, DSL, Leased Line, FTTH; Wireless broadband connectivity - Mobile broadband, Wi-MAX, Satellite broadband

Internet Access sharing methods - LAN, Wi-Fi, Li-Fi

Services on Internet - World Wide Web (WWW), Browser, Web browsing, Search Engines, E-mail, Social media; Various stages of Data Transfer from Server to Client; Domain Name; Resolution; Mobile communication;

Generations in mobile communication - First Generation, Second Generation - GSM, GPRS, EDGE, CDMA, Third Generation - WCDMA, Fourth Generation, Fifth Generation; Mobile communication services- SMS, MMS, GPS, Smart Cards

Mobile Operating System

Latest Technologies - Data Analysis; Cloud Computing; Internet of Things & Edge Computing; Block Chain; Artificial Intelligence & Machine Learning; Augmented Reality & Virtual Reality; Robotic Process Automation (RPA); 5G Spectrum

Module II - Introduction to Internet (10Hrs)

Learning outcome

- Understanding about internet
- Explore different kinds of information available on the Internet, surfing safely and Searching information on the Internet
- Importance of online conference tools in daily life and its usage
- Understand e-learning concept of e-learning and its importance in the modern world.

Topics

Concepts of Internet - Basics of internet connectivity -Applications of Internet -tools and troubleshooting- Intranet and extranet -Internet Services-communication services- Information retrieval services-Web services-World Wide Web-email- Web Browsing softwares - Search Engines - URL - Web Protocols- Domain name - IP Address - Surfing the web

Basics of electronic mail -concept, technology behind email, different email providers, Getting an email account - Sending and receiving emails - mail operations -email folders- applications of Emails-web mail-client mail-email security- email client(eg-outlook)

Online/Web/Mobile Conferences & Tools - introduction towards Audio and Video conferencing - Advantages & Disadvantages -Popular Video conferencing tools

eLearning - What is eLearning, Features and uses, Different eLearning platforms in India, LMS

Learning outcome

- Understand the concept of e-government and the associated benefits and drawbacks
- Gather knowledge on various National and State e-governance initiatives.
- Recognize the benefits and limitations of e-commerce
- Understand major e-commerce business models and their impact in the society

Topics

What is E-Governance, objective, Scope, Benefits and outcomes of e-Governance - **Pillars of e-Governance:** People - Process - Technology - Resources, **Types of interactions in e-Governance:** Government to Citizen (G2C)- Government to Businesses (G2B)-Government to Government (G2G)-Government to Employees (G2E), **Phases of e-Governance Maturity Model** (Phase I: Information, Phase II: Interaction, Phase III- Transaction - Phase IV : Transformation)

e-Governance Infrastructures: Common Service Centre (CSC) - State Wide Area Network (SWAN) - National e-Governance Service Delivery Gateway (NSDG) - State Data Center (SDC)

Challenges to e-Governance, Security approaches to e-Governance

National level e-Governance initiative - Digital India initiative, Major services and projects implemented by union govt and state govt.

e-Commerce (Internet Commerce or electronic commerce) - What is e-Commerce - Features and Scope of e-Commerce - Traditional Commerce vs e-Commerce - e-Commerce Models (B2C, B2B, C2C, C2B, B2G - Benefits and limitations of e-Commerce - Major e-Commerce websites and its usage

Learning outcome

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Learning outcome

- Understand mobile computing, its principles and theories.
- List applications in different domains that mobile computing offers to the public, employees, and businesses.
- Understand the various options of payments - online & mobile payment, smart cards etc

Topics

Mobile Computing - Introduction and Concepts- mobile communication, mobile hardware and software, Mobile Device Operating Systems - Android, iOS, - Generations of Mobile Communication Technologies

e-Commerce & m-Commerce System Security

Familiarisation of mobile applications - Introduction to mobile applications-types of mobile applications-native web and hybrid, Different categories of mobile applications - cooking application - Education applications - Communication applications - Shopping application etc

Digital economy - Identify the methods of payments on the internet - e-Cash , e-cheques , credit cards on the Internet

Electronic Payment Systems - Need and uses of Electronic Payment System- Electronic Fund Transfer-one time password (OTP)-PIN and its importance-internet banking - Credit card - Debit card - UPI, Point of Sale(POS), Security Issues

Mobile Payment System - Different payment types: Mobile Wallets, QR code payments, Payment links, SMS payments, Benefits of Mobile Payment

Security issues in digital payment system ,Online banking frauds

Do's and Don'ts in electronic/mobile payment system

Learning outcome

- Understand various social media technologies and their importance in the day to day life.
- Benefits of social media in digital marketing and Education,
- Awareness on various cybercrimes and cyber security,
- Understand copyright and intellectual property rights

Topics

Social Media – Why & what Social Media – Present and Past - Social media Platforms and applications – Usage in business & Education- social media etiquette

Social media and digital marketing

Information Security – Concepts of Security - two factor authentication(2FA) - Biometric authentication methods - Data Encryption and Decryption- Cryptography

Awareness about cyber crime and Cyber security

Cyber crime - What is cyber crime, Understand the term computer Virus and Malware, Email spamming, Email spoofing, Email bombing, Forgery, Hacking, Cyber Stalking or Bullying, Web jacking, Phishing, Pornography, Cookies and threats

Cyber security - Basic concepts - Elements of security - Data security and protection from cyber attack - Antivirus - password, Concept of Firewall, Digital signature - uses and working

Cyber Laws - An Overview & Scope of Cyber Law - Copyright, Trademarks and Software Patenting - Data Privacy & Confidentiality - Cyber laws in India - IT ACT-objectives, features, offences

DCA 103 - OFFICE AUTOMATION SYSTEMS

Theory Hours - 50 Hrs

Module I - Word Processing and Indian Language Computing (10Hrs)

Learning outcome

- Work with MS Word and Open Office Writer.
- Understand the features affecting the page layout.
- Understand to use Indian languages in preparation of documents.

Topics

Introduction to Word Processing - Word Processor Basics, typing text, selecting, copying and deleting text

Creating and formatting documents using MS - Word :- MS Word Interface, Toolbars, Ribbon and Menus; Creating a new word document; Clipboard, Cut, Copy, Paste text; Find, Replace and select Text; Insert and delete comment; Use of Undo and Redo operations; Saving a document; Opening and closing a document

Text Formatting - Familiarise various Fonts, font size, font style; Format text, Bold, Italic, Underline, Strikethrough, Superscript and subscript; Text effects, text highlighting, applying font color; Change the Text Case; Alignment of text; Formatting a paragraph, Drop Cap, spacing, Tabs and Indents ; Copy Formatting with format painter; Using Borders and Shading; Create a numbered list or bulleted list

Working with objects - Insert pictures, shapes, symbols, Date and Time; Insert Text box, charts, Word Art, symbols; Insert Header and Footer, Footnote and End note; Page numbering; Insert a manual page break

Document Formatting - Formatting using themes; Using watermark; Applying Page Borders

Page Layout Settings - Page setup options - Setting Margins, Page orientation, Paper size; Creating documents with columns

Document Review - Checking spelling and grammar in a document; Using of Thesaurus; Auto correct; Tracking changes

Viewing a document - Different views of a document; Zooming; Arranging windows; Creating macros

Styles - Apply a style; Apply a document theme; View all available styles; Change style set; Create a style

Navigation - Open the Navigation pane; Search for a word or phrase; Search for Graphics, Tables, Equations or Comments; View search results; View documents headings; View a document's pages; Adding Hyperlink; Inserting Bookmark

Drawing and Graphics - Insert a picture, screen shot, shapes; Adjust text wrapping; Format, Resize and delete an object

Working with Tables - Insert a table; Manipulating Rows & Columns; Merging & splitting cells ; Adjust Column width or row height; Text Direction

Mail Merging - Creating a Mail Merge Document; Creating address list; Merging Main Document with data, Saving

Printing a document - Previewing, settings - Print All / Current Page / Custom Print; Printing a document; Advanced Printing Options

Converting documents to other file formats(eg- pdf)

MS Word Keyboard shortcuts

Word Processing using Open Office Writer - Working with documents; Formatting documents; Working with Tables; Inserting Pictures/Files etc; Tools - Spell check, macros, mail merge etc; AutoCorrect; Manually running the Spell checker; Finding Synonyms with the Thesaurus; Finding items in a Document; Create and modify Headers and Footers; Create and modify Page numbers; Adding Graphics, Formatting a Picture; Resize a picture, Wrapping a picture around text; Adding borders and colors; Creating a Form Letters; Creating a Data Source; Reviewing the Mail Merge document; Addressing Mailing Labels

Language Computing - Complexities of Indian languages; Pre -Unicode Era; Advantages of Font Encoding; Disadvantages of Font Encoding; What is Unicode? History, Format, varying length encoding; Packages and tools available under Windows for Indian languages; Difference between Unicode and non-Unicode Fonts; Familiarisation of Malayalam typing keyboard

Learning outcome

- Examine spreadsheet concepts and explore the Microsoft Office Excel environment, import and export data

Topics

Introduction to Spreadsheets - Spreadsheet Basics; Use of spreadsheets

MS-EXCEL- Basics; Familiarise MS- Excel Interface; Components of an Excel Workbook; Worksheet, Cell and Cell Address; Create New Workbook; Typing data; Saving and opening and closing a workbook; Preview and print workbook; Undo and Redo operations in workbook; Selecting a cell, cell range, entire worksheet; Different views; Zooming

Spreadsheet manipulations - Editing cell contents; Cut or Copy Data ; Previewing an Item Before Pasting; Paste Special options; Move or Copy Cells Using Drag and Drop; Copy Using Auto Fill; Complete a Series Using AutoFill; Insert a Column or Row; Delete a Column or Row; Insert a Comment; Copying and moving Spreadsheet; Naming, inserting and deleting Spreadsheet

Formatting - Formatting Text – setting Font, font size, style; Setting font color, Bold, Italic, Underline cell contents; Text Wrap, Merge & Center; Format Cell values; Copy Formatting with the Format Painter; Cell Alignments; Applying borders; Apply a Cell Style; Format a Cell Range as a Table; Apply a Document Theme; Conditional Formatting ; Page setup options; Setting header and footer in a worksheet; Inserting page number and page breaks in a worksheet; Setting background in a worksheet; Applying Borders and shading; Fill Series; Sorting & Filtering of data ; Using Auto Sum

Calculations in a spreadsheet - Introduction to formulas and Functions; Creating a formula; Using Functions –various functions in MS Excel and its use; Use of Vlookup function; Reference a Cell in a Formula; Create an Absolute Cell Reference

Sorting and Filtering data in a spreadsheet - Data Sorting; Data Filtering and Advanced filtering; Data Validation; Introduction to Pivot Table and create a Pivot table

Working with Charts - Introduction to Chart and its types; Inserting Column and Pie chart; Manipulating charts

Mail merging using worksheet data - Importing address list from Excel file for mail merging

Workbook Views - Various views of a workbook; Freezing Panes; Using macros in a workbook

Protecting the workbook - Protecting a workbook with a password

Printing the worksheet - Page Setup; Setting Print Area and Print Titles; Print Preview and Print options

MS Excel Keyboard shortcuts

Module III - Presentations (10 Hrs)

Learning outcome

- Knowledge about PowerPoint interface.
- Creating multimedia presentations.
- Using design layouts and templates for presentations.

Topics

Create and Manage Presentations using MS-POWERPOINT - The Basics; Introduction to Presentations and slides; Familiarizing PowerPoint Window; Create a New Presentation; Creating a presentation using templates; Open a Presentation; Saving a Presentation

Working with Slides - Inserting a new slide; Selecting a slide layout; Copying slides; Setting slide background; Applying themes to slide layout; Making duplicate slides

Manipulation of Slide contents - Inserting Text Boxes; Formatting text; Creating list with bullets and numbering; Changing Text directions; Inserting pictures, Shapes, Word Art; Inserting Chart inside a slide; Grouping objects in a slide; Inserting slide header and Footer; Different views

Transitions and Animations - Applying various Slide; Transitions; Animate slide contents, custom animation; Set timing for Transitions and Animations; Creating multimedia presentation - add video and audio

Slide Show - Running a slide show; Creating custom slide show

Topics

Introductions to C programming - Structure of a C program - Input and output Statements - Keywords-Data types - Constants - Variables - Declaring Variable Names - Operators and Expressions - Operator Precedence in Expressions - Increment and Decrement Operators - Conditional Statements - simple if - if-else - switch - Implementing Loops in Programs - The While Loop - The do while Loop - The for Loop - Break and Continue Statement

Module III - C Programming: Arrays and Functions (10Hrs)

Learning outcome

- To understand and apply the functions and arrays.
- To implement the features of C language in real world applications

Topics

Arrays - Defining and Manipulating Arrays - Array Variable - Syntax Rules for Arrays - Reading and Writing Multidimensional Arrays.
Functions - Functions Definition- Function Calling - Recursive functions - Character Strings -The Character Data Type - Manipulating Strings of Characters- Arrays in Functions.

Module IV - Web Programming: HTML, CSS and JavaScript (10Hrs)

Learning outcome

- To understand the working of a web application.
- Understanding the use of HTML, CSS and JavaScript in websites
- To develop websites.

Topics

Introduction to web technology - Web application- Web server and Application server - Client and Server - Scripting languages

HTML and HTML5 - HTML Editors - Elements - Attributes - Headings - Paragraphs - Formatting - HTML Comments - Colors - Fonts - Hyperlink- Images - Tables - Lists -- Iframes - Marquee - Forms - Embedding Audio and video

CSS3 Introduction - Syntax - Selectors - External, Internal & Inline Style sheets - Backgrounds - Colors - Text - Fonts - Links - Border - Outline - Margin - Padding - Align - Positioning - Gradients

JavaScript introduction - Syntax - External & Internal usage - Variables - Operators -- Functions - Events - Comparison - Condition -- Loops - Dialog box - Form Validation.

Module V - Introduction to PHP and Python Programming (10Hrs)

Learning outcome

- Understand the features and uses of PHP
- To be able to create web pages using PHP.
- To get a basic understanding on web servers.
- To be able to write programs in the Python programming language.

Topics

Introduction to PHP - Advantages of PHP - Where to use PHP - Installing PHP - PHP Syntax - Variables - Echo and Print - Data Types - Constant - Operators - IF Statement - Switch statement - Loops.

Introduction to Python - Data Types - Variables - Basic Input-Output Operations- Keywords- Identifiers - Literals - Punctuations - Operators - Basic loops and conditions - String - List-Set - Tuple - Dictionary.

Detailed Syllabus (Lab)



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DCA 103 - OFFICE AUTOMATION SYSTEMS

Theory Hours - 50 Hrs

Module I - Word Processing and Indian Language Computing (10Hrs)

Learning outcome

- Work with MS Word and Open Office Writer.
- Understand the features affecting the page layout.
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Learning outcome

- Understand various social media technologies and their importance in the day to day life.
- Benefits of social media in digital marketing and Education,
- Awareness on various cybercrimes and cyber security,
- Understand copyright and intellectual property rights

Topics

Social Media – Why & what Social Media – Present and Past - Social media Platforms and applications – Usage in business & Education- social media etiquette

Social media and digital marketing

Information Security – Concepts of Security - two factor authentication(2FA) - Biometric authentication methods - Data Encryption and Decryption- Cryptography

Awareness about cyber crime and Cyber security

Cyber crime - What is cyber crime, Understand the term computer Virus and Malware, Email spamming, Email spoofing, Email bombing, Forgery, Hacking, Cyber Stalking or Bullying, Web jacking, Phishing, Pornography, Cookies and threats

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Cyber Laws - An Overview & Scope of Cyber Law - Copyright, Trademarks and Software Patenting - Data Privacy & Confidentiality - Cyber laws in India - IT ACT-objectives, features, offences

Sharing A Presentation - Convert presentation to PDF ; Convert presentation to Video ; Create an Image from presentation ; Print a PowerPoint Presentation; Broadcast PowerPoint presentation

Open Office Impress - Impress characteristics; Start Impress, Presentation Wizard; Drawing, Zoom, Lines, Rectangle, Freeform line filled, Polygon, Convert objects, Curves; Select objects, Copy objects, Delete objects, Flip objects, Arrange objects, Group objects; Export drawing, Area Fills, Color, Gradient, Hatching, Bitmaps, Transfer settings, Images, Insert images, Filters, Graphics mode, Color, Transparency, Crop, Gallery, Glue points, Size and position, Rotate, Alignment, Text, Text to polygon, Text boxes, Slides, Insert, Clone, Rename, Delete slides; Format, Character, Paragraph, Textbox format, Slide effects, Slide transitions, Sounds ; Automatic transition, Manual transition, Hyperlinks, From text, From images, Bitmaps

Module IV- Basics of Accounting & Billing Systems (10Hrs)

Learning outcome

- After going this module one should get an idea about basic accounting components and can familiarize billing system

Topics

Basics of Accounting - Accounting; Business Transaction; Purchase; Sales; Purchase return (Outward invoice); Sales return (Inward invoice); Assets; Liabilities; Capital; Debtors; Creditor; Debit; Credit; Drawings; Receipts; Account; Ledger; Journal entries; Trial balance; Profit; Profit & loss account; Balance Sheet

Billing System - Introduction; Need of Billing System; Features of Billing System; GST Billing; Billing using MS-Excel

Module V - Printing Technologies & Multimedia (10Hrs)

Learning outcome

- Knowledge about modern printing technologies, DTP, familiarize with image tools and Multimedia techniques

Topics

Printing Technologies - Introduction to various modern Printing processes; Printing Technology using DTP; Advantages of DTP; Introduction to DTP software; Use of various

tools in MS Paint, GIMP; Importing Graphics; Image Compression; Electronic Image file formats- BMP, JPEG, TIFF, GIF & PNG ; Topographic design; Vector drawing techniques; Portable Document Format (PDF)

Multimedia - Definition; Multimedia systems, elements & applications; Multimedia system architecture; Digital media and Hyper media; Multimedia file formats & standards; Types and methods of compression and decompression; Multimedia I/O Technologies; Adding text, integrating audio with Video; Image enhancing designing techniques; Image authoring and editing tools

DCA 104 - PRINCIPLES OF PROGRAMMING AND WEB TECHNOLOGIES

Theory Hours - 50 Hrs

Module I - Basics of Programming (10Hrs)

Learning outcome

- Understand the methodology to solve the problem, algorithm, flowchart & coding
- To identify programming language classifications.
- To Learn Object oriented programming concepts.
- Understand the features & architecture of Microprocessor generations and types.

Topics

Algorithms - Properties of a good algorithm - Flowchart - Problem-solving using Computer - Introduction to Programming Languages - Machine Language - Assembly Language - High Level Programming Languages - Procedure Orientation and Object Orientation - Object Orientation concepts - Compiler and interpreter - Introduction to Microprocessor & Microcontroller Programming Operation Cycle (Fetch, Decode, Execute, Store)

Module II- Introduction to C Programming (10Hrs)

Learning outcome

- To provide an overview of working principles of C language.
- Construct, compile, link & execute the C programs
- To learn and implement C language programming techniques.

**CENTRE FOR DEVELOPMENT OF IMAGING TECHNOLOGY
TECHNOLOGY EXTENSION DIVISION**

SYLLABUS

DIPLOMA IN COMPUTER APPLICATION (DCA)	
Scheme: 2022 Scheme Duration: 6 Months Eligibility: SSLC or Equivalent	
THEORY SUBJECTS	
DCA 101	Introduction to Information System
DCA 102	Networking and Internet
DCA 103	Office Automation Systems
DCA 104	Principles of Programming and Web Technologies
LAB SUBJECTS	
DCA 105	Lab I-Computer Basics and Office Automation
DCA 106	Lab II- Programming in C and Python & Web Application Development
ANNEXURE	
Assignments for Theory & Questions for Lab	

Detailed Syllabus(Theory)

DCA 101 - INTRODUCTION TO INFORMATION SYSTEM

Theory Hours - 50 Hrs

Module I - Computer Fundamentals (10Hrs)

Learning outcome

- Understanding of the concept and architecture of computers.
- How a computer system works?
- Learning the basic terminologies.

Topics

Introduction :- Fundamentals - Definition, Hardware, Software, Operating System, data, information etc; Functions and Characteristics; Applications of Computers; Capabilities and Limitations

Familiarise different generations of computer

Computer classifications :- Analogue / Digital / Hybrid, PC, Microcomputer, Minicomputer, Mainframe computer, Super Computer.

Components of a computer :- Input Unit ; Output Unit ; CPU ; Memory unit

Input devices :- Keyboard; Mouse; Scanner; Digital/ Web Camera; Touch screen; graphic tablet

Output Devices :- VDU; Printer; Audio Output devices; LCD Projector

Intelligent terminal and dumb terminal

Memory Unit ; Volatile and Non-Volatile memory ; Primary Memory ; Secondary Memory ; BIOS Memory ; Cache Memory ; Virtual memory ; SIMM ; DIMM ; Storage devices; online / offline storage.

Familiarisation of other hardware components :- SMPS ; Motherboard ; Video Cards - PCI, PCI Express, and AGP ; Multimedia Cards - Sound Cards, TV Tuner Cards and Capture Cards ; I/O Cards - SCSI, Serial, USB, and Parallel ; Communications Cards - NICs and Modems

Ports :- Characteristics and different types - Serial, Parallel, USB, Ethernet port etc

Configuring the Peripheral Devices ; methods for connecting peripherals to system - different types of cable connection, explain Bluetooth and Wi-Fi / IR, NFC connectivity

Data representation in computers :- Number System - Types, examples, Conversion rules ;

Coding system - ASCII, BCD, EBCDIC, ISCII, Parity Bit, etc.

Units :- Time Units - Milliseconds, Microseconds, Nanoseconds, Pico seconds ; storage units - Bit, Byte, Kilo Byte, Mega Byte, Giga Byte, Tera Byte, Peta Byte, Exa Byte, Nibble.

Module II - Basics of Information Technology (10Hrs)

Learning outcome

- Acknowledge the role of technologies in today's society
- To identify the basic hardware and software components of a computer and explore their functioning
- Learn about various operating systems

Topics

Introduction to IT - Role of IT in society - Advantages and Disadvantages, Characteristics and features of IT, Application areas - Science and Engineering, Education, Business and Commerce, Medicine and Entertainment - Advantages & Disadvantages of IT

Basics of Computer System - Generations & Peripheral devices - Hardware - Software - system software & application software-off the shelf and custom software-programming languages-compilers-interpreters- Operating systems: structure & functions - Types of Operating system: Batch processing OS, Mutitasking OS, Multiprocessing OS, Time sharing OS ,Real Time OS, Distributed OS, Network OS-Examples of OS: MS-DOS, MS-Windows, Linux Ubuntu, Apple Macintosh

Data and information Concepts -- Importance of data and information, Difference between data and information

Introduction to ITES (IT Enabled Services) - what are IT enabled services? Benefits and threats, ITES fields - BPO - GIS - Call Centers - Data Management Services - Medical Transcription - Data Digitization, Web services, Payroll management, Telemarketing

Module III - Basics of Software (10Hrs)

Learning outcome

- Distinguish System software and Application software.
- Commonly used operating systems.
- Identify the primary functions of Operating Systems.
- Installation and configuration of software.

Topics

Types of Software :- Software - System software , Application software, Utility Software ; Demo ware ; Shareware ; Freeware ; Firmware ; Free and Open Source Software.

Operating Systems :- Functions, Types - Batch Processing , Single User, Multi User, Multiprogramming, Multi-Tasking (Multiprocessing); Familiarise Multithreading

Booting and Shutdown of Computers ; BIOS ; POST ; Master Boot Record(MBR)

Introduction to old versions of Windows OS

Detailed study of Windows :- Overview ; GUI basics (Desktop, taskbar, icons, desktop background management) ; Navigation (Start menu, File explorer) ; Accessories ; Control Panel ; User Account management ; storage management ; file and folder management ; keyboard shortcuts ; data backup

Familiarise Ubuntu Linux :- Introduction ; History ; Versions ; basics

Familiarising Command mode :- Windows (DOS) ; Linux (Terminal)

Familiarize other operating systems :- UNIX ; Apple Macintosh

Linux commands

Computer Virus :- Introduction ; Mechanism of Virus ; How a virus spreads ; How is virus named ; A few prominent viruses ; Types of Computer Virus ; Related Concepts - Antivirus programs - Norton antivirus program

Module IV - Basics of Information System (10Hrs)

Learning outcome

- Knowledge about information system, its capabilities and uses with IT infrastructure in a business enterprise to achieve desired goals.

Topics

Information System :- Data, Information & System ; Information System; Dimensions of Information System - Organization, Management, IT ; Functions of Information System

Business Information Systems :- Role of Business Information Systems - Top, Middle, Bottom ;

Types of Business Information Systems - TPS, MIS, EIS, DSS, AI/Expert Systems

Management Information System(MIS) :- Objectives ; Components ; Functions ; Resources ; Characteristics; Terminologies and Applications

Enterprise System and Types :- ERP ; CRM ; SCM

Module V – Basics of Databases (10Hrs)

Learning outcome

- Knowledge about data processing, data management systems, relational data model, familiarize MS Access, SQL and importing of Excel files.

Topics

Database Management System - Introduction; Data Processing Vs. Data Management Systems ; Database Concepts; Characteristics of Database; Types of Database System; Advantages and Disadvantages of a DBMS ; Database Administrators and Database Users

Creating database using MS Access - Importing Excel files to MS Access; Using Forms-creating a form and editing data using form

Relational Model Concepts - Data Definition Language (DDL) ; Data Manipulation Language (DML); Introduction to SQL; SQL commands; Importing Excel files to SQL; Familiarise MySQL, NoSQL and Oracle

DCA 102 - NETWORKING AND INTERNET

Theory Hours - 50 Hrs

Module I - Computer Networks (10Hrs)

Learning outcome

- Knowledge about networking technologies and types of networks, devices used, security devices, topologies, nodes, mobile communication and latest technologies

Topics

Introduction to Computer Networks - Evolution of Networking, Wired & Wireless Networking

Types of Networks - LAN (Local Area Network) , MAN (Metropolitan Area Network) , WAN (Wide Area Network) , PAN (Personal Area Network)

Network Devices - Hub, Switch, Router, Bridge, Gateway; Modem, Repeater, Access Point; Modem, Ethernet Card, RJ11, RJ45

Network Security Devices - Active Devices, Passive Devices, Preventative Devices, Unified Threat Management (UTM), Firewalls

Integrated Services Digital Network (ISDN)

Networking Topologies - Bus Topology, Star Topology, Ring Topology, Mesh Topology, Tree or Hybrid Topology

Nodes in a Networked Communication - Types of Nodes, MAC Address, IP Address, IPv4, IPv6

Connecting to Internet - Connecting the computer to the Internet

Types of connectivity - Dial-up; Wired broadband connectivity - ISDN, Cable Internet, DSL, Leased Line, FTTH; Wireless broadband connectivity - Mobile broadband, Wi-MAX, Satellite broadband

Internet Access sharing methods - LAN, Wi-Fi, Li-Fi

Services on Internet - World Wide Web (WWW), Browser, Web browsing, Search Engines, E-mail, Social media; Various stages of Data Transfer from Server to Client; Domain Name; Resolution; Mobile communication;

Configuring the Peripheral Devices ; methods for connecting peripherals to system - different types of cable connection, explain Bluetooth and Wi-Fi / IR, NFC connectivity

Data representation in computers :- Number System - Types, examples, Conversion rules ;

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- Knowledge about information system, its capabilities and uses with IT infrastructure in a business enterprise to achieve desired goals.

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Types of Business Information Systems - TPS, MIS, EIS, DSS, AI/Expert Systems

Management Information System(MIS) :- Objectives ; Components ; Functions ; Resources ; Characteristics; Terminologies and Applications

Enterprise System and Types :- ERP ; CRM ; SCM

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Learning outcome

- Knowledge about data processing, data management systems, relational data model, familiarize MS Access, SQL and importing of Excel files.

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Database Management System - Introduction; Data Processing Vs. Data Management Systems ; Database Concepts; Characteristics of Database; Types of Database System; Advantages and Disadvantages of a DBMS ; Database Administrators and Database Users

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DCA 102 - NETWORKING AND INTERNET

Theory Hours - 50 Hrs

Module I - Computer Networks (10Hrs)

Learning outcome

- Knowledge about networking technologies and types of networks, devices used, security devices, topologies, nodes, mobile communication and latest technologies

Topics

Introduction to Computer Networks - Evolution of Networking, Wired & Wireless Networking

Types of Networks - LAN (Local Area Network) , MAN (Metropolitan Area Network) , WAN (Wide Area Network) , PAN (Personal Area Network)

Network Devices - Hub, Switch, Router, Bridge, Gateway; Modem, Repeater, Access Point; Modem, Ethernet Card, RJ11, RJ45

Network Security Devices - Active Devices, Passive Devices, Preventative Devices, Unified Threat Management (UTM), Firewalls

Integrated Services Digital Network (ISDN)

Networking Topologies - Bus Topology, Star Topology, Ring Topology, Mesh Topology, Tree or Hybrid Topology

Nodes in a Networked Communication - Types of Nodes, MAC Address, IP Address, IPv4, IPv6

Connecting to Internet - Connecting the computer to the Internet

Types of connectivity - Dial-up; Wired broadband connectivity - ISDN, Cable Internet, DSL, Leased Line, FTTH; Wireless broadband connectivity - Mobile broadband, Wi-MAX, Satellite broadband

Internet Access sharing methods - LAN, Wi-Fi, Li-Fi

Services on Internet - World Wide Web (WWW), Browser, Web browsing, Search Engines, E-mail, Social media; Various stages of Data Transfer from Server to Client; Domain Name; Resolution; Mobile communication;

Generations in mobile communication - First Generation, Second Generation - GSM, GPRS, EDGE, CDMA, Third Generation - WCDMA, Fourth Generation, Fifth Generation; Mobile communication services- SMS, MMS, GPS, Smart Cards

Mobile Operating System

Latest Technologies - Data Analysis; Cloud Computing; Internet of Things & Edge Computing; Block Chain; Artificial Intelligence & Machine Learning; Augmented Reality & Virtual Reality; Robotic Process Automation (RPA); 5G Spectrum

Module II - Introduction to Internet (10Hrs)

Learning outcome

- Understanding about internet
- Explore different kinds of information available on the Internet, surfing safely and Searching information on the Internet
- Importance of online conference tools in daily life and its usage
- Understand e-learning concept of e-learning and its importance in the modern world.

Topics

Concepts of Internet - Basics of internet connectivity -Applications of Internet -tools and troubleshooting- Intranet and extranet -Internet Services-communication services- Information retrieval services-Web services-World Wide Web-email- Web Browsing softwares - Search Engines - URL - Web Protocols- Domain name - IP Address - Surfing the web

Basics of electronic mail -concept, technology behind email, different email providers, Getting an email account - Sending and receiving emails - mail operations -email folders- applications of Emails-web mail-client mail-email security- email client(eg-outlook)

Online/Web/Mobile Conferences & Tools - introduction towards Audio and Video conferencing - Advantages & Disadvantages -Popular Video conferencing tools

eLearning - What is eLearning, Features and uses, Different eLearning platforms in India, LMS

Learning outcome

- Understand the concept of e-government and the associated benefits and drawbacks
- Gather knowledge on various National and State e-governance initiatives.
- Recognize the benefits and limitations of e-commerce
- Understand major e-commerce business models and their impact in the society

Topics

What is E-Governance, objective, Scope, Benefits and outcomes of e-Governance - **Pillars of e-Governance:** People - Process - Technology - Resources, **Types of interactions in e-Governance:** Government to Citizen (G2C)- Government to Businesses (G2B)-Government to Government (G2G)-Government to Employees (G2E), **Phases of e-Governance Maturity Model** (Phase I: Information, Phase II: Interaction, Phase III- Transaction - Phase IV : Transformation)

e-Governance Infrastructures: Common Service Centre (CSC) - State Wide Area Network (SWAN) - National e-Governance Service Delivery Gateway (NSDG) - State Data Center (SDC)

Challenges to e-Governance, Security approaches to e-Governance

National level e-Governance initiative - Digital India initiative, Major services and projects implemented by union govt and state govt.

e-Commerce (Internet Commerce or electronic commerce) - What is e-Commerce - Features and Scope of e-Commerce - Traditional Commerce vs e-Commerce - e-Commerce Models (B2C, B2B, C2C, C2B, B2G - Benefits and limitations of e-Commerce - Major e-Commerce websites and its usage

Learning outcome

- Understand mobile computing, its principles and theories.
- List applications in different domains that mobile computing offers to the public, employees, and businesses.
- Understand the various options of payments - online & mobile payment, smart cards etc

Topics

Mobile Computing - Introduction and Concepts- mobile communication, mobile hardware and software, Mobile Device Operating Systems - Android, iOS, - Generations of Mobile Communication Technologies

e-Commerce & m-Commerce System Security

Familiarisation of mobile applications - Introduction to mobile applications-types of mobile applications-native web and hybrid, Different categories of mobile applications - cooking application - Education applications - Communication applications - Shopping application etc

Digital economy - Identify the methods of payments on the internet - e-Cash , e-cheques , credit cards on the Internet

Electronic Payment Systems - Need and uses of Electronic Payment System- Electronic Fund Transfer-one time password (OTP)-PIN and its importance-internet banking - Credit card - Debit card - UPI, Point of Sale(POS), Security Issues

Mobile Payment System - Different payment types: Mobile Wallets, QR code payments, Payment links, SMS payments, Benefits of Mobile Payment

Security issues in digital payment system ,Online banking frauds

Do's and Don'ts in electronic/mobile payment system

Learning outcome

- Understand various social media technologies and their importance in the day to day life.
- Benefits of social media in digital marketing and Education,
- Awareness on various cybercrimes and cyber security,
- Understand copyright and intellectual property rights

Topics

Social Media – Why & what Social Media – Present and Past - Social media Platforms and applications – Usage in business & Education- social media etiquette

Social media and digital marketing

Information Security – Concepts of Security - two factor authentication(2FA) - Biometric authentication methods - Data Encryption and Decryption- Cryptography

Awareness about cyber crime and Cyber security

Cyber crime - What is cyber crime, Understand the term computer Virus and Malware, Email spamming, Email spoofing, Email bombing, Forgery, Hacking, Cyber Stalking or Bullying, Web jacking, Phishing, Pornography, Cookies and threats

Cyber security - Basic concepts - Elements of security - Data security and protection from cyber attack - Antivirus - password, Concept of Firewall, Digital signature - uses and working

Cyber Laws - An Overview & Scope of Cyber Law - Copyright, Trademarks and Software Patenting - Data Privacy & Confidentiality - Cyber laws in India - IT ACT-objectives, features, offences

Learning outcome

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Cyber Laws - An Overview & Scope of Cyber Law - Copyright, Trademarks and Software Patenting - Data Privacy & Confidentiality - Cyber laws in India - IT ACT-objectives, features, offences

Sharing A Presentation - Convert presentation to PDF ; Convert presentation to Video ; Create an Image from presentation ; Print a PowerPoint Presentation; Broadcast PowerPoint presentation

Open Office Impress - Impress characteristics; Start Impress, Presentation Wizard; Drawing, Zoom, Lines, Rectangle, Freeform line filled, Polygon, Convert objects, Curves; Select objects, Copy objects, Delete objects, Flip objects, Arrange objects, Group objects; Export drawing, Area Fills, Color, Gradient, Hatching, Bitmaps, Transfer settings, Images, Insert images, Filters, Graphics mode, Color, Transparency, Crop, Gallery, Glue points, Size and position, Rotate, Alignment, Text, Text to polygon, Text boxes, Slides, Insert, Clone, Rename, Delete slides; Format, Character, Paragraph, Textbox format, Slide effects, Slide transitions, Sounds ; Automatic transition, Manual transition, Hyperlinks, From text, From images, Bitmaps

Module IV- Basics of Accounting & Billing Systems (10Hrs)

Learning outcome

- After going this module one should get an idea about basic accounting components and can familiarize billing system

Topics

Basics of Accounting - Accounting; Business Transaction; Purchase; Sales; Purchase return (Outward invoice); Sales return (Inward invoice); Assets; Liabilities; Capital; Debtors; Creditor; Debit; Credit; Drawings; Receipts; Account; Ledger; Journal entries; Trial balance; Profit; Profit & loss account; Balance Sheet

Billing System - Introduction; Need of Billing System; Features of Billing System; GST Billing; Billing using MS-Excel

Module V - Printing Technologies & Multimedia (10Hrs)

Learning outcome

- Knowledge about modern printing technologies, DTP, familiarize with image tools and Multimedia techniques

Topics

Printing Technologies - Introduction to various modern Printing processes; Printing Technology using DTP; Advantages of DTP; Introduction to DTP software; Use of various

tools in MS Paint, GIMP; Importing Graphics; Image Compression; Electronic Image file formats- BMP, JPEG, TIFF, GIF & PNG ; Topographic design; Vector drawing techniques; Portable Document Format (PDF)

Multimedia - Definition; Multimedia systems, elements & applications; Multimedia system architecture; Digital media and Hyper media; Multimedia file formats & standards; Types and methods of compression and decompression; Multimedia I/O Technologies; Adding text, integrating audio with Video; Image enhancing designing techniques; Image authoring and editing tools

DCA 104 - PRINCIPLES OF PROGRAMMING AND WEB TECHNOLOGIES

Theory Hours - 50 Hrs

Module I - Basics of Programming (10Hrs)

Learning outcome

- Understand the methodology to solve the problem, algorithm, flowchart & coding
- To identify programming language classifications.
- To Learn Object oriented programming concepts.
- Understand the features & architecture of Microprocessor generations and types.

Topics

Algorithms - Properties of a good algorithm - Flowchart - Problem-solving using Computer - Introduction to Programming Languages - Machine Language - Assembly Language - High Level Programming Languages - Procedure Orientation and Object Orientation - Object Orientation concepts - Compiler and interpreter - Introduction to Microprocessor & Microcontroller Programming Operation Cycle (Fetch, Decode, Execute, Store)

Module II- Introduction to C Programming (10Hrs)

Learning outcome

- To provide an overview of working principles of C language.
- Construct, compile, link & execute the C programs
- To learn and implement C language programming techniques.

**CENTRE FOR DEVELOPMENT OF IMAGING TECHNOLOGY
TECHNOLOGY EXTENSION DIVISION**

SYLLABUS

DIPLOMA IN COMPUTER APPLICATION (DCA)	
Scheme: 2022 Scheme Duration: 6 Months Eligibility: SSLC or Equivalent	
THEORY SUBJECTS	
DCA 101	Introduction to Information System
DCA 102	Networking and Internet
DCA 103	Office Automation Systems
DCA 104	Principles of Programming and Web Technologies
LAB SUBJECTS	
DCA 105	Lab I-Computer Basics and Office Automation
DCA 106	Lab II- Programming in C and Python & Web Application Development
ANNEXURE	
Assignments for Theory & Questions for Lab	

Detailed Syllabus(Theory)

DCA 101 - INTRODUCTION TO INFORMATION SYSTEM

Theory Hours - 50 Hrs

Module I - Computer Fundamentals (10Hrs)

Learning outcome

- Understanding of the concept and architecture of computers.
- How a computer system works?
- Learning the basic terminologies.

Topics

Introduction :- Fundamentals - Definition, Hardware, Software, Operating System, data, information etc; Functions and Characteristics; Applications of Computers; Capabilities and Limitations

Familiarise different generations of computer

Computer classifications :- Analogue / Digital / Hybrid, PC, Microcomputer, Minicomputer, Mainframe computer, Super Computer.

Components of a computer :- Input Unit ; Output Unit ; CPU ; Memory unit

Input devices :- Keyboard; Mouse; Scanner; Digital/ Web Camera; Touch screen; graphic tablet

Output Devices :- VDU; Printer; Audio Output devices; LCD Projector

Intelligent terminal and dumb terminal

Memory Unit ; Volatile and Non-Volatile memory ; Primary Memory ; Secondary Memory ; BIOS Memory ; Cache Memory ; Virtual memory ; SIMM ; DIMM ; Storage devices; online / offline storage.

Familiarisation of other hardware components :- SMPS ; Motherboard ; Video Cards - PCI, PCI Express, and AGP ; Multimedia Cards - Sound Cards, TV Tuner Cards and Capture Cards ; I/O Cards - SCSI, Serial, USB, and Parallel ; Communications Cards - NICs and Modems

Ports :- Characteristics and different types - Serial, Parallel, USB, Ethernet port etc

Configuring the Peripheral Devices ; methods for connecting peripherals to system - different types of cable connection, explain Bluetooth and Wi-Fi / IR, NFC connectivity

Data representation in computers :- Number System - Types, examples, Conversion rules ;

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Learning outcome

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DCA 102 - NETWORKING AND INTERNET

Theory Hours - 50 Hrs

Module I - Computer Networks (10Hrs)

Learning outcome

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Introduction to Computer Networks - Evolution of Networking, Wired & Wireless Networking

Types of Networks - LAN (Local Area Network) , MAN (Metropolitan Area Network) , WAN (Wide Area Network) , PAN (Personal Area Network)

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Generations in mobile communication - First Generation, Second Generation - GSM, GPRS, EDGE, CDMA, Third Generation - WCDMA, Fourth Generation, Fifth Generation; Mobile communication services- SMS, MMS, GPS, Smart Cards

Mobile Operating System

Latest Technologies - Data Analysis; Cloud Computing; Internet of Things & Edge Computing; Block Chain; Artificial Intelligence & Machine Learning; Augmented Reality & Virtual Reality; Robotic Process Automation (RPA); 5G Spectrum

Module II - Introduction to Internet (10Hrs)

Learning outcome

- Understanding about internet
- Explore different kinds of information available on the Internet, surfing safely and Searching information on the Internet
- Importance of online conference tools in daily life and its usage
- Understand e-learning concept of e-learning and its importance in the modern world.

Topics

Concepts of Internet - Basics of internet connectivity -Applications of Internet -tools and troubleshooting- Intranet and extranet -Internet Services-communication services- Information retrieval services-Web services-World Wide Web-email- Web Browsing softwares - Search Engines - URL - Web Protocols- Domain name - IP Address - Surfing the web

Basics of electronic mail -concept, technology behind email, different email providers, Getting an email account - Sending and receiving emails - mail operations -email folders- applications of Emails-web mail-client mail-email security- email client(eg-outlook)

Online/Web/Mobile Conferences & Tools - introduction towards Audio and Video conferencing - Advantages & Disadvantages -Popular Video conferencing tools

eLearning - What is eLearning, Features and uses, Different eLearning platforms in India, LMS

Learning outcome

- Understand the concept of e-government and the associated benefits and drawbacks
- Gather knowledge on various National and State e-governance initiatives.
- Recognize the benefits and limitations of e-commerce
- Understand major e-commerce business models and their impact in the society

Topics

What is E-Governance, objective, Scope, Benefits and outcomes of e-Governance - **Pillars of e-Governance:** People - Process - Technology - Resources, **Types of interactions in e-Governance:** Government to Citizen (G2C)- Government to Businesses (G2B)-Government to Government (G2G)-Government to Employees (G2E), **Phases of e-Governance Maturity Model** (Phase I: Information, Phase II: Interaction, Phase III- Transaction - Phase IV : Transformation)

e-Governance Infrastructures: Common Service Centre (CSC) - State Wide Area Network (SWAN) - National e-Governance Service Delivery Gateway (NSDG) - State Data Center (SDC)

Challenges to e-Governance, Security approaches to e-Governance

National level e-Governance initiative - Digital India initiative, Major services and projects implemented by union govt and state govt.

e-Commerce (Internet Commerce or electronic commerce) - What is e-Commerce - Features and Scope of e-Commerce - Traditional Commerce vs e-Commerce - e-Commerce Models (B2C, B2B, C2C, C2B, B2G - Benefits and limitations of e-Commerce - Major e-Commerce websites and its usage

Learning outcome

- Understand the concept of e-government and the associated benefits and drawbacks
- Gather knowledge on various National and State e-governance initiatives.
- Recognize the benefits and limitations of e-commerce
- Understand major e-commerce business models and their impact in the society

Topics

What is E-Governance, objective, Scope, Benefits and outcomes of e-Governance - **Pillars of e-Governance:** People - Process - Technology - Resources, **Types of interactions in e-Governance:** Government to Citizen (G2C)- Government to Businesses (G2B)-Government to Government (G2G)-Government to Employees (G2E), **Phases of e-Governance Maturity Model** (Phase I: Information, Phase II: Interaction, Phase III- Transaction - Phase IV : Transformation)

e-Governance Infrastructures: Common Service Centre (CSC) - State Wide Area Network (SWAN) - National e-Governance Service Delivery Gateway (NSDG) - State Data Center (SDC)

Challenges to e-Governance, Security approaches to e-Governance

National level e-Governance initiative - Digital India initiative, Major services and projects implemented by union govt and state govt.

e-Commerce (Internet Commerce or electronic commerce) - What is e-Commerce - Features and Scope of e-Commerce - Traditional Commerce vs e-Commerce - e-Commerce Models (B2C, B2B, C2C, C2B, B2G - Benefits and limitations of e-Commerce - Major e-Commerce websites and its usage

Learning outcome

- Understand mobile computing, its principles and theories.
- List applications in different domains that mobile computing offers to the public, employees, and businesses.
- Understand the various options of payments - online & mobile payment, smart cards etc

Topics

Mobile Computing - Introduction and Concepts- mobile communication, mobile hardware and software, Mobile Device Operating Systems - Android, iOS, - Generations of Mobile Communication Technologies

e-Commerce & m-Commerce System Security

Familiarisation of mobile applications - Introduction to mobile applications-types of mobile applications-native web and hybrid, Different categories of mobile applications - cooking application - Education applications - Communication applications - Shopping application etc

Digital economy - Identify the methods of payments on the internet - e-Cash , e-cheques , credit cards on the Internet

Electronic Payment Systems - Need and uses of Electronic Payment System- Electronic Fund Transfer-one time password (OTP)-PIN and its importance-internet banking - Credit card - Debit card - UPI, Point of Sale(POS), Security Issues

Mobile Payment System - Different payment types: Mobile Wallets, QR code payments, Payment links, SMS payments, Benefits of Mobile Payment

Security issues in digital payment system ,Online banking frauds

Do's and Don'ts in electronic/mobile payment system

Learning outcome

- Understand various social media technologies and their importance in the day to day life.
- Benefits of social media in digital marketing and Education,
- Awareness on various cybercrimes and cyber security,
- Understand copyright and intellectual property rights

Topics

Social Media – Why & what Social Media – Present and Past - Social media Platforms and applications – Usage in business & Education- social media etiquette

Social media and digital marketing

Information Security – Concepts of Security - two factor authentication(2FA) - Biometric authentication methods - Data Encryption and Decryption- Cryptography

Awareness about cyber crime and Cyber security

Cyber crime - What is cyber crime, Understand the term computer Virus and Malware, Email spamming, Email spoofing, Email bombing, Forgery, Hacking, Cyber Stalking or Bullying, Web jacking, Phishing, Pornography, Cookies and threats

Cyber security - Basic concepts - Elements of security - Data security and protection from cyber attack - Antivirus - password, Concept of Firewall, Digital signature - uses and working

Cyber Laws - An Overview & Scope of Cyber Law - Copyright, Trademarks and Software Patenting - Data Privacy & Confidentiality - Cyber laws in India - IT ACT-objectives, features, offences

DCA 103 - OFFICE AUTOMATION SYSTEMS

Theory Hours - 50 Hrs

Module I - Word Processing and Indian Language Computing (10Hrs)

Learning outcome

- Work with MS Word and Open Office Writer.
- Understand the features affecting the page layout.
- Understand to use Indian languages in preparation of documents.

Topics

Introduction to Word Processing - Word Processor Basics, typing text, selecting, copying and deleting text

Creating and formatting documents using MS - Word :- MS Word Interface, Toolbars, Ribbon and Menus; Creating a new word document; Clipboard, Cut, Copy, Paste text; Find, Replace and select Text; Insert and delete comment; Use of Undo and Redo operations; Saving a document; Opening and closing a document

Text Formatting - Familiarise various Fonts, font size, font style; Format text, Bold, Italic, Underline, Strikethrough, Superscript and subscript; Text effects, text highlighting, applying font color; Change the Text Case; Alignment of text; Formatting a paragraph, Drop Cap, spacing, Tabs and Indents ; Copy Formatting with format painter; Using Borders and Shading; Create a numbered list or bulleted list

Working with objects - Insert pictures, shapes, symbols, Date and Time; Insert Text box, charts, Word Art, symbols; Insert Header and Footer, Footnote and End note; Page numbering; Insert a manual page break

Document Formatting - Formatting using themes; Using watermark; Applying Page Borders

Page Layout Settings - Page setup options - Setting Margins, Page orientation, Paper size; Creating documents with columns

Document Review - Checking spelling and grammar in a document; Using of Thesaurus; Auto correct; Tracking changes

Viewing a document - Different views of a document; Zooming; Arranging windows; Creating macros

Styles - Apply a style; Apply a document theme; View all available styles; Change style set; Create a style

Navigation - Open the Navigation pane; Search for a word or phrase; Search for Graphics, Tables, Equations or Comments; View search results; View documents headings; View a document's pages; Adding Hyperlink; Inserting Bookmark

Drawing and Graphics - Insert a picture, screen shot, shapes; Adjust text wrapping; Format, Resize and delete an object

Working with Tables - Insert a table; Manipulating Rows & Columns; Merging & splitting cells ; Adjust Column width or row height; Text Direction

Mail Merging - Creating a Mail Merge Document; Creating address list; Merging Main Document with data, Saving

Printing a document - Previewing, settings - Print All / Current Page / Custom Print; Printing a document; Advanced Printing Options

Converting documents to other file formats(eg- pdf)

MS Word Keyboard shortcuts

Word Processing using Open Office Writer - Working with documents; Formatting documents; Working with Tables; Inserting Pictures/Files etc; Tools - Spell check, macros, mail merge etc; AutoCorrect; Manually running the Spell checker; Finding Synonyms with the Thesaurus; Finding items in a Document; Create and modify Headers and Footers; Create and modify Page numbers; Adding Graphics, Formatting a Picture; Resize a picture, Wrapping a picture around text; Adding borders and colors; Creating a Form Letters; Creating a Data Source; Reviewing the Mail Merge document; Addressing Mailing Labels

Language Computing - Complexities of Indian languages; Pre -Unicode Era; Advantages of Font Encoding; Disadvantages of Font Encoding; What is Unicode? History, Format, varying length encoding; Packages and tools available under Windows for Indian languages; Difference between Unicode and non-Unicode Fonts; Familiarisation of Malayalam typing keyboard

Learning outcome

- Examine spreadsheet concepts and explore the Microsoft Office Excel environment, import and export data

Topics

Introduction to Spreadsheets - Spreadsheet Basics; Use of spreadsheets

MS-EXCEL- Basics; Familiarise MS- Excel Interface; Components of an Excel Workbook; Worksheet, Cell and Cell Address; Create New Workbook; Typing data; Saving and opening and closing a workbook; Preview and print workbook; Undo and Redo operations in workbook; Selecting a cell, cell range, entire worksheet; Different views; Zooming

Spreadsheet manipulations - Editing cell contents; Cut or Copy Data ; Previewing an Item Before Pasting; Paste Special options; Move or Copy Cells Using Drag and Drop; Copy Using Auto Fill; Complete a Series Using AutoFill; Insert a Column or Row; Delete a Column or Row; Insert a Comment; Copying and moving Spreadsheet; Naming, inserting and deleting Spreadsheet

Formatting - Formatting Text – setting Font, font size, style; Setting font color, Bold, Italic, Underline cell contents; Text Wrap, Merge & Center; Format Cell values; Copy Formatting with the Format Painter; Cell Alignments; Applying borders; Apply a Cell Style; Format a Cell Range as a Table; Apply a Document Theme; Conditional Formatting ; Page setup options; Setting header and footer in a worksheet; Inserting page number and page breaks in a worksheet; Setting background in a worksheet; Applying Borders and shading; Fill Series; Sorting & Filtering of data ; Using Auto Sum

Calculations in a spreadsheet - Introduction to formulas and Functions; Creating a formula; Using Functions –various functions in MS Excel and its use; Use of Vlookup function; Reference a Cell in a Formula; Create an Absolute Cell Reference

Sorting and Filtering data in a spreadsheet - Data Sorting; Data Filtering and Advanced filtering; Data Validation; Introduction to Pivot Table and create a Pivot table

Working with Charts - Introduction to Chart and its types; Inserting Column and Pie chart; Manipulating charts

Mail merging using worksheet data - Importing address list from Excel file for mail merging

Workbook Views - Various views of a workbook; Freezing Panes; Using macros in a workbook

Protecting the workbook - Protecting a workbook with a password

Printing the worksheet - Page Setup; Setting Print Area and Print Titles; Print Preview and Print options

MS Excel Keyboard shortcuts

Module III - Presentations (10 Hrs)

Learning outcome

- Knowledge about PowerPoint interface.
- Creating multimedia presentations.
- Using design layouts and templates for presentations.

Topics

Create and Manage Presentations using MS-POWERPOINT - The Basics; Introduction to Presentations and slides; Familiarizing PowerPoint Window; Create a New Presentation; Creating a presentation using templates; Open a Presentation; Saving a Presentation

Working with Slides - Inserting a new slide; Selecting a slide layout; Copying slides; Setting slide background; Applying themes to slide layout; Making duplicate slides

Manipulation of Slide contents - Inserting Text Boxes; Formatting text; Creating list with bullets and numbering; Changing Text directions; Inserting pictures, Shapes, Word Art; Inserting Chart inside a slide; Grouping objects in a slide; Inserting slide header and Footer; Different views

Transitions and Animations - Applying various Slide; Transitions; Animate slide contents, custom animation; Set timing for Transitions and Animations; Creating multimedia presentation - add video and audio

Slide Show - Running a slide show; Creating custom slide show

Topics

Introductions to C programming - Structure of a C program - Input and output Statements - Keywords-Data types - Constants - Variables - Declaring Variable Names - Operators and Expressions - Operator Precedence in Expressions - Increment and Decrement Operators - Conditional Statements - simple if - if-else - switch - Implementing Loops in Programs - The While Loop - The do while Loop - The for Loop - Break and Continue Statement

Module III - C Programming: Arrays and Functions (10Hrs)

Learning outcome

- To understand and apply the functions and arrays.
- To implement the features of C language in real world applications

Topics

Arrays - Defining and Manipulating Arrays - Array Variable - Syntax Rules for Arrays - Reading and Writing Multidimensional Arrays.
Functions - Functions Definition- Function Calling - Recursive functions - Character Strings -The Character Data Type - Manipulating Strings of Characters- Arrays in Functions.

Module IV - Web Programming: HTML, CSS and JavaScript (10Hrs)

Learning outcome

- To understand the working of a web application.
- Understanding the use of HTML, CSS and JavaScript in websites
- To develop websites.

Topics

Introduction to web technology - Web application- Web server and Application server - Client and Server - Scripting languages

HTML and HTML5 - HTML Editors - Elements - Attributes - Headings - Paragraphs - Formatting - HTML Comments - Colors - Fonts - Hyperlink- Images - Tables - Lists -- Iframes - Marquee - Forms - Embedding Audio and video

CSS3 Introduction - Syntax - Selectors - External, Internal & Inline Style sheets - Backgrounds - Colors - Text - Fonts - Links - Border - Outline - Margin - Padding - Align - Positioning - Gradients

JavaScript introduction - Syntax - External & Internal usage - Variables - Operators -- Functions - Events - Comparison - Condition -- Loops - Dialog box - Form Validation.

Module V - Introduction to PHP and Python Programming (10Hrs)

Learning outcome

- Understand the features and uses of PHP
- To be able to create web pages using PHP.
- To get a basic understanding on web servers.
- To be able to write programs in the Python programming language.

Topics

Introduction to PHP - Advantages of PHP - Where to use PHP - Installing PHP - PHP Syntax - Variables - Echo and Print - Data Types - Constant - Operators - IF Statement - Switch statement - Loops.

Introduction to Python - Data Types - Variables - Basic Input-Output Operations- Keywords- Identifiers - Literals - Punctuations - Operators - Basic loops and conditions - String - List-Set - Tuple - Dictionary.

Detailed Syllabus (Lab)



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DCA 103 - OFFICE AUTOMATION SYSTEMS

Theory Hours - 50 Hrs

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Learning outcome

- Understand various social media technologies and their importance in the day to day life.
- Benefits of social media in digital marketing and Education,
- Awareness on various cybercrimes and cyber security,
- Understand copyright and intellectual property rights

Topics

Social Media – Why & what Social Media – Present and Past - Social media Platforms and applications – Usage in business & Education- social media etiquette

Social media and digital marketing

Information Security – Concepts of Security - two factor authentication(2FA) - Biometric authentication methods - Data Encryption and Decryption- Cryptography

Awareness about cyber crime and Cyber security

Cyber crime - What is cyber crime, Understand the term computer Virus and Malware, Email spamming, Email spoofing, Email bombing, Forgery, Hacking, Cyber Stalking or Bullying, Web jacking, Phishing, Pornography, Cookies and threats

Cyber security - Basic concepts - Elements of security - Data security and protection from cyber attack - Antivirus - password, Concept of Firewall, Digital signature - uses and working

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Learning outcome

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Cyber Laws - An Overview & Scope of Cyber Law - Copyright, Trademarks and Software Patenting - Data Privacy & Confidentiality - Cyber laws in India - IT ACT-objectives, features, offences

Sharing A Presentation - Convert presentation to PDF ; Convert presentation to Video ; Create an Image from presentation ; Print a PowerPoint Presentation; Broadcast PowerPoint presentation

Open Office Impress - Impress characteristics; Start Impress, Presentation Wizard; Drawing, Zoom, Lines, Rectangle, Freeform line filled, Polygon, Convert objects, Curves; Select objects, Copy objects, Delete objects, Flip objects, Arrange objects, Group objects; Export drawing, Area Fills, Color, Gradient, Hatching, Bitmaps, Transfer settings, Images, Insert images, Filters, Graphics mode, Color, Transparency, Crop, Gallery, Glue points, Size and position, Rotate, Alignment, Text, Text to polygon, Text boxes, Slides, Insert, Clone, Rename, Delete slides; Format, Character, Paragraph, Textbox format, Slide effects, Slide transitions, Sounds ; Automatic transition, Manual transition, Hyperlinks, From text, From images, Bitmaps

Module IV- Basics of Accounting & Billing Systems (10Hrs)

Learning outcome

- After going this module one should get an idea about basic accounting components and can familiarize billing system

Topics

Basics of Accounting - Accounting; Business Transaction; Purchase; Sales; Purchase return (Outward invoice); Sales return (Inward invoice); Assets; Liabilities; Capital; Debtors; Creditor; Debit; Credit; Drawings; Receipts; Account; Ledger; Journal entries; Trial balance; Profit; Profit & loss account; Balance Sheet

Billing System - Introduction; Need of Billing System; Features of Billing System; GST Billing; Billing using MS-Excel

Module V - Printing Technologies & Multimedia (10Hrs)

Learning outcome

- Knowledge about modern printing technologies, DTP, familiarize with image tools and Multimedia techniques

Topics

Printing Technologies - Introduction to various modern Printing processes; Printing Technology using DTP; Advantages of DTP; Introduction to DTP software; Use of various

tools in MS Paint, GIMP; Importing Graphics; Image Compression; Electronic Image file formats- BMP, JPEG, TIFF, GIF & PNG ; Topographic design; Vector drawing techniques; Portable Document Format (PDF)

Multimedia - Definition; Multimedia systems, elements & applications; Multimedia system architecture; Digital media and Hyper media; Multimedia file formats & standards; Types and methods of compression and decompression; Multimedia I/O Technologies; Adding text, integrating audio with Video; Image enhancing designing techniques; Image authoring and editing tools

DCA 104 - PRINCIPLES OF PROGRAMMING AND WEB TECHNOLOGIES

Theory Hours - 50 Hrs

Module I - Basics of Programming (10Hrs)

Learning outcome

- Understand the methodology to solve the problem, algorithm, flowchart & coding
- To identify programming language classifications.
- To Learn Object oriented programming concepts.
- Understand the features & architecture of Microprocessor generations and types.

Topics

Algorithms - Properties of a good algorithm - Flowchart - Problem-solving using Computer - Introduction to Programming Languages - Machine Language - Assembly Language - High Level Programming Languages - Procedure Orientation and Object Orientation - Object Orientation concepts - Compiler and interpreter - Introduction to Microprocessor & Microcontroller Programming Operation Cycle (Fetch, Decode, Execute, Store)

Module II- Introduction to C Programming (10Hrs)

Learning outcome

- To provide an overview of working principles of C language.
- Construct, compile, link & execute the C programs
- To learn and implement C language programming techniques.

**CENTRE FOR DEVELOPMENT OF IMAGING TECHNOLOGY
TECHNOLOGY EXTENSION DIVISION**

SYLLABUS

DIPLOMA IN COMPUTER APPLICATION (DCA)	
Scheme: 2022 Scheme Duration: 6 Months Eligibility: SSLC or Equivalent	
THEORY SUBJECTS	
DCA 101	Introduction to Information System
DCA 102	Networking and Internet
DCA 103	Office Automation Systems
DCA 104	Principles of Programming and Web Technologies
LAB SUBJECTS	
DCA 105	Lab I-Computer Basics and Office Automation
DCA 106	Lab II- Programming in C and Python & Web Application Development
ANNEXURE	
Assignments for Theory & Questions for Lab	

Detailed Syllabus(Theory)

DCA 101 - INTRODUCTION TO INFORMATION SYSTEM

Theory Hours - 50 Hrs

Module I - Computer Fundamentals (10Hrs)

Learning outcome

- Understanding of the concept and architecture of computers.
- How a computer system works?
- Learning the basic terminologies.

Topics

Introduction :- Fundamentals - Definition, Hardware, Software, Operating System, data, information etc; Functions and Characteristics; Applications of Computers; Capabilities and Limitations

Familiarise different generations of computer

Computer classifications :- Analogue / Digital / Hybrid, PC, Microcomputer, Minicomputer, Mainframe computer, Super Computer.

Components of a computer :- Input Unit ; Output Unit ; CPU ; Memory unit

Input devices :- Keyboard; Mouse; Scanner; Digital/ Web Camera; Touch screen; graphic tablet

Output Devices :- VDU; Printer; Audio Output devices; LCD Projector

Intelligent terminal and dumb terminal

Memory Unit ; Volatile and Non-Volatile memory ; Primary Memory ; Secondary Memory ; BIOS Memory ; Cache Memory ; Virtual memory ; SIMM ; DIMM ; Storage devices; online / offline storage.

Familiarisation of other hardware components :- SMPS ; Motherboard ; Video Cards - PCI, PCI Express, and AGP ; Multimedia Cards - Sound Cards, TV Tuner Cards and Capture Cards ; I/O Cards - SCSI, Serial, USB, and Parallel ; Communications Cards - NICs and Modems

Ports :- Characteristics and different types - Serial, Parallel, USB, Ethernet port etc

Configuring the Peripheral Devices ; methods for connecting peripherals to system - different types of cable connection, explain Bluetooth and Wi-Fi / IR, NFC connectivity

Data representation in computers :- Number System - Types, examples, Conversion rules ;

Coding system - ASCII, BCD, EBCDIC, ISCII, Parity Bit, etc.

Units :- Time Units - Milliseconds, Microseconds, Nanoseconds, Pico seconds ; storage units - Bit, Byte, Kilo Byte, Mega Byte, Giga Byte, Tera Byte, Peta Byte, Exa Byte, Nibble.

Module II - Basics of Information Technology (10Hrs)

Learning outcome

- Acknowledge the role of technologies in today's society
- To identify the basic hardware and software components of a computer and explore their functioning
- Learn about various operating systems

Topics

Introduction to IT - Role of IT in society - Advantages and Disadvantages, Characteristics and features of IT, Application areas - Science and Engineering, Education, Business and Commerce, Medicine and Entertainment - Advantages & Disadvantages of IT

Basics of Computer System - Generations & Peripheral devices - Hardware - Software - system software & application software-off the shelf and custom software-programming languages-compilers-interpreters- Operating systems: structure & functions - Types of Operating system: Batch processing OS, Mutitasking OS, Multiprocessing OS, Time sharing OS ,Real Time OS, Distributed OS, Network OS-Examples of OS: MS-DOS, MS-Windows, Linux Ubuntu, Apple Macintosh

Data and information Concepts -- Importance of data and information, Difference between data and information

Introduction to ITES (IT Enabled Services) - what are IT enabled services? Benefits and threats, ITES fields - BPO - GIS - Call Centers - Data Management Services - Medical Transcription - Data Digitization, Web services, Payroll management, Telemarketing

Module III - Basics of Software (10Hrs)

Learning outcome

- Distinguish System software and Application software.
- Commonly used operating systems.
- Identify the primary functions of Operating Systems.
- Installation and configuration of software.

Topics

Types of Software :- Software - System software , Application software, Utility Software ; Demo ware ; Shareware ; Freeware ; Firmware ; Free and Open Source Software.

Operating Systems :- Functions, Types - Batch Processing , Single User, Multi User, Multiprogramming, Multi-Tasking (Multiprocessing); Familiarise Multithreading

Booting and Shutdown of Computers ; BIOS ; POST ; Master Boot Record(MBR)

Introduction to old versions of Windows OS

Detailed study of Windows :- Overview ; GUI basics (Desktop, taskbar, icons, desktop background management) ; Navigation (Start menu, File explorer) ; Accessories ; Control Panel ; User Account management ; storage management ; file and folder management ; keyboard shortcuts ; data backup

Familiarise Ubuntu Linux :- Introduction ; History ; Versions ; basics

Familiarising Command mode :- Windows (DOS) ; Linux (Terminal)

Familiarize other operating systems :- UNIX ; Apple Macintosh

Linux commands

Computer Virus :- Introduction ; Mechanism of Virus ; How a virus spreads ; How is virus named ; A few prominent viruses ; Types of Computer Virus ; Related Concepts - Antivirus programs - Norton antivirus program

Module IV - Basics of Information System (10Hrs)

Learning outcome

- Knowledge about information system, its capabilities and uses with IT infrastructure in a business enterprise to achieve desired goals.

Topics

Information System :- Data, Information & System ; Information System; Dimensions of Information System - Organization, Management, IT ; Functions of Information System

Business Information Systems :- Role of Business Information Systems - Top, Middle, Bottom ;

Types of Business Information Systems - TPS, MIS, EIS, DSS, AI/Expert Systems

Management Information System(MIS) :- Objectives ; Components ; Functions ; Resources ; Characteristics; Terminologies and Applications

Enterprise System and Types :- ERP ; CRM ; SCM

Module V – Basics of Databases (10Hrs)

Learning outcome

- Knowledge about data processing, data management systems, relational data model, familiarize MS Access, SQL and importing of Excel files.

Topics

Database Management System - Introduction; Data Processing Vs. Data Management Systems ; Database Concepts; Characteristics of Database; Types of Database System; Advantages and Disadvantages of a DBMS ; Database Administrators and Database Users

Creating database using MS Access - Importing Excel files to MS Access; Using Forms-creating a form and editing data using form

Relational Model Concepts - Data Definition Language (DDL) ; Data Manipulation Language (DML); Introduction to SQL; SQL commands; Importing Excel files to SQL; Familiarise MySQL, NoSQL and Oracle

DCA 102 - NETWORKING AND INTERNET

Theory Hours - 50 Hrs

Module I - Computer Networks (10Hrs)

Learning outcome

- Knowledge about networking technologies and types of networks, devices used, security devices, topologies, nodes, mobile communication and latest technologies

Topics

Introduction to Computer Networks - Evolution of Networking, Wired & Wireless Networking

Types of Networks - LAN (Local Area Network) , MAN (Metropolitan Area Network) , WAN (Wide Area Network) , PAN (Personal Area Network)

Network Devices - Hub, Switch, Router, Bridge, Gateway; Modem, Repeater, Access Point; Modem, Ethernet Card, RJ11, RJ45

Network Security Devices - Active Devices, Passive Devices, Preventative Devices, Unified Threat Management (UTM), Firewalls

Integrated Services Digital Network (ISDN)

Networking Topologies - Bus Topology, Star Topology, Ring Topology, Mesh Topology, Tree or Hybrid Topology

Nodes in a Networked Communication - Types of Nodes, MAC Address, IP Address, IPv4, IPv6

Connecting to Internet - Connecting the computer to the Internet

Types of connectivity - Dial-up; Wired broadband connectivity - ISDN, Cable Internet, DSL, Leased Line, FTTH; Wireless broadband connectivity - Mobile broadband, Wi-MAX, Satellite broadband

Internet Access sharing methods - LAN, Wi-Fi, Li-Fi

Services on Internet - World Wide Web (WWW), Browser, Web browsing, Search Engines, E-mail, Social media; Various stages of Data Transfer from Server to Client; Domain Name; Resolution; Mobile communication;

Learning outcome

- Understand mobile computing, its principles and theories.
- List applications in different domains that mobile computing offers to the public, employees, and businesses.
- Understand the various options of payments - online & mobile payment, smart cards etc

Topics

Mobile Computing - Introduction and Concepts- mobile communication, mobile hardware and software, Mobile Device Operating Systems - Android, iOS, - Generations of Mobile Communication Technologies

e-Commerce & m-Commerce System Security

Familiarisation of mobile applications - Introduction to mobile applications-types of mobile applications-native web and hybrid, Different categories of mobile applications - cooking application - Education applications - Communication applications - Shopping application etc

Digital economy - Identify the methods of payments on the internet - e-Cash , e-cheques , credit cards on the Internet

Electronic Payment Systems - Need and uses of Electronic Payment System- Electronic Fund Transfer-one time password (OTP)-PIN and its importance-internet banking - Credit card - Debit card - UPI, Point of Sale(POS), Security Issues

Mobile Payment System - Different payment types: Mobile Wallets, QR code payments, Payment links, SMS payments, Benefits of Mobile Payment

Security issues in digital payment system ,Online banking frauds

Do's and Don'ts in electronic/mobile payment system

Learning outcome

- Understand mobile computing, its principles and theories.
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Mobile Payment System - Different payment types: Mobile Wallets, QR code payments, Payment links, SMS payments, Benefits of Mobile Payment

Security issues in digital payment system ,Online banking frauds

Do's and Don'ts in electronic/mobile payment system

Learning outcome

- Understand various social media technologies and their importance in the day to day life.
- Benefits of social media in digital marketing and Education,
- Awareness on various cybercrimes and cyber security,
- Understand copyright and intellectual property rights

Topics

Social Media – Why & what Social Media – Present and Past - Social media Platforms and applications – Usage in business & Education- social media etiquette

Social media and digital marketing

Information Security – Concepts of Security - two factor authentication(2FA) - Biometric authentication methods - Data Encryption and Decryption- Cryptography

Awareness about cyber crime and Cyber security

Cyber crime - What is cyber crime, Understand the term computer Virus and Malware, Email spamming, Email spoofing, Email bombing, Forgery, Hacking, Cyber Stalking or Bullying, Web jacking, Phishing, Pornography, Cookies and threats

Cyber security - Basic concepts - Elements of security - Data security and protection from cyber attack - Antivirus - password, Concept of Firewall, Digital signature - uses and working

Cyber Laws - An Overview & Scope of Cyber Law - Copyright, Trademarks and Software Patenting - Data Privacy & Confidentiality - Cyber laws in India - IT ACT-objectives, features, offences

DCA 103 - OFFICE AUTOMATION SYSTEMS

Theory Hours - 50 Hrs

Module I - Word Processing and Indian Language Computing (10Hrs)

Learning outcome

- Work with MS Word and Open Office Writer.
- Understand the features affecting the page layout.
- Understand to use Indian languages in preparation of documents.

Topics

Introduction to Word Processing - Word Processor Basics, typing text, selecting, copying and deleting text

Creating and formatting documents using MS - Word :- MS Word Interface, Toolbars, Ribbon and Menus; Creating a new word document; Clipboard, Cut, Copy, Paste text; Find, Replace and select Text; Insert and delete comment; Use of Undo and Redo operations; Saving a document; Opening and closing a document

Text Formatting - Familiarise various Fonts, font size, font style; Format text, Bold, Italic, Underline, Strikethrough, Superscript and subscript; Text effects, text highlighting, applying font color; Change the Text Case; Alignment of text; Formatting a paragraph, Drop Cap, spacing, Tabs and Indents ; Copy Formatting with format painter; Using Borders and Shading; Create a numbered list or bulleted list

Working with objects - Insert pictures, shapes, symbols, Date and Time; Insert Text box, charts, Word Art, symbols; Insert Header and Footer, Footnote and End note; Page numbering; Insert a manual page break

Document Formatting - Formatting using themes; Using watermark; Applying Page Borders

Page Layout Settings - Page setup options - Setting Margins, Page orientation, Paper size; Creating documents with columns

Document Review - Checking spelling and grammar in a document; Using of Thesaurus; Auto correct; Tracking changes

Viewing a document - Different views of a document; Zooming; Arranging windows; Creating macros

Styles - Apply a style; Apply a document theme; View all available styles; Change style set; Create a style

Navigation - Open the Navigation pane; Search for a word or phrase; Search for Graphics, Tables, Equations or Comments; View search results; View documents headings; View a document's pages; Adding Hyperlink; Inserting Bookmark

Drawing and Graphics - Insert a picture, screen shot, shapes; Adjust text wrapping; Format, Resize and delete an object

Working with Tables - Insert a table; Manipulating Rows & Columns; Merging & splitting cells ; Adjust Column width or row height; Text Direction

Mail Merging - Creating a Mail Merge Document; Creating address list; Merging Main Document with data, Saving

Printing a document - Previewing, settings - Print All / Current Page / Custom Print; Printing a document; Advanced Printing Options

Converting documents to other file formats(eg- pdf)

MS Word Keyboard shortcuts

Word Processing using Open Office Writer - Working with documents; Formatting documents; Working with Tables; Inserting Pictures/Files etc; Tools - Spell check, macros, mail merge etc; AutoCorrect; Manually running the Spell checker; Finding Synonyms with the Thesaurus; Finding items in a Document; Create and modify Headers and Footers; Create and modify Page numbers; Adding Graphics, Formatting a Picture; Resize a picture, Wrapping a picture around text; Adding borders and colors; Creating a Form Letters; Creating a Data Source; Reviewing the Mail Merge document; Addressing Mailing Labels

Language Computing - Complexities of Indian languages; Pre -Unicode Era; Advantages of Font Encoding; Disadvantages of Font Encoding; What is Unicode? History, Format, varying length encoding; Packages and tools available under Windows for Indian languages; Difference between Unicode and non-Unicode Fonts; Familiarisation of Malayalam typing keyboard

Learning outcome

- Examine spreadsheet concepts and explore the Microsoft Office Excel environment, import and export data

Topics

Introduction to Spreadsheets - Spreadsheet Basics; Use of spreadsheets

MS-EXCEL- Basics; Familiarise MS- Excel Interface; Components of an Excel Workbook; Worksheet, Cell and Cell Address; Create New Workbook; Typing data; Saving and opening and closing a workbook; Preview and print workbook; Undo and Redo operations in workbook; Selecting a cell, cell range, entire worksheet; Different views; Zooming

Spreadsheet manipulations - Editing cell contents; Cut or Copy Data ; Previewing an Item Before Pasting; Paste Special options; Move or Copy Cells Using Drag and Drop; Copy Using Auto Fill; Complete a Series Using AutoFill; Insert a Column or Row; Delete a Column or Row; Insert a Comment; Copying and moving Spreadsheet; Naming, inserting and deleting Spreadsheet

Formatting - Formatting Text – setting Font, font size, style; Setting font color, Bold, Italic, Underline cell contents; Text Wrap, Merge & Center; Format Cell values; Copy Formatting with the Format Painter; Cell Alignments; Applying borders; Apply a Cell Style; Format a Cell Range as a Table; Apply a Document Theme; Conditional Formatting ; Page setup options; Setting header and footer in a worksheet; Inserting page number and page breaks in a worksheet; Setting background in a worksheet; Applying Borders and shading; Fill Series; Sorting & Filtering of data ; Using Auto Sum

Calculations in a spreadsheet - Introduction to formulas and Functions; Creating a formula; Using Functions –various functions in MS Excel and its use; Use of Vlookup function; Reference a Cell in a Formula; Create an Absolute Cell Reference

Sorting and Filtering data in a spreadsheet - Data Sorting; Data Filtering and Advanced filtering; Data Validation; Introduction to Pivot Table and create a Pivot table

Working with Charts - Introduction to Chart and its types; Inserting Column and Pie chart; Manipulating charts

Mail merging using worksheet data - Importing address list from Excel file for mail merging

Workbook Views - Various views of a workbook; Freezing Panes; Using macros in a workbook

Protecting the workbook - Protecting a workbook with a password

Printing the worksheet - Page Setup; Setting Print Area and Print Titles; Print Preview and Print options

MS Excel Keyboard shortcuts

Module III - Presentations (10 Hrs)

Learning outcome

- Knowledge about PowerPoint interface.
- Creating multimedia presentations.
- Using design layouts and templates for presentations.

Topics

Create and Manage Presentations using MS-POWERPOINT - The Basics; Introduction to Presentations and slides; Familiarizing PowerPoint Window; Create a New Presentation; Creating a presentation using templates; Open a Presentation; Saving a Presentation

Working with Slides - Inserting a new slide; Selecting a slide layout; Copying slides; Setting slide background; Applying themes to slide layout; Making duplicate slides

Manipulation of Slide contents - Inserting Text Boxes; Formatting text; Creating list with bullets and numbering; Changing Text directions; Inserting pictures, Shapes, Word Art; Inserting Chart inside a slide; Grouping objects in a slide; Inserting slide header and Footer; Different views

Transitions and Animations - Applying various Slide; Transitions; Animate slide contents, custom animation; Set timing for Transitions and Animations; Creating multimedia presentation - add video and audio

Slide Show - Running a slide show; Creating custom slide show

Topics

Introductions to C programming - Structure of a C program - Input and output Statements - Keywords-Data types - Constants - Variables - Declaring Variable Names - Operators and Expressions - Operator Precedence in Expressions - Increment and Decrement Operators - Conditional Statements - simple if - if-else - switch - Implementing Loops in Programs - The While Loop - The do while Loop - The for Loop - Break and Continue Statement

Module III - C Programming: Arrays and Functions (10Hrs)

Learning outcome

- To understand and apply the functions and arrays.
- To implement the features of C language in real world applications

Topics

Arrays - Defining and Manipulating Arrays - Array Variable - Syntax Rules for Arrays - Reading and Writing Multidimensional Arrays.
Functions - Functions Definition- Function Calling - Recursive functions - Character Strings -The Character Data Type - Manipulating Strings of Characters- Arrays in Functions.

Module IV - Web Programming: HTML, CSS and JavaScript (10Hrs)

Learning outcome

- To understand the working of a web application.
- Understanding the use of HTML, CSS and JavaScript in websites
- To develop websites.

Topics

Introduction to web technology - Web application- Web server and Application server - Client and Server - Scripting languages

HTML and HTML5 - HTML Editors - Elements - Attributes - Headings - Paragraphs - Formatting - HTML Comments - Colors - Fonts - Hyperlink- Images - Tables - Lists -- Iframes - Marquee - Forms - Embedding Audio and video

CSS3 Introduction - Syntax - Selectors - External, Internal & Inline Style sheets - Backgrounds - Colors - Text - Fonts - Links - Border - Outline - Margin - Padding - Align - Positioning - Gradients

JavaScript introduction - Syntax - External & Internal usage - Variables - Operators -- Functions - Events - Comparison - Condition -- Loops - Dialog box - Form Validation.

Module V - Introduction to PHP and Python Programming (10Hrs)

Learning outcome

- Understand the features and uses of PHP
- To be able to create web pages using PHP.
- To get a basic understanding on web servers.
- To be able to write programs in the Python programming language.

Topics

Introduction to PHP - Advantages of PHP - Where to use PHP - Installing PHP - PHP Syntax - Variables - Echo and Print - Data Types - Constant - Operators - IF Statement - Switch statement - Loops.

Introduction to Python - Data Types - Variables - Basic Input-Output Operations- Keywords- Identifiers - Literals - Punctuations - Operators - Basic loops and conditions - String - List-Set - Tuple - Dictionary.

Detailed Syllabus (Lab)



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DCA 103 - OFFICE AUTOMATION SYSTEMS

Theory Hours - 50 Hrs

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Learning outcome

- Understand various social media technologies and their importance in the day to day life.
- Benefits of social media in digital marketing and Education,
- Awareness on various cybercrimes and cyber security,
- Understand copyright and intellectual property rights

Topics

Social Media – Why & what Social Media – Present and Past - Social media Platforms and applications – Usage in business & Education- social media etiquette

Social media and digital marketing

Information Security – Concepts of Security - two factor authentication(2FA) - Biometric authentication methods - Data Encryption and Decryption- Cryptography

Awareness about cyber crime and Cyber security

Cyber crime - What is cyber crime, Understand the term computer Virus and Malware, Email spamming, Email spoofing, Email bombing, Forgery, Hacking, Cyber Stalking or Bullying, Web jacking, Phishing, Pornography, Cookies and threats

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Cyber Laws - An Overview & Scope of Cyber Law - Copyright, Trademarks and Software Patenting - Data Privacy & Confidentiality - Cyber laws in India - IT ACT-objectives, features, offences

Sharing A Presentation - Convert presentation to PDF ; Convert presentation to Video ; Create an Image from presentation ; Print a PowerPoint Presentation; Broadcast PowerPoint presentation

Open Office Impress - Impress characteristics; Start Impress, Presentation Wizard; Drawing, Zoom, Lines, Rectangle, Freeform line filled, Polygon, Convert objects, Curves; Select objects, Copy objects, Delete objects, Flip objects, Arrange objects, Group objects; Export drawing, Area Fills, Color, Gradient, Hatching, Bitmaps, Transfer settings, Images, Insert images, Filters, Graphics mode, Color, Transparency, Crop, Gallery, Glue points, Size and position, Rotate, Alignment, Text, Text to polygon, Text boxes, Slides, Insert, Clone, Rename, Delete slides; Format, Character, Paragraph, Textbox format, Slide effects, Slide transitions, Sounds ; Automatic transition, Manual transition, Hyperlinks, From text, From images, Bitmaps

Module IV- Basics of Accounting & Billing Systems (10Hrs)

Learning outcome

- After going this module one should get an idea about basic accounting components and can familiarize billing system

Topics

Basics of Accounting - Accounting; Business Transaction; Purchase; Sales; Purchase return (Outward invoice); Sales return (Inward invoice); Assets; Liabilities; Capital; Debtors; Creditor; Debit; Credit; Drawings; Receipts; Account; Ledger; Journal entries; Trial balance; Profit; Profit & loss account; Balance Sheet

Billing System - Introduction; Need of Billing System; Features of Billing System; GST Billing; Billing using MS-Excel

Module V - Printing Technologies & Multimedia (10Hrs)

Learning outcome

- Knowledge about modern printing technologies, DTP, familiarize with image tools and Multimedia techniques

Topics

Printing Technologies - Introduction to various modern Printing processes; Printing Technology using DTP; Advantages of DTP; Introduction to DTP software; Use of various

tools in MS Paint, GIMP; Importing Graphics; Image Compression; Electronic Image file formats- BMP, JPEG, TIFF, GIF & PNG ; Topographic design; Vector drawing techniques; Portable Document Format (PDF)

Multimedia - Definition; Multimedia systems, elements & applications; Multimedia system architecture; Digital media and Hyper media; Multimedia file formats & standards; Types and methods of compression and decompression; Multimedia I/O Technologies; Adding text, integrating audio with Video; Image enhancing designing techniques; Image authoring and editing tools

DCA 104 - PRINCIPLES OF PROGRAMMING AND WEB TECHNOLOGIES

Theory Hours - 50 Hrs

Module I - Basics of Programming (10Hrs)

Learning outcome

- Understand the methodology to solve the problem, algorithm, flowchart & coding
- To identify programming language classifications.
- To Learn Object oriented programming concepts.
- Understand the features & architecture of Microprocessor generations and types.

Topics

Algorithms - Properties of a good algorithm - Flowchart - Problem-solving using Computer - Introduction to Programming Languages - Machine Language - Assembly Language - High Level Programming Languages - Procedure Orientation and Object Orientation - Object Orientation concepts - Compiler and interpreter - Introduction to Microprocessor & Microcontroller Programming Operation Cycle (Fetch, Decode, Execute, Store)

Module II- Introduction to C Programming (10Hrs)

Learning outcome

- To provide an overview of working principles of C language.
- Construct, compile, link & execute the C programs
- To learn and implement C language programming techniques.

**CENTRE FOR DEVELOPMENT OF IMAGING TECHNOLOGY
TECHNOLOGY EXTENSION DIVISION**

SYLLABUS

DIPLOMA IN COMPUTER APPLICATION (DCA)	
Scheme: 2022 Scheme Duration: 6 Months Eligibility: SSLC or Equivalent	
THEORY SUBJECTS	
DCA 101	Introduction to Information System
DCA 102	Networking and Internet
DCA 103	Office Automation Systems
DCA 104	Principles of Programming and Web Technologies
LAB SUBJECTS	
DCA 105	Lab I-Computer Basics and Office Automation
DCA 106	Lab II- Programming in C and Python & Web Application Development
ANNEXURE	
Assignments for Theory & Questions for Lab	

Detailed Syllabus(Theory)

DCA 101 - INTRODUCTION TO INFORMATION SYSTEM

Theory Hours - 50 Hrs

Module I - Computer Fundamentals (10Hrs)

Learning outcome

- Understanding of the concept and architecture of computers.
- How a computer system works?
- Learning the basic terminologies.

Topics

Introduction :- Fundamentals - Definition, Hardware, Software, Operating System, data, information etc; Functions and Characteristics; Applications of Computers; Capabilities and Limitations

Familiarise different generations of computer

Computer classifications :- Analogue / Digital / Hybrid, PC, Microcomputer, Minicomputer, Mainframe computer, Super Computer.

Components of a computer :- Input Unit ; Output Unit ; CPU ; Memory unit

Input devices :- Keyboard; Mouse; Scanner; Digital/ Web Camera; Touch screen; graphic tablet

Output Devices :- VDU; Printer; Audio Output devices; LCD Projector

Intelligent terminal and dumb terminal

Memory Unit ; Volatile and Non-Volatile memory ; Primary Memory ; Secondary Memory ; BIOS Memory ; Cache Memory ; Virtual memory ; SIMM ; DIMM ; Storage devices; online / offline storage.

Familiarisation of other hardware components :- SMPS ; Motherboard ; Video Cards - PCI, PCI Express, and AGP ; Multimedia Cards - Sound Cards, TV Tuner Cards and Capture Cards ; I/O Cards - SCSI, Serial, USB, and Parallel ; Communications Cards - NICs and Modems

Ports :- Characteristics and different types - Serial, Parallel, USB, Ethernet port etc

Configuring the Peripheral Devices ; methods for connecting peripherals to system - different types of cable connection, explain Bluetooth and Wi-Fi / IR, NFC connectivity

Data representation in computers :- Number System - Types, examples, Conversion rules ;

Coding system - ASCII, BCD, EBCDIC, ISCII, Parity Bit, etc.

Units :- Time Units - Milliseconds, Microseconds, Nanoseconds, Pico seconds ; storage units - Bit, Byte, Kilo Byte, Mega Byte, Giga Byte, Tera Byte, Peta Byte, Exa Byte, Nibble.

Module II - Basics of Information Technology (10Hrs)

Learning outcome

- Acknowledge the role of technologies in today's society
- To identify the basic hardware and software components of a computer and explore their functioning
- Learn about various operating systems

Topics

Introduction to IT - Role of IT in society - Advantages and Disadvantages, Characteristics and features of IT, Application areas - Science and Engineering, Education, Business and Commerce, Medicine and Entertainment - Advantages & Disadvantages of IT

Basics of Computer System - Generations & Peripheral devices - Hardware - Software - system software & application software-off the shelf and custom software-programming languages-compilers-interpreters- Operating systems: structure & functions - Types of Operating system: Batch processing OS, Mutitasking OS, Multiprocessing OS, Time sharing OS ,Real Time OS, Distributed OS, Network OS-Examples of OS: MS-DOS, MS-Windows, Linux Ubuntu, Apple Macintosh

Data and information Concepts -- Importance of data and information, Difference between data and information

Introduction to ITES (IT Enabled Services) - what are IT enabled services? Benefits and threats, ITES fields - BPO - GIS - Call Centers - Data Management Services - Medical Transcription - Data Digitization, Web services, Payroll management, Telemarketing

Module III - Basics of Software (10Hrs)

Learning outcome

- Distinguish System software and Application software.
- Commonly used operating systems.
- Identify the primary functions of Operating Systems.
- Installation and configuration of software.

Topics

Types of Software :- Software - System software , Application software, Utility Software ; Demo ware ; Shareware ; Freeware ; Firmware ; Free and Open Source Software.

Operating Systems :- Functions, Types - Batch Processing , Single User, Multi User, Multiprogramming, Multi-Tasking (Multiprocessing); Familiarise Multithreading

Booting and Shutdown of Computers ; BIOS ; POST ; Master Boot Record(MBR)

Introduction to old versions of Windows OS

Detailed study of Windows :- Overview ; GUI basics (Desktop, taskbar, icons, desktop background management) ; Navigation (Start menu, File explorer) ; Accessories ; Control Panel ; User Account management ; storage management ; file and folder management ; keyboard shortcuts ; data backup

Familiarise Ubuntu Linux :- Introduction ; History ; Versions ; basics

Familiarising Command mode :- Windows (DOS) ; Linux (Terminal)

Familiarize other operating systems :- UNIX ; Apple Macintosh

Linux commands

Computer Virus :- Introduction ; Mechanism of Virus ; How a virus spreads ; How is virus named ; A few prominent viruses ; Types of Computer Virus ; Related Concepts - Antivirus programs - Norton antivirus program

Module IV - Basics of Information System (10Hrs)

Learning outcome

- Knowledge about information system, its capabilities and uses with IT infrastructure in a business enterprise to achieve desired goals.

Topics

Information System :- Data, Information & System ; Information System; Dimensions of Information System - Organization, Management, IT ; Functions of Information System

Business Information Systems :- Role of Business Information Systems - Top, Middle, Bottom ;

Types of Business Information Systems - TPS, MIS, EIS, DSS, AI/Expert Systems

Management Information System(MIS) :- Objectives ; Components ; Functions ; Resources ; Characteristics; Terminologies and Applications

Enterprise System and Types :- ERP ; CRM ; SCM

Module V – Basics of Databases (10Hrs)

Learning outcome

- Knowledge about data processing, data management systems, relational data model, familiarize MS Access, SQL and importing of Excel files.

Topics

Database Management System - Introduction; Data Processing Vs. Data Management Systems ; Database Concepts; Characteristics of Database; Types of Database System; Advantages and Disadvantages of a DBMS ; Database Administrators and Database Users

Creating database using MS Access - Importing Excel files to MS Access; Using Forms-creating a form and editing data using form

Relational Model Concepts - Data Definition Language (DDL) ; Data Manipulation Language (DML); Introduction to SQL; SQL commands; Importing Excel files to SQL; Familiarise MySQL, NoSQL and Oracle

DCA 102 - NETWORKING AND INTERNET

Theory Hours - 50 Hrs

Module I - Computer Networks (10Hrs)

Learning outcome

- Knowledge about networking technologies and types of networks, devices used, security devices, topologies, nodes, mobile communication and latest technologies

Topics

Introduction to Computer Networks - Evolution of Networking, Wired & Wireless Networking

Types of Networks - LAN (Local Area Network) , MAN (Metropolitan Area Network) , WAN (Wide Area Network) , PAN (Personal Area Network)

Network Devices - Hub, Switch, Router, Bridge, Gateway; Modem, Repeater, Access Point; Modem, Ethernet Card, RJ11, RJ45

Network Security Devices - Active Devices, Passive Devices, Preventative Devices, Unified Threat Management (UTM), Firewalls

Integrated Services Digital Network (ISDN)

Networking Topologies - Bus Topology, Star Topology, Ring Topology, Mesh Topology, Tree or Hybrid Topology

Nodes in a Networked Communication - Types of Nodes, MAC Address, IP Address, IPv4, IPv6

Connecting to Internet - Connecting the computer to the Internet

Types of connectivity - Dial-up; Wired broadband connectivity - ISDN, Cable Internet, DSL, Leased Line, FTTH; Wireless broadband connectivity - Mobile broadband, Wi-MAX, Satellite broadband

Internet Access sharing methods - LAN, Wi-Fi, Li-Fi

Services on Internet - World Wide Web (WWW), Browser, Web browsing, Search Engines, E-mail, Social media; Various stages of Data Transfer from Server to Client; Domain Name; Resolution; Mobile communication;

Learning outcome

- Understand various social media technologies and their importance in the day to day life.
- Benefits of social media in digital marketing and Education,
- Awareness on various cybercrimes and cyber security,
- Understand copyright and intellectual property rights

Topics

Social Media – Why & what Social Media – Present and Past - Social media Platforms and applications – Usage in business & Education- social media etiquette

Social media and digital marketing

Information Security – Concepts of Security - two factor authentication(2FA) - Biometric authentication methods - Data Encryption and Decryption- Cryptography

Awareness about cyber crime and Cyber security

Cyber crime - What is cyber crime, Understand the term computer Virus and Malware, Email spamming, Email spoofing, Email bombing, Forgery, Hacking, Cyber Stalking or Bullying, Web jacking, Phishing, Pornography, Cookies and threats

Cyber security - Basic concepts - Elements of security - Data security and protection from cyber attack - Antivirus - password, Concept of Firewall, Digital signature - uses and working

Cyber Laws - An Overview & Scope of Cyber Law - Copyright, Trademarks and Software Patenting - Data Privacy & Confidentiality - Cyber laws in India - IT ACT-objectives, features, offences

DCA 103 - OFFICE AUTOMATION SYSTEMS

Theory Hours - 50 Hrs

Module I - Word Processing and Indian Language Computing (10Hrs)

Learning outcome

- Work with MS Word and Open Office Writer.
- Understand the features affecting the page layout.
- Understand to use Indian languages in preparation of documents.

Topics

Introduction to Word Processing - Word Processor Basics, typing text, selecting, copying and deleting text

Creating and formatting documents using MS - Word :- MS Word Interface, Toolbars, Ribbon and Menus; Creating a new word document; Clipboard, Cut, Copy, Paste text; Find, Replace and select Text; Insert and delete comment; Use of Undo and Redo operations; Saving a document; Opening and closing a document

Text Formatting - Familiarise various Fonts, font size, font style; Format text, Bold, Italic, Underline, Strikethrough, Superscript and subscript; Text effects, text highlighting, applying font color; Change the Text Case; Alignment of text; Formatting a paragraph, Drop Cap, spacing, Tabs and Indents ; Copy Formatting with format painter; Using Borders and Shading; Create a numbered list or bulleted list

Working with objects - Insert pictures, shapes, symbols, Date and Time; Insert Text box, charts, Word Art, symbols; Insert Header and Footer, Footnote and End note; Page numbering; Insert a manual page break

Document Formatting - Formatting using themes; Using watermark; Applying Page Borders

Page Layout Settings - Page setup options - Setting Margins, Page orientation, Paper size; Creating documents with columns

Document Review - Checking spelling and grammar in a document; Using of Thesaurus; Auto correct; Tracking changes

Viewing a document - Different views of a document; Zooming; Arranging windows; Creating macros

Styles - Apply a style; Apply a document theme; View all available styles; Change style set; Create a style

Navigation - Open the Navigation pane; Search for a word or phrase; Search for Graphics, Tables, Equations or Comments; View search results; View documents headings; View a document's pages; Adding Hyperlink; Inserting Bookmark

Drawing and Graphics - Insert a picture, screen shot, shapes; Adjust text wrapping; Format, Resize and delete an object

Working with Tables - Insert a table; Manipulating Rows & Columns; Merging & splitting cells ; Adjust Column width or row height; Text Direction

Mail Merging - Creating a Mail Merge Document; Creating address list; Merging Main Document with data, Saving

Printing a document - Previewing, settings - Print All / Current Page / Custom Print; Printing a document; Advanced Printing Options

Converting documents to other file formats(eg- pdf)

MS Word Keyboard shortcuts

Word Processing using Open Office Writer - Working with documents; Formatting documents; Working with Tables; Inserting Pictures/Files etc; Tools - Spell check, macros, mail merge etc; AutoCorrect; Manually running the Spell checker; Finding Synonyms with the Thesaurus; Finding items in a Document; Create and modify Headers and Footers; Create and modify Page numbers; Adding Graphics, Formatting a Picture; Resize a picture, Wrapping a picture around text; Adding borders and colors; Creating a Form Letters; Creating a Data Source; Reviewing the Mail Merge document; Addressing Mailing Labels

Language Computing - Complexities of Indian languages; Pre -Unicode Era; Advantages of Font Encoding; Disadvantages of Font Encoding; What is Unicode? History, Format, varying length encoding; Packages and tools available under Windows for Indian languages; Difference between Unicode and non-Unicode Fonts; Familiarisation of Malayalam typing keyboard

Learning outcome

- Examine spreadsheet concepts and explore the Microsoft Office Excel environment, import and export data

Topics

Introduction to Spreadsheets - Spreadsheet Basics; Use of spreadsheets

MS-EXCEL- Basics; Familiarise MS- Excel Interface; Components of an Excel Workbook; Worksheet, Cell and Cell Address; Create New Workbook; Typing data; Saving and opening and closing a workbook; Preview and print workbook; Undo and Redo operations in workbook; Selecting a cell, cell range, entire worksheet; Different views; Zooming

Spreadsheet manipulations - Editing cell contents; Cut or Copy Data ; Previewing an Item Before Pasting; Paste Special options; Move or Copy Cells Using Drag and Drop; Copy Using Auto Fill; Complete a Series Using AutoFill; Insert a Column or Row; Delete a Column or Row; Insert a Comment; Copying and moving Spreadsheet; Naming, inserting and deleting Spreadsheet

Formatting - Formatting Text – setting Font, font size, style; Setting font color, Bold, Italic, Underline cell contents; Text Wrap, Merge & Center; Format Cell values; Copy Formatting with the Format Painter; Cell Alignments; Applying borders; Apply a Cell Style; Format a Cell Range as a Table; Apply a Document Theme; Conditional Formatting ; Page setup options; Setting header and footer in a worksheet; Inserting page number and page breaks in a worksheet; Setting background in a worksheet; Applying Borders and shading; Fill Series; Sorting & Filtering of data ; Using Auto Sum

Calculations in a spreadsheet - Introduction to formulas and Functions; Creating a formula; Using Functions –various functions in MS Excel and its use; Use of Vlookup function; Reference a Cell in a Formula; Create an Absolute Cell Reference

Sorting and Filtering data in a spreadsheet - Data Sorting; Data Filtering and Advanced filtering; Data Validation; Introduction to Pivot Table and create a Pivot table

Working with Charts - Introduction to Chart and its types; Inserting Column and Pie chart; Manipulating charts

Mail merging using worksheet data - Importing address list from Excel file for mail merging

Workbook Views - Various views of a workbook; Freezing Panes; Using macros in a workbook

Protecting the workbook - Protecting a workbook with a password

Printing the worksheet - Page Setup; Setting Print Area and Print Titles; Print Preview and Print options

MS Excel Keyboard shortcuts

Module III - Presentations (10 Hrs)

Learning outcome

- Knowledge about PowerPoint interface.
- Creating multimedia presentations.
- Using design layouts and templates for presentations.

Topics

Create and Manage Presentations using MS-POWERPOINT - The Basics; Introduction to Presentations and slides; Familiarizing PowerPoint Window; Create a New Presentation; Creating a presentation using templates; Open a Presentation; Saving a Presentation

Working with Slides - Inserting a new slide; Selecting a slide layout; Copying slides; Setting slide background; Applying themes to slide layout; Making duplicate slides

Manipulation of Slide contents - Inserting Text Boxes; Formatting text; Creating list with bullets and numbering; Changing Text directions; Inserting pictures, Shapes, Word Art; Inserting Chart inside a slide; Grouping objects in a slide; Inserting slide header and Footer; Different views

Transitions and Animations - Applying various Slide; Transitions; Animate slide contents, custom animation; Set timing for Transitions and Animations; Creating multimedia presentation - add video and audio

Slide Show - Running a slide show; Creating custom slide show

Topics

Introductions to C programming - Structure of a C program - Input and output Statements - Keywords-Data types - Constants - Variables - Declaring Variable Names - Operators and Expressions - Operator Precedence in Expressions - Increment and Decrement Operators - Conditional Statements - simple if - if-else - switch - Implementing Loops in Programs - The While Loop - The do while Loop - The for Loop - Break and Continue Statement

Module III - C Programming: Arrays and Functions (10Hrs)

Learning outcome

- To understand and apply the functions and arrays.
- To implement the features of C language in real world applications

Topics

Arrays - Defining and Manipulating Arrays - Array Variable - Syntax Rules for Arrays - Reading and Writing Multidimensional Arrays.
Functions - Functions Definition- Function Calling - Recursive functions - Character Strings -The Character Data Type - Manipulating Strings of Characters- Arrays in Functions.

Module IV - Web Programming: HTML, CSS and JavaScript (10Hrs)

Learning outcome

- To understand the working of a web application.
- Understanding the use of HTML, CSS and JavaScript in websites
- To develop websites.

Topics

Introduction to web technology - Web application- Web server and Application server - Client and Server - Scripting languages

HTML and HTML5 - HTML Editors - Elements - Attributes - Headings - Paragraphs - Formatting - HTML Comments - Colors - Fonts - Hyperlink- Images - Tables - Lists -- Iframes - Marquee - Forms - Embedding Audio and video

CSS3 Introduction - Syntax - Selectors - External, Internal & Inline Style sheets - Backgrounds - Colors - Text - Fonts - Links - Border - Outline - Margin - Padding - Align - Positioning - Gradients

JavaScript introduction - Syntax - External & Internal usage - Variables - Operators -- Functions - Events - Comparison - Condition -- Loops - Dialog box - Form Validation.

Module V - Introduction to PHP and Python Programming (10Hrs)

Learning outcome

- Understand the features and uses of PHP
- To be able to create web pages using PHP.
- To get a basic understanding on web servers.
- To be able to write programs in the Python programming language.

Topics

Introduction to PHP - Advantages of PHP - Where to use PHP - Installing PHP - PHP Syntax - Variables - Echo and Print - Data Types - Constant - Operators - IF Statement - Switch statement - Loops.

Introduction to Python - Data Types - Variables - Basic Input-Output Operations- Keywords- Identifiers - Literals - Punctuations - Operators - Basic loops and conditions - String - List-Set - Tuple - Dictionary.

Detailed Syllabus (Lab)



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DCA 103 - OFFICE AUTOMATION SYSTEMS

Theory Hours - 50 Hrs

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- Benefits of social media in digital marketing and Education,
- Awareness on various cybercrimes and cyber security,
- Understand copyright and intellectual property rights

Topics

Social Media – Why & what Social Media – Present and Past - Social media Platforms and applications – Usage in business & Education- social media etiquette

Social media and digital marketing

Information Security – Concepts of Security - two factor authentication(2FA) - Biometric authentication methods - Data Encryption and Decryption- Cryptography

Awareness about cyber crime and Cyber security

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Cyber Laws - An Overview & Scope of Cyber Law - Copyright, Trademarks and Software Patenting - Data Privacy & Confidentiality - Cyber laws in India - IT ACT-objectives, features, offences

Sharing A Presentation - Convert presentation to PDF ; Convert presentation to Video ; Create an Image from presentation ; Print a PowerPoint Presentation; Broadcast PowerPoint presentation

Open Office Impress - Impress characteristics; Start Impress, Presentation Wizard; Drawing, Zoom, Lines, Rectangle, Freeform line filled, Polygon, Convert objects, Curves; Select objects, Copy objects, Delete objects, Flip objects, Arrange objects, Group objects; Export drawing, Area Fills, Color, Gradient, Hatching, Bitmaps, Transfer settings, Images, Insert images, Filters, Graphics mode, Color, Transparency, Crop, Gallery, Glue points, Size and position, Rotate, Alignment, Text, Text to polygon, Text boxes, Slides, Insert, Clone, Rename, Delete slides; Format, Character, Paragraph, Textbox format, Slide effects, Slide transitions, Sounds ; Automatic transition, Manual transition, Hyperlinks, From text, From images, Bitmaps

Module IV- Basics of Accounting & Billing Systems (10Hrs)

Learning outcome

- After going this module one should get an idea about basic accounting components and can familiarize billing system

Topics

Basics of Accounting - Accounting; Business Transaction; Purchase; Sales; Purchase return (Outward invoice); Sales return (Inward invoice); Assets; Liabilities; Capital; Debtors; Creditor; Debit; Credit; Drawings; Receipts; Account; Ledger; Journal entries; Trial balance; Profit; Profit & loss account; Balance Sheet

Billing System - Introduction; Need of Billing System; Features of Billing System; GST Billing; Billing using MS-Excel

Module V - Printing Technologies & Multimedia (10Hrs)

Learning outcome

- Knowledge about modern printing technologies, DTP, familiarize with image tools and Multimedia techniques

Topics

Printing Technologies - Introduction to various modern Printing processes; Printing Technology using DTP; Advantages of DTP; Introduction to DTP software; Use of various

tools in MS Paint, GIMP; Importing Graphics; Image Compression; Electronic Image file formats- BMP, JPEG, TIFF, GIF & PNG ; Topographic design; Vector drawing techniques; Portable Document Format (PDF)

Multimedia - Definition; Multimedia systems, elements & applications; Multimedia system architecture; Digital media and Hyper media; Multimedia file formats & standards; Types and methods of compression and decompression; Multimedia I/O Technologies; Adding text, integrating audio with Video; Image enhancing designing techniques; Image authoring and editing tools

DCA 104 - PRINCIPLES OF PROGRAMMING AND WEB TECHNOLOGIES

Theory Hours - 50 Hrs

Module I - Basics of Programming (10Hrs)

Learning outcome

- Understand the methodology to solve the problem, algorithm, flowchart & coding
- To identify programming language classifications.
- To Learn Object oriented programming concepts.
- Understand the features & architecture of Microprocessor generations and types.

Topics

Algorithms - Properties of a good algorithm - Flowchart - Problem-solving using Computer - Introduction to Programming Languages - Machine Language - Assembly Language - High Level Programming Languages - Procedure Orientation and Object Orientation - Object Orientation concepts - Compiler and interpreter - Introduction to Microprocessor & Microcontroller Programming Operation Cycle (Fetch, Decode, Execute, Store)

Module II- Introduction to C Programming (10Hrs)

Learning outcome

- To provide an overview of working principles of C language.
- Construct, compile, link & execute the C programs
- To learn and implement C language programming techniques.

**CENTRE FOR DEVELOPMENT OF IMAGING TECHNOLOGY
TECHNOLOGY EXTENSION DIVISION**

SYLLABUS

DIPLOMA IN COMPUTER APPLICATION (DCA)	
Scheme: 2022 Scheme Duration: 6 Months Eligibility: SSLC or Equivalent	
THEORY SUBJECTS	
DCA 101	Introduction to Information System
DCA 102	Networking and Internet
DCA 103	Office Automation Systems
DCA 104	Principles of Programming and Web Technologies
LAB SUBJECTS	
DCA 105	Lab I-Computer Basics and Office Automation
DCA 106	Lab II- Programming in C and Python & Web Application Development
ANNEXURE	
Assignments for Theory & Questions for Lab	

Detailed Syllabus(Theory)

DCA 101 - INTRODUCTION TO INFORMATION SYSTEM

Theory Hours - 50 Hrs

Module I - Computer Fundamentals (10Hrs)

Learning outcome

- Understanding of the concept and architecture of computers.
- How a computer system works?
- Learning the basic terminologies.

Topics

Introduction :- Fundamentals - Definition, Hardware, Software, Operating System, data, information etc; Functions and Characteristics; Applications of Computers; Capabilities and Limitations

Familiarise different generations of computer

Computer classifications :- Analogue / Digital / Hybrid, PC, Microcomputer, Minicomputer, Mainframe computer, Super Computer.

Components of a computer :- Input Unit ; Output Unit ; CPU ; Memory unit

Input devices :- Keyboard; Mouse; Scanner; Digital/ Web Camera; Touch screen; graphic tablet

Output Devices :- VDU; Printer; Audio Output devices; LCD Projector

Intelligent terminal and dumb terminal

Memory Unit ; Volatile and Non-Volatile memory ; Primary Memory ; Secondary Memory ; BIOS Memory ; Cache Memory ; Virtual memory ; SIMM ; DIMM ; Storage devices; online / offline storage.

Familiarisation of other hardware components :- SMPS ; Motherboard ; Video Cards - PCI, PCI Express, and AGP ; Multimedia Cards - Sound Cards, TV Tuner Cards and Capture Cards ; I/O Cards - SCSI, Serial, USB, and Parallel ; Communications Cards - NICs and Modems

Ports :- Characteristics and different types - Serial, Parallel, USB, Ethernet port etc

Configuring the Peripheral Devices ; methods for connecting peripherals to system - different types of cable connection, explain Bluetooth and Wi-Fi / IR, NFC connectivity

Data representation in computers :- Number System - Types, examples, Conversion rules ;

Coding system - ASCII, BCD, EBCDIC, ISCII, Parity Bit, etc.

Units :- Time Units - Milliseconds, Microseconds, Nanoseconds, Pico seconds ; storage units

- Bit, Byte, Kilo Byte, Mega Byte, Giga Byte, Tera Byte, Peta Byte, Exa Byte, Nibble.

Module II - Basics of Information Technology (10Hrs)

Learning outcome

- Acknowledge the role of technologies in today's society
- To identify the basic hardware and software components of a computer and explore their functioning
- Learn about various operating systems

Topics

Introduction to IT - Role of IT in society - Advantages and Disadvantages, Characteristics and features of IT, Application areas - Science and Engineering, Education, Business and Commerce, Medicine and Entertainment - Advantages & Disadvantages of IT

Basics of Computer System - Generations & Peripheral devices - Hardware - Software - system software & application software-off the shelf and custom software-programming languages-compilers-interpreters- Operating systems: structure & functions - Types of Operating system: Batch processing OS, Mutitasking OS, Multiprocessing OS, Time sharing OS ,Real Time OS, Distributed OS, Network OS-Examples of OS: MS-DOS, MS-Windows, Linux Ubuntu, Apple Macintosh

Data and information Concepts -- Importance of data and information, Difference between data and information

Introduction to ITES (IT Enabled Services) - what are IT enabled services? Benefits and threats, ITES fields - BPO - GIS - Call Centers - Data Management Services - Medical Transcription - Data Digitization, Web services, Payroll management, Telemarketing

Module III - Basics of Software (10Hrs)

Learning outcome

- Distinguish System software and Application software.
- Commonly used operating systems.
- Identify the primary functions of Operating Systems.
- Installation and configuration of software.

Topics

Types of Software :- Software - System software , Application software, Utility Software ; Demo ware ; Shareware ; Freeware ; Firmware ; Free and Open Source Software.

Operating Systems :- Functions, Types - Batch Processing , Single User, Multi User, Multiprogramming, Multi-Tasking (Multiprocessing); Familiarise Multithreading

Booting and Shutdown of Computers ; BIOS ; POST ; Master Boot Record(MBR)

Introduction to old versions of Windows OS

Detailed study of Windows :- Overview ; GUI basics (Desktop, taskbar, icons, desktop background management) ; Navigation (Start menu, File explorer) ; Accessories ; Control Panel ; User Account management ; storage management ; file and folder management ; keyboard shortcuts ; data backup

Familiarise Ubuntu Linux :- Introduction ; History ; Versions ; basics

Familiarising Command mode :- Windows (DOS) ; Linux (Terminal)

Familiarize other operating systems :- UNIX ; Apple Macintosh

Linux commands

Computer Virus :- Introduction ; Mechanism of Virus ; How a virus spreads ; How is virus named ; A few prominent viruses ; Types of Computer Virus ; Related Concepts - Antivirus programs - Norton antivirus program

Module IV - Basics of Information System (10Hrs)

Learning outcome

- Knowledge about information system, its capabilities and uses with IT infrastructure in a business enterprise to achieve desired goals.

Topics

Information System :- Data, Information & System ; Information System; Dimensions of Information System - Organization, Management, IT ; Functions of Information System

Business Information Systems :- Role of Business Information Systems - Top, Middle, Bottom ;

Types of Business Information Systems - TPS, MIS, EIS, DSS, AI/Expert Systems

Management Information System(MIS) :- Objectives ; Components ; Functions ; Resources ; Characteristics; Terminologies and Applications

Enterprise System and Types :- ERP ; CRM ; SCM

Module V – Basics of Databases (10Hrs)

Learning outcome

- Knowledge about data processing, data management systems, relational data model, familiarize MS Access, SQL and importing of Excel files.

Topics

Database Management System - Introduction; Data Processing Vs. Data Management Systems ; Database Concepts; Characteristics of Database; Types of Database System; Advantages and Disadvantages of a DBMS ; Database Administrators and Database Users

Creating database using MS Access - Importing Excel files to MS Access; Using Forms-creating a form and editing data using form

Relational Model Concepts - Data Definition Language (DDL) ; Data Manipulation Language (DML); Introduction to SQL; SQL commands; Importing Excel files to SQL; Familiarise MySQL, NoSQL and Oracle

DCA 102 - NETWORKING AND INTERNET

Theory Hours - 50 Hrs

Module I - Computer Networks (10Hrs)

Learning outcome

- Knowledge about networking technologies and types of networks, devices used, security devices, topologies, nodes, mobile communication and latest technologies

Topics

Introduction to Computer Networks - Evolution of Networking, Wired & Wireless Networking

Types of Networks - LAN (Local Area Network) , MAN (Metropolitan Area Network) , WAN (Wide Area Network) , PAN (Personal Area Network)

Network Devices - Hub, Switch, Router, Bridge, Gateway; Modem, Repeater, Access Point; Modem, Ethernet Card, RJ11, RJ45

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Internet Access sharing methods - LAN, Wi-Fi, Li-Fi

Services on Internet - World Wide Web (WWW), Browser, Web browsing, Search Engines, E-mail, Social media; Various stages of Data Transfer from Server to Client; Domain Name; Resolution; Mobile communication;

Generations in mobile communication - First Generation, Second Generation - GSM, GPRS, EDGE, CDMA, Third Generation - WCDMA, Fourth Generation, Fifth Generation; Mobile communication services- SMS, MMS, GPS, Smart Cards

Mobile Operating System

Latest Technologies - Data Analysis; Cloud Computing; Internet of Things & Edge Computing; Block Chain; Artificial Intelligence & Machine Learning; Augmented Reality & Virtual Reality; Robotic Process Automation (RPA); 5G Spectrum

Module II - Introduction to Internet (10Hrs)

Learning outcome

- Understanding about internet
- Explore different kinds of information available on the Internet, surfing safely and Searching information on the Internet
- Importance of online conference tools in daily life and its usage
- Understand e-learning concept of e-learning and its importance in the modern world.

Topics

Concepts of Internet - Basics of internet connectivity -Applications of Internet -tools and troubleshooting- Intranet and extranet -Internet Services-communication services- Information retrieval services-Web services-World Wide Web-email- Web Browsing softwares - Search Engines - URL - Web Protocols- Domain name - IP Address - Surfing the web

Basics of electronic mail -concept, technology behind email, different email providers, Getting an email account - Sending and receiving emails - mail operations -email folders- applications of Emails-web mail-client mail-email security- email client(eg-outlook)

Online/Web/Mobile Conferences & Tools - introduction towards Audio and Video conferencing - Advantages & Disadvantages -Popular Video conferencing tools

eLearning - What is eLearning, Features and uses, Different eLearning platforms in India, LMS

Learning outcome

- Understand the concept of e-government and the associated benefits and drawbacks
- Gather knowledge on various National and State e-governance initiatives.
- Recognize the benefits and limitations of e-commerce
- Understand major e-commerce business models and their impact in the society

Topics

What is E-Governance, objective, Scope, Benefits and outcomes of e-Governance - **Pillars of e-Governance:** People - Process - Technology - Resources, **Types of interactions in e-Governance:** Government to Citizen (G2C)- Government to Businesses (G2B)-Government to Government (G2G)-Government to Employees (G2E), **Phases of e-Governance Maturity Model** (Phase I: Information, Phase II: Interaction, Phase III- Transaction - Phase IV : Transformation)

e-Governance Infrastructures: Common Service Centre (CSC) - State Wide Area Network (SWAN) - National e-Governance Service Delivery Gateway (NSDG) - State Data Center (SDC)

Challenges to e-Governance, Security approaches to e-Governance

National level e-Governance initiative - Digital India initiative, Major services and projects implemented by union govt and state govt.

e-Commerce (Internet Commerce or electronic commerce) - What is e-Commerce - Features and Scope of e-Commerce - Traditional Commerce vs e-Commerce - e-Commerce Models (B2C, B2B, C2C, C2B, B2G - Benefits and limitations of e-Commerce - Major e-Commerce websites and its usage

Learning outcome

- Understand mobile computing, its principles and theories.
- List applications in different domains that mobile computing offers to the public, employees, and businesses.
- Understand the various options of payments - online & mobile payment, smart cards etc

Topics

Mobile Computing - Introduction and Concepts- mobile communication, mobile hardware and software, Mobile Device Operating Systems – Android, iOS, - Generations of Mobile Communication Technologies

e-Commerce & m-Commerce System Security

Familiarisation of mobile applications - Introduction to mobile applications-types of mobile applications-native web and hybrid, Different categories of mobile applications - cooking application - Education applications - Communication applications - Shopping application etc

Digital economy - Identify the methods of payments on the internet - e-Cash , e-cheques , credit cards on the Internet

Electronic Payment Systems - Need and uses of Electronic Payment System- Electronic Fund Transfer-one time password (OTP)-PIN and its importance-internet banking - Credit card - Debit card - UPI, Point of Sale(POS), Security Issues

Mobile Payment System - Different payment types: Mobile Wallets, QR code payments, Payment links, SMS payments, Benefits of Mobile Payment

Security issues in digital payment system ,Online banking frauds

Do's and Don'ts in electronic/mobile payment system

Learning outcome

- Understand various social media technologies and their importance in the day to day life.
- Benefits of social media in digital marketing and Education,
- Awareness on various cybercrimes and cyber security,
- Understand copyright and intellectual property rights

Topics

Social Media – Why & what Social Media – Present and Past - Social media Platforms and applications – Usage in business & Education- social media etiquette

Social media and digital marketing

Information Security – Concepts of Security - two factor authentication(2FA) - Biometric authentication methods - Data Encryption and Decryption- Cryptography

Awareness about cyber crime and Cyber security

Cyber crime - What is cyber crime, Understand the term computer Virus and Malware, Email spamming, Email spoofing, Email bombing, Forgery, Hacking, Cyber Stalking or Bullying, Web jacking, Phishing, Pornography, Cookies and threats

Cyber security - Basic concepts - Elements of security - Data security and protection from cyber attack - Antivirus - password, Concept of Firewall, Digital signature - uses and working

Cyber Laws - An Overview & Scope of Cyber Law - Copyright, Trademarks and Software Patenting - Data Privacy & Confidentiality - Cyber laws in India - IT ACT-objectives, features, offences

DCA 103 - OFFICE AUTOMATION SYSTEMS

Theory Hours - 50 Hrs

Module I - Word Processing and Indian Language Computing (10Hrs)

Learning outcome

- Work with MS Word and Open Office Writer.
- Understand the features affecting the page layout.
- Understand to use Indian languages in preparation of documents.

Topics

Introduction to Word Processing - Word Processor Basics, typing text, selecting, copying and deleting text

Creating and formatting documents using MS - Word :- MS Word Interface, Toolbars, Ribbon and Menus; Creating a new word document; Clipboard, Cut, Copy, Paste text; Find, Replace and select Text; Insert and delete comment; Use of Undo and Redo operations; Saving a document; Opening and closing a document

Text Formatting - Familiarise various Fonts, font size, font style; Format text, Bold, Italic, Underline, Strikethrough, Superscript and subscript; Text effects, text highlighting, applying font color; Change the Text Case; Alignment of text; Formatting a paragraph, Drop Cap, spacing, Tabs and Indents ; Copy Formatting with format painter; Using Borders and Shading; Create a numbered list or bulleted list

Working with objects - Insert pictures, shapes, symbols, Date and Time; Insert Text box, charts, Word Art, symbols; Insert Header and Footer, Footnote and End note; Page numbering; Insert a manual page break

Document Formatting - Formatting using themes; Using watermark; Applying Page Borders

Page Layout Settings - Page setup options - Setting Margins, Page orientation, Paper size; Creating documents with columns

Document Review - Checking spelling and grammar in a document; Using of Thesaurus; Auto correct; Tracking changes

Viewing a document - Different views of a document; Zooming; Arranging windows; Creating macros

Styles - Apply a style; Apply a document theme; View all available styles; Change style set; Create a style

Navigation - Open the Navigation pane; Search for a word or phrase; Search for Graphics, Tables, Equations or Comments; View search results; View documents headings; View a document's pages; Adding Hyperlink; Inserting Bookmark

Drawing and Graphics - Insert a picture, screen shot, shapes; Adjust text wrapping; Format, Resize and delete an object

Working with Tables - Insert a table; Manipulating Rows & Columns; Merging & splitting cells ; Adjust Column width or row height; Text Direction

Mail Merging - Creating a Mail Merge Document; Creating address list; Merging Main Document with data, Saving

Printing a document - Previewing, settings - Print All / Current Page / Custom Print; Printing a document; Advanced Printing Options

Converting documents to other file formats(eg- pdf)

MS Word Keyboard shortcuts

Word Processing using Open Office Writer - Working with documents; Formatting documents; Working with Tables; Inserting Pictures/Files etc; Tools - Spell check, macros, mail merge etc; AutoCorrect; Manually running the Spell checker; Finding Synonyms with the Thesaurus; Finding items in a Document; Create and modify Headers and Footers; Create and modify Page numbers; Adding Graphics, Formatting a Picture; Resize a picture, Wrapping a picture around text; Adding borders and colors; Creating a Form Letters; Creating a Data Source; Reviewing the Mail Merge document; Addressing Mailing Labels

Language Computing - Complexities of Indian languages; Pre -Unicode Era; Advantages of Font Encoding; Disadvantages of Font Encoding; What is Unicode? History, Format, varying length encoding; Packages and tools available under Windows for Indian languages; Difference between Unicode and non-Unicode Fonts; Familiarisation of Malayalam typing keyboard

Learning outcome

- Examine spreadsheet concepts and explore the Microsoft Office Excel environment, import and export data

Topics

Introduction to Spreadsheets - Spreadsheet Basics; Use of spreadsheets

MS-EXCEL- Basics; Familiarise MS- Excel Interface; Components of an Excel Workbook; Worksheet, Cell and Cell Address; Create New Workbook; Typing data; Saving and opening and closing a workbook; Preview and print workbook; Undo and Redo operations in workbook; Selecting a cell, cell range, entire worksheet; Different views; Zooming

Spreadsheet manipulations - Editing cell contents; Cut or Copy Data ; Previewing an Item Before Pasting; Paste Special options; Move or Copy Cells Using Drag and Drop; Copy Using Auto Fill; Complete a Series Using AutoFill; Insert a Column or Row; Delete a Column or Row; Insert a Comment; Copying and moving Spreadsheet; Naming, inserting and deleting Spreadsheet

Formatting - Formatting Text – setting Font, font size, style; Setting font color, Bold, Italic, Underline cell contents; Text Wrap, Merge & Center; Format Cell values; Copy Formatting with the Format Painter; Cell Alignments; Applying borders; Apply a Cell Style; Format a Cell Range as a Table; Apply a Document Theme; Conditional Formatting ; Page setup options; Setting header and footer in a worksheet; Inserting page number and page breaks in a worksheet; Setting background in a worksheet; Applying Borders and shading; Fill Series; Sorting & Filtering of data ; Using Auto Sum

Calculations in a spreadsheet - Introduction to formulas and Functions; Creating a formula; Using Functions –various functions in MS Excel and its use; Use of Vlookup function; Reference a Cell in a Formula; Create an Absolute Cell Reference

Sorting and Filtering data in a spreadsheet - Data Sorting; Data Filtering and Advanced filtering; Data Validation; Introduction to Pivot Table and create a Pivot table

Working with Charts - Introduction to Chart and its types; Inserting Column and Pie chart; Manipulating charts

Mail merging using worksheet data - Importing address list from Excel file for mail merging

Workbook Views - Various views of a workbook; Freezing Panes; Using macros in a workbook

Protecting the workbook - Protecting a workbook with a password

Printing the worksheet - Page Setup; Setting Print Area and Print Titles; Print Preview and Print options

MS Excel Keyboard shortcuts

Module III - Presentations (10 Hrs)

Learning outcome

- Knowledge about PowerPoint interface.
- Creating multimedia presentations.
- Using design layouts and templates for presentations.

Topics

Create and Manage Presentations using MS-POWERPOINT - The Basics; Introduction to Presentations and slides; Familiarizing PowerPoint Window; Create a New Presentation; Creating a presentation using templates; Open a Presentation; Saving a Presentation

Working with Slides - Inserting a new slide; Selecting a slide layout; Copying slides; Setting slide background; Applying themes to slide layout; Making duplicate slides

Manipulation of Slide contents - Inserting Text Boxes; Formatting text; Creating list with bullets and numbering; Changing Text directions; Inserting pictures, Shapes, Word Art; Inserting Chart inside a slide; Grouping objects in a slide; Inserting slide header and Footer; Different views

Transitions and Animations - Applying various Slide; Transitions; Animate slide contents, custom animation; Set timing for Transitions and Animations; Creating multimedia presentation - add video and audio

Slide Show - Running a slide show; Creating custom slide show

Topics

Introductions to C programming - Structure of a C program - Input and output Statements - Keywords-Data types - Constants - Variables - Declaring Variable Names - Operators and Expressions - Operator Precedence in Expressions - Increment and Decrement Operators - Conditional Statements - simple if - if-else - switch - Implementing Loops in Programs - The While Loop - The do while Loop - The for Loop - Break and Continue Statement

Module III - C Programming: Arrays and Functions (10Hrs)

Learning outcome

- To understand and apply the functions and arrays.
- To implement the features of C language in real world applications

Topics

Arrays - Defining and Manipulating Arrays - Array Variable - Syntax Rules for Arrays - Reading and Writing Multidimensional Arrays.
Functions - Functions Definition- Function Calling - Recursive functions - Character Strings -The Character Data Type - Manipulating Strings of Characters- Arrays in Functions.

Module IV - Web Programming: HTML, CSS and JavaScript (10Hrs)

Learning outcome

- To understand the working of a web application.
- Understanding the use of HTML, CSS and JavaScript in websites
- To develop websites.

Topics

Introduction to web technology - Web application- Web server and Application server - Client and Server - Scripting languages

HTML and HTML5 - HTML Editors - Elements - Attributes - Headings - Paragraphs - Formatting - HTML Comments - Colors - Fonts - Hyperlink- Images - Tables - Lists -- Iframes - Marquee - Forms - Embedding Audio and video

CSS3 Introduction - Syntax - Selectors - External, Internal & Inline Style sheets - Backgrounds - Colors - Text - Fonts - Links - Border - Outline - Margin - Padding - Align - Positioning - Gradients

JavaScript introduction - Syntax - External & Internal usage - Variables - Operators -- Functions - Events - Comparison - Condition -- Loops - Dialog box - Form Validation.

Module V - Introduction to PHP and Python Programming (10Hrs)

Learning outcome

- Understand the features and uses of PHP
- To be able to create web pages using PHP.
- To get a basic understanding on web servers.
- To be able to write programs in the Python programming language.

Topics

Introduction to PHP - Advantages of PHP - Where to use PHP - Installing PHP - PHP Syntax - Variables - Echo and Print - Data Types - Constant - Operators - IF Statement - Switch statement - Loops.

Introduction to Python - Data Types - Variables - Basic Input-Output Operations- Keywords- Identifiers - Literals - Punctuations - Operators - Basic loops and conditions - String - List-Set - Tuple - Dictionary.

Detailed Syllabus (Lab)



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DCA 103 - OFFICE AUTOMATION SYSTEMS

Theory Hours - 50 Hrs

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Learning outcome

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Cyber Laws - An Overview & Scope of Cyber Law - Copyright, Trademarks and Software Patenting - Data Privacy & Confidentiality - Cyber laws in India - IT ACT-objectives, features, offences

Sharing A Presentation - Convert presentation to PDF ; Convert presentation to Video ; Create an Image from presentation ; Print a PowerPoint Presentation; Broadcast PowerPoint presentation

Open Office Impress - Impress characteristics; Start Impress, Presentation Wizard; Drawing, Zoom, Lines, Rectangle, Freeform line filled, Polygon, Convert objects, Curves; Select objects, Copy objects, Delete objects, Flip objects, Arrange objects, Group objects; Export drawing, Area Fills, Color, Gradient, Hatching, Bitmaps, Transfer settings, Images, Insert images, Filters, Graphics mode, Color, Transparency, Crop, Gallery, Glue points, Size and position, Rotate, Alignment, Text, Text to polygon, Text boxes, Slides, Insert, Clone, Rename, Delete slides; Format, Character, Paragraph, Textbox format, Slide effects, Slide transitions, Sounds ; Automatic transition, Manual transition, Hyperlinks, From text, From images, Bitmaps

Module IV- Basics of Accounting & Billing Systems (10Hrs)

Learning outcome

- After going this module one should get an idea about basic accounting components and can familiarize billing system

Topics

Basics of Accounting - Accounting; Business Transaction; Purchase; Sales; Purchase return (Outward invoice); Sales return (Inward invoice); Assets; Liabilities; Capital; Debtors; Creditor; Debit; Credit; Drawings; Receipts; Account; Ledger; Journal entries; Trial balance; Profit; Profit & loss account; Balance Sheet

Billing System - Introduction; Need of Billing System; Features of Billing System; GST Billing; Billing using MS-Excel

Module V - Printing Technologies & Multimedia (10Hrs)

Learning outcome

- Knowledge about modern printing technologies, DTP, familiarize with image tools and Multimedia techniques

Topics

Printing Technologies - Introduction to various modern Printing processes; Printing Technology using DTP; Advantages of DTP; Introduction to DTP software; Use of various

tools in MS Paint, GIMP; Importing Graphics; Image Compression; Electronic Image file formats- BMP, JPEG, TIFF, GIF & PNG ; Topographic design; Vector drawing techniques; Portable Document Format (PDF)

Multimedia - Definition; Multimedia systems, elements & applications; Multimedia system architecture; Digital media and Hyper media; Multimedia file formats & standards; Types and methods of compression and decompression; Multimedia I/O Technologies; Adding text, integrating audio with Video; Image enhancing designing techniques; Image authoring and editing tools

DCA 104 - PRINCIPLES OF PROGRAMMING AND WEB TECHNOLOGIES

Theory Hours - 50 Hrs

Module I - Basics of Programming (10Hrs)

Learning outcome

- Understand the methodology to solve the problem, algorithm, flowchart & coding
- To identify programming language classifications.
- To Learn Object oriented programming concepts.
- Understand the features & architecture of Microprocessor generations and types.

Topics

Algorithms - Properties of a good algorithm - Flowchart - Problem-solving using Computer - Introduction to Programming Languages - Machine Language - Assembly Language - High Level Programming Languages - Procedure Orientation and Object Orientation - Object Orientation concepts - Compiler and interpreter - Introduction to Microprocessor & Microcontroller Programming Operation Cycle (Fetch, Decode, Execute, Store)

Module II- Introduction to C Programming (10Hrs)

Learning outcome

- To provide an overview of working principles of C language.
- Construct, compile, link & execute the C programs
- To learn and implement C language programming techniques.

**CENTRE FOR DEVELOPMENT OF IMAGING TECHNOLOGY
TECHNOLOGY EXTENSION DIVISION**

SYLLABUS

DIPLOMA IN COMPUTER APPLICATION (DCA)	
Scheme: 2022 Scheme Duration: 6 Months Eligibility: SSLC or Equivalent	
THEORY SUBJECTS	
DCA 101	Introduction to Information System
DCA 102	Networking and Internet
DCA 103	Office Automation Systems
DCA 104	Principles of Programming and Web Technologies
LAB SUBJECTS	
DCA 105	Lab I-Computer Basics and Office Automation
DCA 106	Lab II- Programming in C and Python & Web Application Development
ANNEXURE	
Assignments for Theory & Questions for Lab	

Detailed Syllabus(Theory)

DCA 101 - INTRODUCTION TO INFORMATION SYSTEM

Theory Hours - 50 Hrs

Module I - Computer Fundamentals (10Hrs)

Learning outcome

- Understanding of the concept and architecture of computers.
- How a computer system works?
- Learning the basic terminologies.

Topics

Introduction :- Fundamentals - Definition, Hardware, Software, Operating System, data, information etc; Functions and Characteristics; Applications of Computers; Capabilities and Limitations

Familiarise different generations of computer

Computer classifications :- Analogue / Digital / Hybrid, PC, Microcomputer, Minicomputer, Mainframe computer, Super Computer.

Components of a computer :- Input Unit ; Output Unit ; CPU ; Memory unit

Input devices :- Keyboard; Mouse; Scanner; Digital/ Web Camera; Touch screen; graphic tablet

Output Devices :- VDU; Printer; Audio Output devices; LCD Projector

Intelligent terminal and dumb terminal

Memory Unit ; Volatile and Non-Volatile memory ; Primary Memory ; Secondary Memory ; BIOS Memory ; Cache Memory ; Virtual memory ; SIMM ; DIMM ; Storage devices; online / offline storage.

Familiarisation of other hardware components :- SMPS ; Motherboard ; Video Cards - PCI, PCI Express, and AGP ; Multimedia Cards - Sound Cards, TV Tuner Cards and Capture Cards ; I/O Cards - SCSI, Serial, USB, and Parallel ; Communications Cards - NICs and Modems

Ports :- Characteristics and different types - Serial, Parallel, USB, Ethernet port etc

Configuring the Peripheral Devices ; methods for connecting peripherals to system - different types of cable connection, explain Bluetooth and Wi-Fi / IR, NFC connectivity

Data representation in computers :- Number System - Types, examples, Conversion rules ;

Coding system - ASCII, BCD, EBCDIC, ISCII, Parity Bit, etc.

Units :- Time Units - Milliseconds, Microseconds, Nanoseconds, Pico seconds ; storage units - Bit, Byte, Kilo Byte, Mega Byte, Giga Byte, Tera Byte, Peta Byte, Exa Byte, Nibble.

Module II - Basics of Information Technology (10Hrs)

Learning outcome

- Acknowledge the role of technologies in today's society
- To identify the basic hardware and software components of a computer and explore their functioning
- Learn about various operating systems

Topics

Introduction to IT - Role of IT in society - Advantages and Disadvantages, Characteristics and features of IT, Application areas - Science and Engineering, Education, Business and Commerce, Medicine and Entertainment - Advantages & Disadvantages of IT

Basics of Computer System - Generations & Peripheral devices - Hardware - Software - system software & application software-off the shelf and custom software-programming languages-compilers-interpreters- Operating systems: structure & functions - Types of Operating system: Batch processing OS, Mutitasking OS, Multiprocessing OS, Time sharing OS ,Real Time OS, Distributed OS, Network OS-Examples of OS: MS-DOS, MS-Windows, Linux Ubuntu, Apple Macintosh

Data and information Concepts -- Importance of data and information, Difference between data and information

Introduction to ITES (IT Enabled Services) - what are IT enabled services? Benefits and threats, ITES fields - BPO - GIS - Call Centers - Data Management Services - Medical Transcription - Data Digitization, Web services, Payroll management, Telemarketing

Module III - Basics of Software (10Hrs)

Learning outcome

- Distinguish System software and Application software.
- Commonly used operating systems.
- Identify the primary functions of Operating Systems.
- Installation and configuration of software.

Topics

Types of Software :- Software - System software , Application software, Utility Software ; Demo ware ; Shareware ; Freeware ; Firmware ; Free and Open Source Software.

Operating Systems :- Functions, Types - Batch Processing , Single User, Multi User, Multiprogramming, Multi-Tasking (Multiprocessing); Familiarise Multithreading

Booting and Shutdown of Computers ; BIOS ; POST ; Master Boot Record(MBR)

Introduction to old versions of Windows OS

Detailed study of Windows :- Overview ; GUI basics (Desktop, taskbar, icons, desktop background management) ; Navigation (Start menu, File explorer) ; Accessories ; Control Panel ; User Account management ; storage management ; file and folder management ; keyboard shortcuts ; data backup

Familiarise Ubuntu Linux :- Introduction ; History ; Versions ; basics

Familiarising Command mode :- Windows (DOS) ; Linux (Terminal)

Familiarize other operating systems :- UNIX ; Apple Macintosh

Linux commands

Computer Virus :- Introduction ; Mechanism of Virus ; How a virus spreads ; How is virus named ; A few prominent viruses ; Types of Computer Virus ; Related Concepts - Antivirus programs - Norton antivirus program

Module IV - Basics of Information System (10Hrs)

Learning outcome

- Knowledge about information system, its capabilities and uses with IT infrastructure in a business enterprise to achieve desired goals.

Topics

Information System :- Data, Information & System ; Information System; Dimensions of Information System - Organization, Management, IT ; Functions of Information System

Business Information Systems :- Role of Business Information Systems - Top, Middle, Bottom ;

Types of Business Information Systems - TPS, MIS, EIS, DSS, AI/Expert Systems

Management Information System(MIS) :- Objectives ; Components ; Functions ; Resources ; Characteristics; Terminologies and Applications

Enterprise System and Types :- ERP ; CRM ; SCM

Module V – Basics of Databases (10Hrs)

Learning outcome

- Knowledge about data processing, data management systems, relational data model, familiarize MS Access, SQL and importing of Excel files.

Topics

Database Management System - Introduction; Data Processing Vs. Data Management Systems ; Database Concepts; Characteristics of Database; Types of Database System; Advantages and Disadvantages of a DBMS ; Database Administrators and Database Users

Creating database using MS Access - Importing Excel files to MS Access; Using Forms-creating a form and editing data using form

Relational Model Concepts - Data Definition Language (DDL) ; Data Manipulation Language (DML); Introduction to SQL; SQL commands; Importing Excel files to SQL; Familiarise MySQL, NoSQL and Oracle

DCA 102 - NETWORKING AND INTERNET

Theory Hours - 50 Hrs

Module I - Computer Networks (10Hrs)

Learning outcome

- Knowledge about networking technologies and types of networks, devices used, security devices, topologies, nodes, mobile communication and latest technologies

Topics

Introduction to Computer Networks - Evolution of Networking, Wired & Wireless Networking

Types of Networks - LAN (Local Area Network) , MAN (Metropolitan Area Network) , WAN (Wide Area Network) , PAN (Personal Area Network)

Network Devices - Hub, Switch, Router, Bridge, Gateway; Modem, Repeater, Access Point; Modem, Ethernet Card, RJ11, RJ45

Network Security Devices - Active Devices, Passive Devices, Preventative Devices, Unified Threat Management (UTM), Firewalls

Integrated Services Digital Network (ISDN)

Networking Topologies - Bus Topology, Star Topology, Ring Topology, Mesh Topology, Tree or Hybrid Topology

Nodes in a Networked Communication - Types of Nodes, MAC Address, IP Address, IPv4, IPv6

Connecting to Internet - Connecting the computer to the Internet

Types of connectivity - Dial-up; Wired broadband connectivity - ISDN, Cable Internet, DSL, Leased Line, FTTH; Wireless broadband connectivity - Mobile broadband, Wi-MAX, Satellite broadband

Internet Access sharing methods - LAN, Wi-Fi, Li-Fi

Services on Internet - World Wide Web (WWW), Browser, Web browsing, Search Engines, E-mail, Social media; Various stages of Data Transfer from Server to Client; Domain Name; Resolution; Mobile communication;

Generations in mobile communication - First Generation, Second Generation - GSM, GPRS, EDGE, CDMA, Third Generation - WCDMA, Fourth Generation, Fifth Generation; Mobile communication services- SMS, MMS, GPS, Smart Cards

Mobile Operating System

Latest Technologies - Data Analysis; Cloud Computing; Internet of Things & Edge Computing; Block Chain; Artificial Intelligence & Machine Learning; Augmented Reality & Virtual Reality; Robotic Process Automation (RPA); 5G Spectrum

Module II - Introduction to Internet (10Hrs)

Learning outcome

- Understanding about internet
- Explore different kinds of information available on the Internet, surfing safely and Searching information on the Internet
- Importance of online conference tools in daily life and its usage
- Understand e-learning concept of e-learning and its importance in the modern world.

Topics

Concepts of Internet - Basics of internet connectivity -Applications of Internet -tools and troubleshooting- Intranet and extranet -Internet Services-communication services- Information retrieval services-Web services-World Wide Web-email- Web Browsing softwares - Search Engines - URL - Web Protocols- Domain name - IP Address - Surfing the web

Basics of electronic mail -concept, technology behind email, different email providers, Getting an email account - Sending and receiving emails - mail operations -email folders- applications of Emails-web mail-client mail-email security- email client(eg-outlook)

Online/Web/Mobile Conferences & Tools - introduction towards Audio and Video conferencing - Advantages & Disadvantages -Popular Video conferencing tools

eLearning - What is eLearning, Features and uses, Different eLearning platforms in India, LMS

Learning outcome

- Understand the concept of e-government and the associated benefits and drawbacks
- Gather knowledge on various National and State e-governance initiatives.
- Recognize the benefits and limitations of e-commerce
- Understand major e-commerce business models and their impact in the society

Topics

What is E-Governance, objective, Scope, Benefits and outcomes of e-Governance - **Pillars of e-Governance:** People - Process - Technology - Resources, **Types of interactions in e-Governance:** Government to Citizen (G2C)- Government to Businesses (G2B)-Government to Government (G2G)-Government to Employees (G2E), **Phases of e-Governance Maturity Model** (Phase I: Information, Phase II: Interaction, Phase III- Transaction - Phase IV : Transformation)

e-Governance Infrastructures: Common Service Centre (CSC) - State Wide Area Network (SWAN) - National e-Governance Service Delivery Gateway (NSDG) - State Data Center (SDC)

Challenges to e-Governance, Security approaches to e-Governance

National level e-Governance initiative - Digital India initiative, Major services and projects implemented by union govt and state govt.

e-Commerce (Internet Commerce or electronic commerce) - What is e-Commerce - Features and Scope of e-Commerce - Traditional Commerce vs e-Commerce - e-Commerce Models (B2C, B2B, C2C, C2B, B2G - Benefits and limitations of e-Commerce - Major e-Commerce websites and its usage

Learning outcome

- Understand mobile computing, its principles and theories.
- List applications in different domains that mobile computing offers to the public, employees, and businesses.
- Understand the various options of payments - online & mobile payment, smart cards etc

Topics

Mobile Computing - Introduction and Concepts- mobile communication, mobile hardware and software, Mobile Device Operating Systems - Android, iOS, - Generations of Mobile Communication Technologies

e-Commerce & m-Commerce System Security

Familiarisation of mobile applications - Introduction to mobile applications-types of mobile applications-native web and hybrid, Different categories of mobile applications - cooking application - Education applications - Communication applications - Shopping application etc

Digital economy - Identify the methods of payments on the internet - e-Cash , e-cheques , credit cards on the Internet

Electronic Payment Systems - Need and uses of Electronic Payment System- Electronic Fund Transfer-one time password (OTP)-PIN and its importance-internet banking - Credit card - Debit card - UPI, Point of Sale(POS), Security Issues

Mobile Payment System - Different payment types: Mobile Wallets, QR code payments, Payment links, SMS payments, Benefits of Mobile Payment

Security issues in digital payment system ,Online banking frauds

Do's and Don'ts in electronic/mobile payment system

Learning outcome

- Understand various social media technologies and their importance in the day to day life.
- Benefits of social media in digital marketing and Education,
- Awareness on various cybercrimes and cyber security,
- Understand copyright and intellectual property rights

Topics

Social Media – Why & what Social Media – Present and Past - Social media Platforms and applications – Usage in business & Education- social media etiquette

Social media and digital marketing

Information Security – Concepts of Security - two factor authentication(2FA) - Biometric authentication methods - Data Encryption and Decryption- Cryptography

Awareness about cyber crime and Cyber security

Cyber crime - What is cyber crime, Understand the term computer Virus and Malware, Email spamming, Email spoofing, Email bombing, Forgery, Hacking, Cyber Stalking or Bullying, Web jacking, Phishing, Pornography, Cookies and threats

Cyber security - Basic concepts - Elements of security - Data security and protection from cyber attack - Antivirus - password, Concept of Firewall, Digital signature - uses and working

Cyber Laws - An Overview & Scope of Cyber Law - Copyright, Trademarks and Software Patenting - Data Privacy & Confidentiality - Cyber laws in India - IT ACT-objectives, features, offences

DCA 103 - OFFICE AUTOMATION SYSTEMS

Theory Hours - 50 Hrs

Module I - Word Processing and Indian Language Computing (10Hrs)

Learning outcome

- Work with MS Word and Open Office Writer.
- Understand the features affecting the page layout.
- Understand to use Indian languages in preparation of documents.

Topics

Introduction to Word Processing - Word Processor Basics, typing text, selecting, copying and deleting text

Creating and formatting documents using MS - Word :- MS Word Interface, Toolbars, Ribbon and Menus; Creating a new word document; Clipboard, Cut, Copy, Paste text; Find, Replace and select Text; Insert and delete comment; Use of Undo and Redo operations; Saving a document; Opening and closing a document

Text Formatting - Familiarise various Fonts, font size, font style; Format text, Bold, Italic, Underline, Strikethrough, Superscript and subscript; Text effects, text highlighting, applying font color; Change the Text Case; Alignment of text; Formatting a paragraph, Drop Cap, spacing, Tabs and Indents ; Copy Formatting with format painter; Using Borders and Shading; Create a numbered list or bulleted list

Working with objects - Insert pictures, shapes, symbols, Date and Time; Insert Text box, charts, Word Art, symbols; Insert Header and Footer, Footnote and End note; Page numbering; Insert a manual page break

Document Formatting - Formatting using themes; Using watermark; Applying Page Borders

Page Layout Settings - Page setup options - Setting Margins, Page orientation, Paper size; Creating documents with columns

Document Review - Checking spelling and grammar in a document; Using of Thesaurus; Auto correct; Tracking changes

Viewing a document - Different views of a document; Zooming; Arranging windows; Creating macros

Styles - Apply a style; Apply a document theme; View all available styles; Change style set; Create a style

Navigation - Open the Navigation pane; Search for a word or phrase; Search for Graphics, Tables, Equations or Comments; View search results; View documents headings; View a document's pages; Adding Hyperlink; Inserting Bookmark

Drawing and Graphics - Insert a picture, screen shot, shapes; Adjust text wrapping; Format, Resize and delete an object

Working with Tables - Insert a table; Manipulating Rows & Columns; Merging & splitting cells ; Adjust Column width or row height; Text Direction

Mail Merging - Creating a Mail Merge Document; Creating address list; Merging Main Document with data, Saving

Printing a document - Previewing, settings - Print All / Current Page / Custom Print; Printing a document; Advanced Printing Options

Converting documents to other file formats(eg- pdf)

MS Word Keyboard shortcuts

Word Processing using Open Office Writer - Working with documents; Formatting documents; Working with Tables; Inserting Pictures/Files etc; Tools - Spell check, macros, mail merge etc; AutoCorrect; Manually running the Spell checker; Finding Synonyms with the Thesaurus; Finding items in a Document; Create and modify Headers and Footers; Create and modify Page numbers; Adding Graphics, Formatting a Picture; Resize a picture, Wrapping a picture around text; Adding borders and colors; Creating a Form Letters; Creating a Data Source; Reviewing the Mail Merge document; Addressing Mailing Labels

Language Computing - Complexities of Indian languages; Pre -Unicode Era; Advantages of Font Encoding; Disadvantages of Font Encoding; What is Unicode? History, Format, varying length encoding; Packages and tools available under Windows for Indian languages; Difference between Unicode and non-Unicode Fonts; Familiarisation of Malayalam typing keyboard

Learning outcome

- Examine spreadsheet concepts and explore the Microsoft Office Excel environment, import and export data

Topics

Introduction to Spreadsheets - Spreadsheet Basics; Use of spreadsheets

MS-EXCEL- Basics; Familiarise MS- Excel Interface; Components of an Excel Workbook; Worksheet, Cell and Cell Address; Create New Workbook; Typing data; Saving and opening and closing a workbook; Preview and print workbook; Undo and Redo operations in workbook; Selecting a cell, cell range, entire worksheet; Different views; Zooming

Spreadsheet manipulations - Editing cell contents; Cut or Copy Data ; Previewing an Item Before Pasting; Paste Special options; Move or Copy Cells Using Drag and Drop; Copy Using Auto Fill; Complete a Series Using AutoFill; Insert a Column or Row; Delete a Column or Row; Insert a Comment; Copying and moving Spreadsheet; Naming, inserting and deleting Spreadsheet

Formatting - Formatting Text – setting Font, font size, style; Setting font color, Bold, Italic, Underline cell contents; Text Wrap, Merge & Center; Format Cell values; Copy Formatting with the Format Painter; Cell Alignments; Applying borders; Apply a Cell Style; Format a Cell Range as a Table; Apply a Document Theme; Conditional Formatting ; Page setup options; Setting header and footer in a worksheet; Inserting page number and page breaks in a worksheet; Setting background in a worksheet; Applying Borders and shading; Fill Series; Sorting & Filtering of data ; Using Auto Sum

Calculations in a spreadsheet - Introduction to formulas and Functions; Creating a formula; Using Functions –various functions in MS Excel and its use; Use of Vlookup function; Reference a Cell in a Formula; Create an Absolute Cell Reference

Sorting and Filtering data in a spreadsheet - Data Sorting; Data Filtering and Advanced filtering; Data Validation; Introduction to Pivot Table and create a Pivot table

Working with Charts - Introduction to Chart and its types; Inserting Column and Pie chart; Manipulating charts

Mail merging using worksheet data - Importing address list from Excel file for mail merging

Workbook Views - Various views of a workbook; Freezing Panes; Using macros in a workbook

Protecting the workbook - Protecting a workbook with a password

Printing the worksheet - Page Setup; Setting Print Area and Print Titles; Print Preview and Print options

MS Excel Keyboard shortcuts

Module III - Presentations (10 Hrs)

Learning outcome

- Knowledge about PowerPoint interface.
- Creating multimedia presentations.
- Using design layouts and templates for presentations.

Topics

Create and Manage Presentations using MS-POWERPOINT - The Basics; Introduction to Presentations and slides; Familiarizing PowerPoint Window; Create a New Presentation; Creating a presentation using templates; Open a Presentation; Saving a Presentation

Working with Slides - Inserting a new slide; Selecting a slide layout; Copying slides; Setting slide background; Applying themes to slide layout; Making duplicate slides

Manipulation of Slide contents - Inserting Text Boxes; Formatting text; Creating list with bullets and numbering; Changing Text directions; Inserting pictures, Shapes, Word Art; Inserting Chart inside a slide; Grouping objects in a slide; Inserting slide header and Footer; Different views

Transitions and Animations - Applying various Slide; Transitions; Animate slide contents, custom animation; Set timing for Transitions and Animations; Creating multimedia presentation - add video and audio

Slide Show - Running a slide show; Creating custom slide show

Topics

Introductions to C programming - Structure of a C program - Input and output Statements - Keywords-Data types - Constants - Variables - Declaring Variable Names - Operators and Expressions - Operator Precedence in Expressions - Increment and Decrement Operators - Conditional Statements - simple if - if-else - switch - Implementing Loops in Programs - The While Loop - The do while Loop - The for Loop - Break and Continue Statement

Module III - C Programming: Arrays and Functions (10Hrs)

Learning outcome

- To understand and apply the functions and arrays.
- To implement the features of C language in real world applications

Topics

Arrays - Defining and Manipulating Arrays - Array Variable - Syntax Rules for Arrays - Reading and Writing Multidimensional Arrays.
Functions - Functions Definition- Function Calling - Recursive functions - Character Strings -The Character Data Type - Manipulating Strings of Characters- Arrays in Functions.

Module IV - Web Programming: HTML, CSS and JavaScript (10Hrs)

Learning outcome

- To understand the working of a web application.
- Understanding the use of HTML, CSS and JavaScript in websites
- To develop websites.

Topics

Introduction to web technology - Web application- Web server and Application server - Client and Server - Scripting languages

HTML and HTML5 - HTML Editors - Elements - Attributes - Headings - Paragraphs - Formatting - HTML Comments - Colors - Fonts - Hyperlink- Images - Tables - Lists -- Iframes - Marquee - Forms - Embedding Audio and video

CSS3 Introduction - Syntax - Selectors - External, Internal & Inline Style sheets - Backgrounds - Colors - Text - Fonts - Links - Border - Outline - Margin - Padding - Align - Positioning - Gradients

JavaScript introduction - Syntax - External & Internal usage - Variables - Operators -- Functions - Events - Comparison - Condition -- Loops - Dialog box - Form Validation.

Module V - Introduction to PHP and Python Programming (10Hrs)

Learning outcome

- Understand the features and uses of PHP
- To be able to create web pages using PHP.
- To get a basic understanding on web servers.
- To be able to write programs in the Python programming language.

Topics

Introduction to PHP - Advantages of PHP - Where to use PHP - Installing PHP - PHP Syntax - Variables - Echo and Print - Data Types - Constant - Operators - IF Statement - Switch statement - Loops.

Introduction to Python - Data Types - Variables - Basic Input-Output Operations- Keywords- Identifiers - Literals - Punctuations - Operators - Basic loops and conditions - String - List-Set - Tuple - Dictionary.

Detailed Syllabus (Lab)



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DCA 103 - OFFICE AUTOMATION SYSTEMS

Theory Hours - 50 Hrs

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Learning outcome

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Learning outcome

- Knowledge about PowerPoint interface.
- Creating multimedia presentations.
- Using design layouts and templates for presentations.

Topics

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Transitions and Animations - Applying various Slide; Transitions; Animate slide contents, custom animation; Set timing for Transitions and Animations; Creating multimedia presentation - add video and audio

Slide Show - Running a slide show; Creating custom slide show

Sharing A Presentation - Convert presentation to PDF ; Convert presentation to Video ; Create an Image from presentation ; Print a PowerPoint Presentation; Broadcast PowerPoint presentation

Open Office Impress - Impress characteristics; Start Impress, Presentation Wizard; Drawing, Zoom, Lines, Rectangle, Freeform line filled, Polygon, Convert objects, Curves; Select objects, Copy objects, Delete objects, Flip objects, Arrange objects, Group objects; Export drawing, Area Fills, Color, Gradient, Hatching, Bitmaps, Transfer settings, Images, Insert images, Filters, Graphics mode, Color, Transparency, Crop, Gallery, Glue points, Size and position, Rotate, Alignment, Text, Text to polygon, Text boxes, Slides, Insert, Clone, Rename, Delete slides; Format, Character, Paragraph, Textbox format, Slide effects, Slide transitions, Sounds ; Automatic transition, Manual transition, Hyperlinks, From text, From images, Bitmaps

Module IV- Basics of Accounting & Billing Systems (10Hrs)

Learning outcome

- After going this module one should get an idea about basic accounting components and can familiarize billing system

Topics

Basics of Accounting - Accounting; Business Transaction; Purchase; Sales; Purchase return (Outward invoice); Sales return (Inward invoice); Assets; Liabilities; Capital; Debtors; Creditor; Debit; Credit; Drawings; Receipts; Account; Ledger; Journal entries; Trial balance; Profit; Profit & loss account; Balance Sheet

Billing System - Introduction; Need of Billing System; Features of Billing System; GST Billing; Billing using MS-Excel

Module V - Printing Technologies & Multimedia (10Hrs)

Learning outcome

- Knowledge about modern printing technologies, DTP, familiarize with image tools and Multimedia techniques

Topics

Printing Technologies - Introduction to various modern Printing processes; Printing Technology using DTP; Advantages of DTP; Introduction to DTP software; Use of various

tools in MS Paint, GIMP; Importing Graphics; Image Compression; Electronic Image file formats- BMP, JPEG, TIFF, GIF & PNG ; Topographic design; Vector drawing techniques; Portable Document Format (PDF)

Multimedia - Definition; Multimedia systems, elements & applications; Multimedia system architecture; Digital media and Hyper media; Multimedia file formats & standards; Types and methods of compression and decompression; Multimedia I/O Technologies; Adding text, integrating audio with Video; Image enhancing designing techniques; Image authoring and editing tools

DCA 104 - PRINCIPLES OF PROGRAMMING AND WEB TECHNOLOGIES

Theory Hours - 50 Hrs

Module I - Basics of Programming (10Hrs)

Learning outcome

- Understand the methodology to solve the problem, algorithm, flowchart & coding
- To identify programming language classifications.
- To Learn Object oriented programming concepts.
- Understand the features & architecture of Microprocessor generations and types.

Topics

Algorithms - Properties of a good algorithm - Flowchart - Problem-solving using Computer - Introduction to Programming Languages - Machine Language - Assembly Language - High Level Programming Languages - Procedure Orientation and Object Orientation - Object Orientation concepts - Compiler and interpreter - Introduction to Microprocessor & Microcontroller Programming Operation Cycle (Fetch, Decode, Execute, Store)

Module II- Introduction to C Programming (10Hrs)

Learning outcome

- To provide an overview of working principles of C language.
- Construct, compile, link & execute the C programs
- To learn and implement C language programming techniques.

tools in MS Paint, GIMP; Importing Graphics; Image Compression; Electronic Image file formats- BMP, JPEG, TIFF, GIF & PNG ; Topographic design; Vector drawing techniques; Portable Document Format (PDF)

Multimedia - Definition; Multimedia systems, elements & applications; Multimedia system architecture; Digital media and Hyper media; Multimedia file formats & standards; Types and methods of compression and decompression; Multimedia I/O Technologies; Adding text, integrating audio with Video; Image enhancing designing techniques; Image authoring and editing tools

DCA 104 - PRINCIPLES OF PROGRAMMING AND WEB TECHNOLOGIES

Theory Hours - 50 Hrs

Module I - Basics of Programming (10Hrs)

Learning outcome

- Understand the methodology to solve the problem, algorithm, flowchart & coding
- To identify programming language classifications.
- To Learn Object oriented programming concepts.
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Topics

Algorithms - Properties of a good algorithm - Flowchart - Problem-solving using Computer - Introduction to Programming Languages - Machine Language - Assembly Language - High Level Programming Languages - Procedure Orientation and Object Orientation - Object Orientation concepts - Compiler and interpreter - Introduction to Microprocessor & Microcontroller Programming Operation Cycle (Fetch, Decode, Execute, Store)

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- Construct, compile, link & execute the C programs
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**CENTRE FOR DEVELOPMENT OF IMAGING TECHNOLOGY
TECHNOLOGY EXTENSION DIVISION**

SYLLABUS

DIPLOMA IN COMPUTER APPLICATION (DCA)	
Scheme: 2022 Scheme Duration: 6 Months Eligibility: SSLC or Equivalent	
THEORY SUBJECTS	
DCA 101	Introduction to Information System
DCA 102	Networking and Internet
DCA 103	Office Automation Systems
DCA 104	Principles of Programming and Web Technologies
LAB SUBJECTS	
DCA 105	Lab I-Computer Basics and Office Automation
DCA 106	Lab II- Programming in C and Python & Web Application Development
ANNEXURE	
Assignments for Theory & Questions for Lab	

Detailed Syllabus(Theory)

DCA 101 - INTRODUCTION TO INFORMATION SYSTEM

Theory Hours - 50 Hrs

Module I - Computer Fundamentals (10Hrs)

Learning outcome

- Understanding of the concept and architecture of computers.
- How a computer system works?
- Learning the basic terminologies.

Topics

Introduction :- Fundamentals - Definition, Hardware, Software, Operating System, data, information etc; Functions and Characteristics; Applications of Computers; Capabilities and Limitations

Familiarise different generations of computer

Computer classifications :- Analogue / Digital / Hybrid, PC, Microcomputer, Minicomputer, Mainframe computer, Super Computer.

Components of a computer :- Input Unit ; Output Unit ; CPU ; Memory unit

Input devices :- Keyboard; Mouse; Scanner; Digital/ Web Camera; Touch screen; graphic tablet

Output Devices :- VDU; Printer; Audio Output devices; LCD Projector

Intelligent terminal and dumb terminal

Memory Unit ; Volatile and Non-Volatile memory ; Primary Memory ; Secondary Memory ; BIOS Memory ; Cache Memory ; Virtual memory ; SIMM ; DIMM ; Storage devices; online / offline storage.

Familiarisation of other hardware components :- SMPS ; Motherboard ; Video Cards - PCI, PCI Express, and AGP ; Multimedia Cards - Sound Cards, TV Tuner Cards and Capture Cards ; I/O Cards - SCSI, Serial, USB, and Parallel ; Communications Cards - NICs and Modems

Ports :- Characteristics and different types - Serial, Parallel, USB, Ethernet port etc

Configuring the Peripheral Devices ; methods for connecting peripherals to system - different types of cable connection, explain Bluetooth and Wi-Fi / IR, NFC connectivity

Data representation in computers :- Number System - Types, examples, Conversion rules ;

Coding system - ASCII, BCD, EBCDIC, ISCII, Parity Bit, etc.

Units :- Time Units - Milliseconds, Microseconds, Nanoseconds, Pico seconds ; storage units

- Bit, Byte, Kilo Byte, Mega Byte, Giga Byte, Tera Byte, Peta Byte, Exa Byte, Nibble.

Module II - Basics of Information Technology (10Hrs)

Learning outcome

- Acknowledge the role of technologies in today's society
- To identify the basic hardware and software components of a computer and explore their functioning
- Learn about various operating systems

Topics

Introduction to IT - Role of IT in society - Advantages and Disadvantages, Characteristics and features of IT, Application areas - Science and Engineering, Education, Business and Commerce, Medicine and Entertainment - Advantages & Disadvantages of IT

Basics of Computer System - Generations & Peripheral devices - Hardware - Software - system software & application software-off the shelf and custom software-programming languages-compilers-interpreters- Operating systems: structure & functions - Types of Operating system: Batch processing OS, Mutitasking OS, Multiprocessing OS, Time sharing OS ,Real Time OS, Distributed OS, Network OS-Examples of OS: MS-DOS, MS-Windows, Linux Ubuntu, Apple Macintosh

Data and information Concepts -- Importance of data and information, Difference between data and information

Introduction to ITES (IT Enabled Services) - what are IT enabled services? Benefits and threats, ITES fields - BPO - GIS - Call Centers - Data Management Services - Medical Transcription - Data Digitization, Web services, Payroll management, Telemarketing

Module III - Basics of Software (10Hrs)

Learning outcome

- Distinguish System software and Application software.
- Commonly used operating systems.
- Identify the primary functions of Operating Systems.
- Installation and configuration of software.

Topics

Types of Software :- Software - System software , Application software, Utility Software ; Demo ware ; Shareware ; Freeware ; Firmware ; Free and Open Source Software.

Operating Systems :- Functions, Types - Batch Processing , Single User, Multi User, Multiprogramming, Multi-Tasking (Multiprocessing); Familiarise Multithreading

Booting and Shutdown of Computers ; BIOS ; POST ; Master Boot Record(MBR)

Introduction to old versions of Windows OS

Detailed study of Windows :- Overview ; GUI basics (Desktop, taskbar, icons, desktop background management) ; Navigation (Start menu, File explorer) ; Accessories ; Control Panel ; User Account management ; storage management ; file and folder management ; keyboard shortcuts ; data backup

Familiarise Ubuntu Linux :- Introduction ; History ; Versions ; basics

Familiarising Command mode :- Windows (DOS) ; Linux (Terminal)

Familiarize other operating systems :- UNIX ; Apple Macintosh

Linux commands

Computer Virus :- Introduction ; Mechanism of Virus ; How a virus spreads ; How is virus named ; A few prominent viruses ; Types of Computer Virus ; Related Concepts - Antivirus programs - Norton antivirus program

Module IV - Basics of Information System (10Hrs)

Learning outcome

- Knowledge about information system, its capabilities and uses with IT infrastructure in a business enterprise to achieve desired goals.

Topics

Information System :- Data, Information & System ; Information System; Dimensions of Information System - Organization, Management, IT ; Functions of Information System

Business Information Systems :- Role of Business Information Systems - Top, Middle, Bottom ;

Types of Business Information Systems - TPS, MIS, EIS, DSS, AI/Expert Systems

Management Information System(MIS) :- Objectives ; Components ; Functions ; Resources ; Characteristics; Terminologies and Applications

Enterprise System and Types :- ERP ; CRM ; SCM

Module V – Basics of Databases (10Hrs)

Learning outcome

- Knowledge about data processing, data management systems, relational data model, familiarize MS Access, SQL and importing of Excel files.

Topics

Database Management System - Introduction; Data Processing Vs. Data Management Systems ; Database Concepts; Characteristics of Database; Types of Database System; Advantages and Disadvantages of a DBMS ; Database Administrators and Database Users

Creating database using MS Access - Importing Excel files to MS Access; Using Forms-creating a form and editing data using form

Relational Model Concepts - Data Definition Language (DDL) ; Data Manipulation Language (DML); Introduction to SQL; SQL commands; Importing Excel files to SQL; Familiarise MySQL, NoSQL and Oracle

DCA 102 - NETWORKING AND INTERNET

Theory Hours - 50 Hrs

Module I - Computer Networks (10Hrs)

Learning outcome

- Knowledge about networking technologies and types of networks, devices used, security devices, topologies, nodes, mobile communication and latest technologies

Topics

Introduction to Computer Networks - Evolution of Networking, Wired & Wireless Networking

Types of Networks - LAN (Local Area Network) , MAN (Metropolitan Area Network) , WAN (Wide Area Network) , PAN (Personal Area Network)

Network Devices - Hub, Switch, Router, Bridge, Gateway; Modem, Repeater, Access Point; Modem, Ethernet Card, RJ11, RJ45

Network Security Devices - Active Devices, Passive Devices, Preventative Devices, Unified Threat Management (UTM), Firewalls

Integrated Services Digital Network (ISDN)

Networking Topologies - Bus Topology, Star Topology, Ring Topology, Mesh Topology, Tree or Hybrid Topology

Nodes in a Networked Communication - Types of Nodes, MAC Address, IP Address, IPv4, IPv6

Connecting to Internet - Connecting the computer to the Internet

Types of connectivity - Dial-up; Wired broadband connectivity - ISDN, Cable Internet, DSL, Leased Line, FTTH; Wireless broadband connectivity - Mobile broadband, Wi-MAX, Satellite broadband

Internet Access sharing methods - LAN, Wi-Fi, Li-Fi

Services on Internet - World Wide Web (WWW), Browser, Web browsing, Search Engines, E-mail, Social media; Various stages of Data Transfer from Server to Client; Domain Name; Resolution; Mobile communication;

Generations in mobile communication - First Generation, Second Generation - GSM, GPRS, EDGE, CDMA, Third Generation - WCDMA, Fourth Generation, Fifth Generation; Mobile communication services- SMS, MMS, GPS, Smart Cards

Mobile Operating System

Latest Technologies - Data Analysis; Cloud Computing; Internet of Things & Edge Computing; Block Chain; Artificial Intelligence & Machine Learning; Augmented Reality & Virtual Reality; Robotic Process Automation (RPA); 5G Spectrum

Module II - Introduction to Internet (10Hrs)

Learning outcome

- Understanding about internet
- Explore different kinds of information available on the Internet, surfing safely and Searching information on the Internet
- Importance of online conference tools in daily life and its usage
- Understand e-learning concept of e-learning and its importance in the modern world.

Topics

Concepts of Internet - Basics of internet connectivity -Applications of Internet -tools and troubleshooting- Intranet and extranet -Internet Services-communication services- Information retrieval services-Web services-World Wide Web-email- Web Browsing softwares - Search Engines - URL - Web Protocols- Domain name - IP Address - Surfing the web

Basics of electronic mail -concept, technology behind email, different email providers, Getting an email account - Sending and receiving emails - mail operations -email folders- applications of Emails-web mail-client mail-email security- email client(eg-outlook)

Online/Web/Mobile Conferences & Tools - introduction towards Audio and Video conferencing - Advantages & Disadvantages -Popular Video conferencing tools

eLearning - What is eLearning, Features and uses, Different eLearning platforms in India, LMS

Learning outcome

- Understand the concept of e-government and the associated benefits and drawbacks
- Gather knowledge on various National and State e-governance initiatives.
- Recognize the benefits and limitations of e-commerce
- Understand major e-commerce business models and their impact in the society

Topics

What is E-Governance, objective, Scope, Benefits and outcomes of e-Governance - **Pillars of e-Governance:** People - Process - Technology - Resources, **Types of interactions in e-Governance:** Government to Citizen (G2C)- Government to Businesses (G2B)-Government to Government (G2G)-Government to Employees (G2E), **Phases of e-Governance Maturity Model** (Phase I: Information, Phase II: Interaction, Phase III- Transaction - Phase IV : Transformation)

e-Governance Infrastructures: Common Service Centre (CSC) - State Wide Area Network (SWAN) - National e-Governance Service Delivery Gateway (NSDG) - State Data Center (SDC)

Challenges to e-Governance, Security approaches to e-Governance

National level e-Governance initiative - Digital India initiative, Major services and projects implemented by union govt and state govt.

e-Commerce (Internet Commerce or electronic commerce) - What is e-Commerce - Features and Scope of e-Commerce - Traditional Commerce vs e-Commerce - e-Commerce Models (B2C, B2B, C2C, C2B, B2G - Benefits and limitations of e-Commerce - Major e-Commerce websites and its usage

Learning outcome

- Understand mobile computing, its principles and theories.
- List applications in different domains that mobile computing offers to the public, employees, and businesses.
- Understand the various options of payments - online & mobile payment, smart cards etc

Topics

Mobile Computing - Introduction and Concepts- mobile communication, mobile hardware and software, Mobile Device Operating Systems - Android, iOS, - Generations of Mobile Communication Technologies

e-Commerce & m-Commerce System Security

Familiarisation of mobile applications - Introduction to mobile applications-types of mobile applications-native web and hybrid, Different categories of mobile applications - cooking application - Education applications - Communication applications - Shopping application etc

Digital economy - Identify the methods of payments on the internet - e-Cash , e-cheques , credit cards on the Internet

Electronic Payment Systems - Need and uses of Electronic Payment System- Electronic Fund Transfer-one time password (OTP)-PIN and its importance-internet banking - Credit card - Debit card - UPI, Point of Sale(POS), Security Issues

Mobile Payment System - Different payment types: Mobile Wallets, QR code payments, Payment links, SMS payments, Benefits of Mobile Payment

Security issues in digital payment system ,Online banking frauds

Do's and Don'ts in electronic/mobile payment system

Learning outcome

- Understand various social media technologies and their importance in the day to day life.
- Benefits of social media in digital marketing and Education,
- Awareness on various cybercrimes and cyber security,
- Understand copyright and intellectual property rights

Topics

Social Media – Why & what Social Media – Present and Past - Social media Platforms and applications – Usage in business & Education- social media etiquette

Social media and digital marketing

Information Security – Concepts of Security - two factor authentication(2FA) - Biometric authentication methods - Data Encryption and Decryption- Cryptography

Awareness about cyber crime and Cyber security

Cyber crime - What is cyber crime, Understand the term computer Virus and Malware, Email spamming, Email spoofing, Email bombing, Forgery, Hacking, Cyber Stalking or Bullying, Web jacking, Phishing, Pornography, Cookies and threats

Cyber security - Basic concepts - Elements of security - Data security and protection from cyber attack - Antivirus - password, Concept of Firewall, Digital signature - uses and working

Cyber Laws - An Overview & Scope of Cyber Law - Copyright, Trademarks and Software Patenting - Data Privacy & Confidentiality - Cyber laws in India - IT ACT-objectives, features, offences

DCA 103 - OFFICE AUTOMATION SYSTEMS

Theory Hours - 50 Hrs

Module I - Word Processing and Indian Language Computing (10Hrs)

Learning outcome

- Work with MS Word and Open Office Writer.
- Understand the features affecting the page layout.
- Understand to use Indian languages in preparation of documents.

Topics

Introduction to Word Processing - Word Processor Basics, typing text, selecting, copying and deleting text

Creating and formatting documents using MS - Word :- MS Word Interface, Toolbars, Ribbon and Menus; Creating a new word document; Clipboard, Cut, Copy, Paste text; Find, Replace and select Text; Insert and delete comment; Use of Undo and Redo operations; Saving a document; Opening and closing a document

Text Formatting - Familiarise various Fonts, font size, font style; Format text, Bold, Italic, Underline, Strikethrough, Superscript and subscript; Text effects, text highlighting, applying font color; Change the Text Case; Alignment of text; Formatting a paragraph, Drop Cap, spacing, Tabs and Indents ; Copy Formatting with format painter; Using Borders and Shading; Create a numbered list or bulleted list

Working with objects - Insert pictures, shapes, symbols, Date and Time; Insert Text box, charts, Word Art, symbols; Insert Header and Footer, Footnote and End note; Page numbering; Insert a manual page break

Document Formatting - Formatting using themes; Using watermark; Applying Page Borders

Page Layout Settings - Page setup options - Setting Margins, Page orientation, Paper size; Creating documents with columns

Document Review - Checking spelling and grammar in a document; Using of Thesaurus; Auto correct; Tracking changes

Viewing a document - Different views of a document; Zooming; Arranging windows; Creating macros

Styles - Apply a style; Apply a document theme; View all available styles; Change style set; Create a style

Navigation - Open the Navigation pane; Search for a word or phrase; Search for Graphics, Tables, Equations or Comments; View search results; View documents headings; View a document's pages; Adding Hyperlink; Inserting Bookmark

Drawing and Graphics - Insert a picture, screen shot, shapes; Adjust text wrapping; Format, Resize and delete an object

Working with Tables - Insert a table; Manipulating Rows & Columns; Merging & splitting cells ; Adjust Column width or row height; Text Direction

Mail Merging - Creating a Mail Merge Document; Creating address list; Merging Main Document with data, Saving

Printing a document - Previewing, settings - Print All / Current Page / Custom Print; Printing a document; Advanced Printing Options

Converting documents to other file formats(eg- pdf)

MS Word Keyboard shortcuts

Word Processing using Open Office Writer - Working with documents; Formatting documents; Working with Tables; Inserting Pictures/Files etc; Tools - Spell check, macros, mail merge etc; AutoCorrect; Manually running the Spell checker; Finding Synonyms with the Thesaurus; Finding items in a Document; Create and modify Headers and Footers; Create and modify Page numbers; Adding Graphics, Formatting a Picture; Resize a picture, Wrapping a picture around text; Adding borders and colors; Creating a Form Letters; Creating a Data Source; Reviewing the Mail Merge document; Addressing Mailing Labels

Language Computing - Complexities of Indian languages; Pre -Unicode Era; Advantages of Font Encoding; Disadvantages of Font Encoding; What is Unicode? History, Format, varying length encoding; Packages and tools available under Windows for Indian languages; Difference between Unicode and non-Unicode Fonts; Familiarisation of Malayalam typing keyboard

Learning outcome

- Examine spreadsheet concepts and explore the Microsoft Office Excel environment, import and export data

Topics

Introduction to Spreadsheets - Spreadsheet Basics; Use of spreadsheets

MS-EXCEL- Basics; Familiarise MS- Excel Interface; Components of an Excel Workbook; Worksheet, Cell and Cell Address; Create New Workbook; Typing data; Saving and opening and closing a workbook; Preview and print workbook; Undo and Redo operations in workbook; Selecting a cell, cell range, entire worksheet; Different views; Zooming

Spreadsheet manipulations - Editing cell contents; Cut or Copy Data ; Previewing an Item Before Pasting; Paste Special options; Move or Copy Cells Using Drag and Drop; Copy Using Auto Fill; Complete a Series Using AutoFill; Insert a Column or Row; Delete a Column or Row; Insert a Comment; Copying and moving Spreadsheet; Naming, inserting and deleting Spreadsheet

Formatting - Formatting Text – setting Font, font size, style; Setting font color, Bold, Italic, Underline cell contents; Text Wrap, Merge & Center; Format Cell values; Copy Formatting with the Format Painter; Cell Alignments; Applying borders; Apply a Cell Style; Format a Cell Range as a Table; Apply a Document Theme; Conditional Formatting ; Page setup options; Setting header and footer in a worksheet; Inserting page number and page breaks in a worksheet; Setting background in a worksheet; Applying Borders and shading; Fill Series; Sorting & Filtering of data ; Using Auto Sum

Calculations in a spreadsheet - Introduction to formulas and Functions; Creating a formula; Using Functions –various functions in MS Excel and its use; Use of Vlookup function; Reference a Cell in a Formula; Create an Absolute Cell Reference

Sorting and Filtering data in a spreadsheet - Data Sorting; Data Filtering and Advanced filtering; Data Validation; Introduction to Pivot Table and create a Pivot table

Working with Charts - Introduction to Chart and its types; Inserting Column and Pie chart; Manipulating charts

Mail merging using worksheet data - Importing address list from Excel file for mail merging

Workbook Views - Various views of a workbook; Freezing Panes; Using macros in a workbook

Protecting the workbook - Protecting a workbook with a password

Printing the worksheet - Page Setup; Setting Print Area and Print Titles; Print Preview and Print options

MS Excel Keyboard shortcuts

Module III - Presentations (10 Hrs)

Learning outcome

- Knowledge about PowerPoint interface.
- Creating multimedia presentations.
- Using design layouts and templates for presentations.

Topics

Create and Manage Presentations using MS-POWERPOINT - The Basics; Introduction to Presentations and slides; Familiarizing PowerPoint Window; Create a New Presentation; Creating a presentation using templates; Open a Presentation; Saving a Presentation

Working with Slides - Inserting a new slide; Selecting a slide layout; Copying slides; Setting slide background; Applying themes to slide layout; Making duplicate slides

Manipulation of Slide contents - Inserting Text Boxes; Formatting text; Creating list with bullets and numbering; Changing Text directions; Inserting pictures, Shapes, Word Art; Inserting Chart inside a slide; Grouping objects in a slide; Inserting slide header and Footer; Different views

Transitions and Animations - Applying various Slide; Transitions; Animate slide contents, custom animation; Set timing for Transitions and Animations; Creating multimedia presentation - add video and audio

Slide Show - Running a slide show; Creating custom slide show

Topics

Introductions to C programming - Structure of a C program - Input and output Statements - Keywords-Data types - Constants - Variables - Declaring Variable Names - Operators and Expressions - Operator Precedence in Expressions - Increment and Decrement Operators - Conditional Statements - simple if - if-else - switch - Implementing Loops in Programs - The While Loop - The do while Loop - The for Loop - Break and Continue Statement

Module III - C Programming: Arrays and Functions (10Hrs)

Learning outcome

- To understand and apply the functions and arrays.
- To implement the features of C language in real world applications

Topics

Arrays - Defining and Manipulating Arrays - Array Variable - Syntax Rules for Arrays - Reading and Writing Multidimensional Arrays.
Functions - Functions Definition- Function Calling - Recursive functions - Character Strings -The Character Data Type - Manipulating Strings of Characters- Arrays in Functions.

Module IV - Web Programming: HTML, CSS and JavaScript (10Hrs)

Learning outcome

- To understand the working of a web application.
- Understanding the use of HTML, CSS and JavaScript in websites
- To develop websites.

Topics

Introduction to web technology - Web application- Web server and Application server - Client and Server - Scripting languages

HTML and HTML5 - HTML Editors - Elements - Attributes - Headings - Paragraphs - Formatting - HTML Comments - Colors - Fonts - Hyperlink- Images - Tables - Lists -- Iframes - Marquee - Forms - Embedding Audio and video

CSS3 Introduction - Syntax - Selectors - External, Internal & Inline Style sheets - Backgrounds - Colors - Text - Fonts - Links - Border - Outline - Margin - Padding - Align - Positioning - Gradients

JavaScript introduction - Syntax - External & Internal usage - Variables - Operators -- Functions - Events - Comparison - Condition -- Loops - Dialog box - Form Validation.

Module V - Introduction to PHP and Python Programming (10Hrs)

Learning outcome

- Understand the features and uses of PHP
- To be able to create web pages using PHP.
- To get a basic understanding on web servers.
- To be able to write programs in the Python programming language.

Topics

Introduction to PHP - Advantages of PHP - Where to use PHP - Installing PHP - PHP Syntax - Variables - Echo and Print - Data Types - Constant - Operators - IF Statement - Switch statement - Loops.

Introduction to Python - Data Types - Variables - Basic Input-Output Operations- Keywords- Identifiers - Literals - Punctuations - Operators - Basic loops and conditions - String - List-Set - Tuple - Dictionary.

Detailed Syllabus (Lab)



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Topics

Introductions to C programming - Structure of a C program - Input and output Statements - Keywords-Data types - Constants - Variables - Declaring Variable Names - Operators and Expressions - Operator Precedence in Expressions - Increment and Decrement Operators - Conditional Statements - simple if - if-else - switch - Implementing Loops in Programs - The While Loop - The do while Loop - The for Loop - Break and Continue Statement

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**CENTRE FOR DEVELOPMENT OF IMAGING TECHNOLOGY
TECHNOLOGY EXTENSION DIVISION**

SYLLABUS

DIPLOMA IN COMPUTER APPLICATION (DCA)	
Scheme: 2022 Scheme Duration: 6 Months Eligibility: SSLC or Equivalent	
THEORY SUBJECTS	
DCA 101	Introduction to Information System
DCA 102	Networking and Internet
DCA 103	Office Automation Systems
DCA 104	Principles of Programming and Web Technologies
LAB SUBJECTS	
DCA 105	Lab I-Computer Basics and Office Automation
DCA 106	Lab II- Programming in C and Python & Web Application Development
ANNEXURE	
Assignments for Theory & Questions for Lab	

Detailed Syllabus(Theory)

DCA 101 - INTRODUCTION TO INFORMATION SYSTEM

Theory Hours - 50 Hrs

Module I - Computer Fundamentals (10Hrs)

Learning outcome

- Understanding of the concept and architecture of computers.
- How a computer system works?
- Learning the basic terminologies.

Topics

Introduction :- Fundamentals - Definition, Hardware, Software, Operating System, data, information etc; Functions and Characteristics; Applications of Computers; Capabilities and Limitations

Familiarise different generations of computer

Computer classifications :- Analogue / Digital / Hybrid, PC, Microcomputer, Minicomputer, Mainframe computer, Super Computer.

Components of a computer :- Input Unit ; Output Unit ; CPU ; Memory unit

Input devices :- Keyboard; Mouse; Scanner; Digital/ Web Camera; Touch screen; graphic tablet

Output Devices :- VDU; Printer; Audio Output devices; LCD Projector

Intelligent terminal and dumb terminal

Memory Unit ; Volatile and Non-Volatile memory ; Primary Memory ; Secondary Memory ; BIOS Memory ; Cache Memory ; Virtual memory ; SIMM ; DIMM ; Storage devices; online / offline storage.

Familiarisation of other hardware components :- SMPS ; Motherboard ; Video Cards - PCI, PCI Express, and AGP ; Multimedia Cards - Sound Cards, TV Tuner Cards and Capture Cards ; I/O Cards - SCSI, Serial, USB, and Parallel ; Communications Cards - NICs and Modems

Ports :- Characteristics and different types - Serial, Parallel, USB, Ethernet port etc

Configuring the Peripheral Devices ; methods for connecting peripherals to system - different types of cable connection, explain Bluetooth and Wi-Fi / IR, NFC connectivity

Data representation in computers :- Number System - Types, examples, Conversion rules ;

Coding system - ASCII, BCD, EBCDIC, ISCII, Parity Bit, etc.

Units :- Time Units - Milliseconds, Microseconds, Nanoseconds, Pico seconds ; storage units - Bit, Byte, Kilo Byte, Mega Byte, Giga Byte, Tera Byte, Peta Byte, Exa Byte, Nibble.

Module II - Basics of Information Technology (10Hrs)

Learning outcome

- Acknowledge the role of technologies in today's society
- To identify the basic hardware and software components of a computer and explore their functioning
- Learn about various operating systems

Topics

Introduction to IT - Role of IT in society - Advantages and Disadvantages, Characteristics and features of IT, Application areas - Science and Engineering, Education, Business and Commerce, Medicine and Entertainment - Advantages & Disadvantages of IT

Basics of Computer System - Generations & Peripheral devices - Hardware - Software - system software & application software-off the shelf and custom software-programming languages-compilers-interpreters- Operating systems: structure & functions - Types of Operating system: Batch processing OS, Mutitasking OS, Multiprocessing OS, Time sharing OS ,Real Time OS, Distributed OS, Network OS-Examples of OS: MS-DOS, MS-Windows, Linux Ubuntu, Apple Macintosh

Data and information Concepts -- Importance of data and information, Difference between data and information

Introduction to ITES (IT Enabled Services) - what are IT enabled services? Benefits and threats, ITES fields - BPO - GIS - Call Centers - Data Management Services - Medical Transcription - Data Digitization, Web services, Payroll management, Telemarketing

Module III - Basics of Software (10Hrs)

Learning outcome

- Distinguish System software and Application software.
- Commonly used operating systems.
- Identify the primary functions of Operating Systems.
- Installation and configuration of software.

Topics

Types of Software :- Software - System software , Application software, Utility Software ; Demo ware ; Shareware ; Freeware ; Firmware ; Free and Open Source Software.

Operating Systems :- Functions, Types - Batch Processing , Single User, Multi User, Multiprogramming, Multi-Tasking (Multiprocessing); Familiarise Multithreading

Booting and Shutdown of Computers ; BIOS ; POST ; Master Boot Record(MBR)

Introduction to old versions of Windows OS

Detailed study of Windows :- Overview ; GUI basics (Desktop, taskbar, icons, desktop background management) ; Navigation (Start menu, File explorer) ; Accessories ; Control Panel ; User Account management ; storage management ; file and folder management ; keyboard shortcuts ; data backup

Familiarise Ubuntu Linux :- Introduction ; History ; Versions ; basics

Familiarising Command mode :- Windows (DOS) ; Linux (Terminal)

Familiarize other operating systems :- UNIX ; Apple Macintosh

Linux commands

Computer Virus :- Introduction ; Mechanism of Virus ; How a virus spreads ; How is virus named ; A few prominent viruses ; Types of Computer Virus ; Related Concepts - Antivirus programs - Norton antivirus program

Module IV - Basics of Information System (10Hrs)

Learning outcome

- Knowledge about information system, its capabilities and uses with IT infrastructure in a business enterprise to achieve desired goals.

Topics

Information System :- Data, Information & System ; Information System; Dimensions of Information System - Organization, Management, IT ; Functions of Information System

Business Information Systems :- Role of Business Information Systems - Top, Middle, Bottom ;

Types of Business Information Systems - TPS, MIS, EIS, DSS, AI/Expert Systems

Management Information System(MIS) :- Objectives ; Components ; Functions ; Resources ; Characteristics; Terminologies and Applications

Enterprise System and Types :- ERP ; CRM ; SCM

Module V – Basics of Databases (10Hrs)

Learning outcome

- Knowledge about data processing, data management systems, relational data model, familiarize MS Access, SQL and importing of Excel files.

Topics

Database Management System - Introduction; Data Processing Vs. Data Management Systems ; Database Concepts; Characteristics of Database; Types of Database System; Advantages and Disadvantages of a DBMS ; Database Administrators and Database Users

Creating database using MS Access - Importing Excel files to MS Access; Using Forms-creating a form and editing data using form

Relational Model Concepts - Data Definition Language (DDL) ; Data Manipulation Language (DML); Introduction to SQL; SQL commands; Importing Excel files to SQL; Familiarise MySQL, NoSQL and Oracle

DCA 102 - NETWORKING AND INTERNET

Theory Hours - 50 Hrs

Module I - Computer Networks (10Hrs)

Learning outcome

- Knowledge about networking technologies and types of networks, devices used, security devices, topologies, nodes, mobile communication and latest technologies

Topics

Introduction to Computer Networks - Evolution of Networking, Wired & Wireless Networking

Types of Networks - LAN (Local Area Network) , MAN (Metropolitan Area Network) , WAN (Wide Area Network) , PAN (Personal Area Network)

Network Devices - Hub, Switch, Router, Bridge, Gateway; Modem, Repeater, Access Point; Modem, Ethernet Card, RJ11, RJ45

Network Security Devices - Active Devices, Passive Devices, Preventative Devices, Unified Threat Management (UTM), Firewalls

Integrated Services Digital Network (ISDN)

Networking Topologies - Bus Topology, Star Topology, Ring Topology, Mesh Topology, Tree or Hybrid Topology

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Learning outcome

- Understanding about internet
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Printing a document - Previewing, settings - Print All / Current Page / Custom Print; Printing a document; Advanced Printing Options

Converting documents to other file formats(eg- pdf)

MS Word Keyboard shortcuts

Word Processing using Open Office Writer - Working with documents; Formatting documents; Working with Tables; Inserting Pictures/Files etc; Tools - Spell check, macros, mail merge etc; AutoCorrect; Manually running the Spell checker; Finding Synonyms with the Thesaurus; Finding items in a Document; Create and modify Headers and Footers; Create and modify Page numbers; Adding Graphics, Formatting a Picture; Resize a picture, Wrapping a picture around text; Adding borders and colors; Creating a Form Letters; Creating a Data Source; Reviewing the Mail Merge document; Addressing Mailing Labels

Language Computing - Complexities of Indian languages; Pre -Unicode Era; Advantages of Font Encoding; Disadvantages of Font Encoding; What is Unicode? History, Format, varying length encoding; Packages and tools available under Windows for Indian languages; Difference between Unicode and non-Unicode Fonts; Familiarisation of Malayalam typing keyboard

Learning outcome

- Examine spreadsheet concepts and explore the Microsoft Office Excel environment, import and export data

Topics

Introduction to Spreadsheets - Spreadsheet Basics; Use of spreadsheets

MS-EXCEL- Basics; Familiarise MS- Excel Interface; Components of an Excel Workbook; Worksheet, Cell and Cell Address; Create New Workbook; Typing data; Saving and opening and closing a workbook; Preview and print workbook; Undo and Redo operations in workbook; Selecting a cell, cell range, entire worksheet; Different views; Zooming

Spreadsheet manipulations - Editing cell contents; Cut or Copy Data ; Previewing an Item Before Pasting; Paste Special options; Move or Copy Cells Using Drag and Drop; Copy Using Auto Fill; Complete a Series Using AutoFill; Insert a Column or Row; Delete a Column or Row; Insert a Comment; Copying and moving Spreadsheet; Naming, inserting and deleting Spreadsheet

Formatting - Formatting Text – setting Font, font size, style; Setting font color, Bold, Italic, Underline cell contents; Text Wrap, Merge & Center; Format Cell values; Copy Formatting with the Format Painter; Cell Alignments; Applying borders; Apply a Cell Style; Format a Cell Range as a Table; Apply a Document Theme; Conditional Formatting ; Page setup options; Setting header and footer in a worksheet; Inserting page number and page breaks in a worksheet; Setting background in a worksheet; Applying Borders and shading; Fill Series; Sorting & Filtering of data ; Using Auto Sum

Calculations in a spreadsheet - Introduction to formulas and Functions; Creating a formula; Using Functions –various functions in MS Excel and its use; Use of Vlookup function; Reference a Cell in a Formula; Create an Absolute Cell Reference

Sorting and Filtering data in a spreadsheet - Data Sorting; Data Filtering and Advanced filtering; Data Validation; Introduction to Pivot Table and create a Pivot table

Working with Charts - Introduction to Chart and its types; Inserting Column and Pie chart; Manipulating charts

Mail merging using worksheet data - Importing address list from Excel file for mail merging

Workbook Views - Various views of a workbook; Freezing Panes; Using macros in a workbook

Protecting the workbook - Protecting a workbook with a password

Printing the worksheet - Page Setup; Setting Print Area and Print Titles; Print Preview and Print options

MS Excel Keyboard shortcuts

Module III - Presentations (10 Hrs)

Learning outcome

- Knowledge about PowerPoint interface.
- Creating multimedia presentations.
- Using design layouts and templates for presentations.

Topics

Create and Manage Presentations using MS-POWERPOINT - The Basics; Introduction to Presentations and slides; Familiarizing PowerPoint Window; Create a New Presentation; Creating a presentation using templates; Open a Presentation; Saving a Presentation

Working with Slides - Inserting a new slide; Selecting a slide layout; Copying slides; Setting slide background; Applying themes to slide layout; Making duplicate slides

Manipulation of Slide contents - Inserting Text Boxes; Formatting text; Creating list with bullets and numbering; Changing Text directions; Inserting pictures, Shapes, Word Art; Inserting Chart inside a slide; Grouping objects in a slide; Inserting slide header and Footer; Different views

Transitions and Animations - Applying various Slide; Transitions; Animate slide contents, custom animation; Set timing for Transitions and Animations; Creating multimedia presentation - add video and audio

Slide Show - Running a slide show; Creating custom slide show

Topics

Introductions to C programming - Structure of a C program - Input and output Statements - Keywords-Data types - Constants - Variables - Declaring Variable Names - Operators and Expressions - Operator Precedence in Expressions - Increment and Decrement Operators - Conditional Statements - simple if - if-else - switch - Implementing Loops in Programs - The While Loop - The do while Loop - The for Loop - Break and Continue Statement

Module III - C Programming: Arrays and Functions (10Hrs)

Learning outcome

- To understand and apply the functions and arrays.
- To implement the features of C language in real world applications

Topics

Arrays - Defining and Manipulating Arrays - Array Variable - Syntax Rules for Arrays - Reading and Writing Multidimensional Arrays.
Functions - Functions Definition- Function Calling - Recursive functions - Character Strings -The Character Data Type - Manipulating Strings of Characters- Arrays in Functions.

Module IV - Web Programming: HTML, CSS and JavaScript (10Hrs)

Learning outcome

- To understand the working of a web application.
- Understanding the use of HTML, CSS and JavaScript in websites
- To develop websites.

Topics

Introduction to web technology - Web application- Web server and Application server - Client and Server - Scripting languages

HTML and HTML5 - HTML Editors - Elements - Attributes - Headings - Paragraphs - Formatting - HTML Comments - Colors - Fonts - Hyperlink- Images - Tables - Lists -- Iframes - Marquee - Forms - Embedding Audio and video

CSS3 Introduction - Syntax - Selectors - External, Internal & Inline Style sheets - Backgrounds - Colors - Text - Fonts - Links - Border - Outline - Margin - Padding - Align - Positioning - Gradients

JavaScript introduction - Syntax - External & Internal usage - Variables - Operators -- Functions - Events - Comparison - Condition -- Loops - Dialog box - Form Validation.

Module V - Introduction to PHP and Python Programming (10Hrs)

Learning outcome

- Understand the features and uses of PHP
- To be able to create web pages using PHP.
- To get a basic understanding on web servers.
- To be able to write programs in the Python programming language.

Topics

Introduction to PHP - Advantages of PHP - Where to use PHP - Installing PHP - PHP Syntax - Variables - Echo and Print - Data Types - Constant - Operators - IF Statement - Switch statement - Loops.

Introduction to Python - Data Types - Variables - Basic Input-Output Operations- Keywords- Identifiers - Literals - Punctuations - Operators - Basic loops and conditions - String - List-Set - Tuple - Dictionary.

Detailed Syllabus (Lab)



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CSS3 Introduction - Syntax - Selectors - External, Internal & Inline Style sheets - Backgrounds - Colors - Text - Fonts - Links - Border - Outline - Margin - Padding - Align - Positioning - Gradients

JavaScript introduction - Syntax - External & Internal usage - Variables - Operators -- Functions - Events - Comparison - Condition -- Loops - Dialog box - Form Validation.

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Introduction to PHP - Advantages of PHP - Where to use PHP - Installing PHP - PHP Syntax - Variables - Echo and Print - Data Types - Constant - Operators - IF Statement - Switch statement - Loops.

Introduction to Python - Data Types - Variables - Basic Input-Output Operations- Keywords- Identifiers - Literals - Punctuations - Operators - Basic loops and conditions - String - List-Set - Tuple - Dictionary.

Detailed Syllabus (Lab)



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Detailed Syllabus(Lab)

DCA 105 - LAB I - Computer Basics and Office Automation

Lab Hours - 150 Hrs

Section 1 (25 Hrs)

1. Identify the various hardware components.
2. How to configure different peripheral devices.
3. Installation of operating system (Windows and Linux)
4. Familiarization of Desktop icons, Control panel, taskbar
5. How to create files, folder etc
6. User account management-create user, modify user, password setting, delete user etc
7. Familiarization basic Linux commands.

Section 2 (25 Hrs)

1. Identification of various network devices.
2. Practice to setup an IP address and DNS.
3. How to setup an internet connection with computer.
4. How to download a birth/death certificate from online?
5. How to add a certificate in Digi locker?
6. Perform a mobile recharge(using internet banking/UPI/Mobile wallet/Cards etc)

Section 3 (100 Hrs)

For Microsoft Word and Open Office writer

1. Create a two paragraph document and save the file, and perform cut,copy,paste,undo redo operations
2. Open a word file and perform text formatting operations (Bold, italic, underline,strike through, colour change ,background change etc)
3. Create a table with 5 column and 10 rows with fields and formatting(alignment, wrap text, border style etc) the table contents.
4. Create numbers and bullets in word document

5. Perform paragraph alignment, margin alignment, setup header and footer, page numbers in a document
6. Insert shapes, images, watermark etc in a word document
7. Create a two column document
8. Perform mail merge
9. Create and design an admission form and take a print out
10. Familiarise with unicode and asci Malayalam fonts
11. Familiarise inscript Malayalam typing
12. Perform typing in Malayalam various tasks like timetable, invitation, official and personal letters, etc preparation in word and writer
13. Prepare slides in malayalam

For Microsoft Excel and Open Office Calc

1. Creating simple Worksheet-Entering Text, numbers, Dates and Times ,etc
2. Perform column insertion, row insertion, column deletion, row deletion etc, comment insertion
3. Perform Formatting - Changing Character Style and character size, Changing Alignment, Changing row and Column Width, formatting decimal places, auto fill, formatting dates, Copying style and formats.
4. Insertion of header, footer, page numbers in worksheet.
5. Perform Copying entries between work books, Moving sheets between work books, Deleting sheets, cell references, quitting Excel.
6. Naming cells and Ranges
7. Perform simple calculations, Doing Arithmetic, Totaling column of values, Auto sum
8. Working of functions- Statistical functions, Mathematical functions, Text functions, Logical functions, Financial functions
9. Perform chart related works- Plotting charts, Sizing and moving charts, Updating charts, changing the chart type, Using chart auto format.
10. Perform sorting of data, , finding records, Adding and deleting Records, Filtering Records
11. How to create a password protected workbook?
12. Perform Mail merging using worksheet data.

For Microsoft PowerPoint and Open Office Impress

1. Creating a simple presentation, open an existing one, save and close a presentation
2. Perform basic functions like create a slide, insert, modify and delete a slide
3. Creating a Presentation with a Template. Creating a presentation from Scratch, deleting a slide, copying a slide, editing a slide
4. Perform changing font size and style, Changing the characteristics of Bullets, Changing indent, change slides background colour, copying slide, duplicate slide, Rearranging slides, Applying themes to slide layout
5. Inserting pictures, Shapes, Word Art, chart, header and Footer, Grouping objects in a slide
6. Applying transitions and animations in slides- Add and remove transition, Controlling Transitions between slides, Animating Different Parts of a slide
7. Insertion of audio and video in slides
8. Perform a slide show for a presentation

DCA 106-LAB II- Programming in C and Python & Web Application Development (HTML&CSS, JavaScript and PHP) Lab Hours - 150 Hrs

Section 1 - System Programming (70 Hrs)

Part A - Programming in C (50 Hrs)

1. Practice to write algorithm and draw flow chart for simple programs.
2. Programming on Basic Operations.
3. Programming Exercise on Conditional Statements: if, if else, switch.
4. Programming Exercise using loops : for, while, do-while and understand the concept of break and continue statements.
5. Programming Exercise using functions
6. Programming Exercise to understand Arrays.
7. Program based on basic string operations.

Part B - Python Programming (20 Hrs)

1. Programming exercise on Basics, Array, Operators.
2. Programming based on loops.

3. Programming exercise using Conditional Statements and Control Flow.
4. Programs based on strings.
5. Programming exercise on Data Structures - list, tuple, dictionary and set.

Section 2 - Web Application Development (80 Hrs)

Part A - HTML & CSS (40 Hrs)

1. Practicing basic HTML tags, font tags, paragraph styles, headings, lists
2. Tables in HTML, Frames in HTML, nested frames, Link and Anchor Tags
3. Creating marquee in HTML.
4. Programs to including graphics, video and sound in web pages
5. Programming exercise to create web pages.
6. Basic CSS programs.
7. Programs based on CSS styling background-text, fonts, links
8. CSS Programs using border, outline, margin
9. CSS programs using align, positioning and gradient.

Part B - JavaScript (20 Hrs)

1. Programs based on JavaScript operators
2. Programs based on conditional statements: if, if else, switch
3. Programs based on loops
4. Programs based on functions
5. Program to perform simple form validation

Part C - PHP (20 Hrs)

1. Programs based on basic data types.
2. Programs based on various operators.
3. Programming Exercise on Conditional Statements: if, if else, switch.
4. Programming exercise to create a simple web page using scripting.

Assignments for Theory And Questions for Lab



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DCA - Paper 1(Theory)

DCA 101-INTRODUCTION TO INFORMATION SYSTEM

Module I - Computer Fundamentals

Assignment

1. History and Generations of Computers.
2. Explain in detail about various Input Output devices
3. Explain about different types of storage devices with capacity (based on purpose)
4. Specifications for new personal computer purchase
5. Show the computations needed for the conversion between various number systems

Module II - Basics of Information Technology

Assignment

1. Explain how information systems are related with modern life
2. Role of hardware and software in computing
3. Explain the role of information systems in education
4. Discovering the milestones of Information & Communication Technology history

Module III - Basics of Software

Assignment

1. Discuss the pros and cons of the three major operating systems.
2. What are the different versions of Windows OS
3. Updating operating system and web browser software
4. Explain about various DOS and Linux commands
5. Various methods for backing up of user data and disc management
6. Computer Virus and Green IT

Module IV - Basics of Information System

Assignment

1. Explain how is an information system is helpful for an organization
2. Explain the role of business information systems
3. Write the advantages of MIS
4. Explain an Enterprise System

Module V - Basics of Databases

Assignment

1. Write the importance of Data Processing
2. What are advantages of Data Management Systems
3. Explain various database management tools
4. Explain Relational Data Model Concept

DCA - Paper 2 (Theory)

DCA 102- NETWORKING AND INTERNET

Module I - Computer Networks

Assignment

1. Explain the various broadband technologies available for Internet access
2. Write the disadvantages of social media. What are the different ways to avoid the disadvantages of social media?
3. Compare GSM and CDMA standards
4. Explain the advantages of a smart card.

Module II - Introduction to Internet

Assignment

1. Explain any two types of web browsers
2. Briefly explain the concept of cookies, browsing history, parental control
3. List out the different types of email service providers and explain any two
4. Explain the importance of google class room in modern education

Module III - e-Governance and e-Commerce

Assignment

1. What are the major e-Commerce websites in India and explain?
2. Explain the idea of e-Office
3. What are the benefits of e-Governance to society?
4. What are the services provided by UMANG and Digi Locker?
5. What are the services provided by kerala.gov.in?
6. Write the importance of Citizen service portal

Module IV - Mobile Computing and Digital Payment System

Assignment

1. Explain in details about various outdated mobile operating systems
2. Explain the advantages and disadvantages of using mobile
3. Explain the concept of BHIM and Aadhaar Enabled Payment System (AEPS)
4. Explain about payment KIOSK
5. Explain the concept of ATM and CDM

Module V - Social Media & Cyber Security

Assignment

1. Explain the elements of cyber security
2. Explain the impact of social media in modern life
3. Explain the working and the advantages of Digital Signature
4. How to market a product using social media?
5. How to provide privacy and security features in your different social media accounts
6. Explain amendments in IT act.

DCA - Paper 3 (Theory)

DCA 103 - OFFICE AUTOMATION SYSTEMS

Module I - Word Processing and Indian Language Computing

Assignment

1. Malayalam / Hindi Paragraph typing
2. MS Word document preparation
3. Open office Writer document preparation
4. Preparing letters using Mail merge

Module II - Spreadsheets

Assignment

1. Preparing salary details of Employees
2. Different types of functions in MS Excel
3. Vlookup Applications with 2 files

Module III - Presentations

Assignment

1. What tools are available in PowerPoint to customize presentations?
2. Explain the steps to create animation and transition in PowerPoint.
3. How to change layout, header and footer in PowerPoint?

Module IV - Basics of Accounting & Billing Systems

Assignment

1. Explain basics of accounting
2. Explain Assets & Liabilities in accounting
3. Explain Features of Billing System
4. Explain billing using MS-Excel

Module V - Printing Technologies & Multimedia

Assignment

1. Explain various technologies used for printing
2. Explain image file formats
3. Explain Multimedia system architecture
4. Explain tools for integrating Audio with Video

DCA - Paper 4 (Theory)

DCA 104 – PRINCIPLES OF PROGRAMMING AND WEB TECHNOLOGIES

Module I - Basics of Programming

Assignment

1. Create Algorithms and flow charts.
 - a) Making instant coffee
 - b) Finding the biggest number among 3 numbers.
2. Programming language classifications and examples.
3. Object oriented programming concepts.
4. Microprocessor generations and types.
5. Differentiate Compiler and interpreter.

Module II - Introduction to C Programming

Assignment

1. Explain C Tokens.
2. Programs to illustrate the working of various Operators.
3. Explain various condition statements with examples
4. Explain looping statements with example programs.
5. Create a four-function calculator using switch-case.

Module III - C Programming: Arrays and Functions

Assignment

1. Single and multidimensional arrays creation, reading and printing, uses.
2. Explain any 5 string handling functions with example programs.
3. Create a four function calculator with functions add(),sub(), mul(), div()
4. Write a function to find the cube of a number.
5. Write a C program to find the factorial of a number using recursion.

Module IV - Web Programming: HTML, CSS and JavaScript

Assignment

1. Difference between HTML and HTML5
2. Explain any 5 HTML tags and their uses.
3. Create a Contact Us Form for a website using HTML
4. Create a Registration Page using HTML
5. Create a login page and perform form validation using JavaScript

Module V - Introduction to PHP and Python Programming

Assignment

1. Write a short note on various web servers.
2. Explain the features of the Python programming language.
3. Explain various looping and decision control statements in Python

DCA - Paper 5 (LAB)

DCA 105 - Computer Basics and Office Automation

Lab Sample Questions

Section 1

1. Perform the installation of printer in windows and Linux
2. Replace a damaged RAM in your computer
3. Insert a VGA card in correct port in the mother board
4. Create user named "CDIT" in windows 10 and set a password
5. Create a word document named "sample.docx" and save the file in "D:\test\
6. Create a folder "test" in linux and rename it as "test1" using command

Section 2

1. Connect your computer to internet
2. Download your birth certificate from website
3. Create Digi locker account add your driving license

Section 3

For Microsoft Word and Open Office writer

Question 1

Centre for Development of Imaging Technology, C-DIT, a Government of Kerala organization under Electronics and Information Technology, with corporate culture is concerned with customizing technology for the masses. Having its genesis in 1988 from a perception to use imaging technology as a tool to achieve progress, C-DIT has lived up to that dream.

- a) Type the paragraph above as it is using "Times New Romanst" , font size 12.
- b) Change the font type to "Book anitique" and size to 14
- c) Alignment to your paragraph to right margin.
- d) Save this file as C-DIT.docx in "My Documents" folder using save as option.
- e) Edit some part of your document and save again using save option

- f) Close the file.
- g) Open this file again using open option from office button.
- h) View the file you have created using print preview option.
- i) Take a print out of this document through print option.
- j) Open the above document
- k) Highlight the word "C-DIT"
- l) Search for word "kerala" using find option.
- m) Replace the word "C-DIT" with "C-DIT TED".
- n) Under line the word "C-DIT TED"

Question 2

Create document with following contents

"Microsoft office package includes MS word, MS PowerPoint, MS Excel and MS Access."

- a) View your document in portrait and landscape view using orientation option in page layout menu.
- b) Change the colour of the text using font colour option.
- c) Create a list as follows in table

1. MS Word	• MS Word	I. MS Word
2. MS Power point	• MS Power point	II. MS Power point
3. MS Excel	• MS Excel	III. MS Excel
4. MS Access	• MS Access	IV. MS Access

- d) Insert a picture below the above created table
- e) Insert a clip art in same document
- f) Insert different shapes
- g) Insert water mark "Sample" in this document
- h) Insert header and footer.

Question 3

Create a house warming invitation letter to your 5 friends, using mail merge

For Microsoft Excel and Open Office Calc.

1. Familiarization MS Excel/Open office calc interface
2. Create a workbook and enter text and numbers in worksheet
3. Create a workbook and enter data in the following format on the first sheet from the cell A1

	A	B	C	D	E
1	MONEY VALUES OF METALS				
2	Name	Symbol	Price/gm	Colour	
3	Copper	Cu	80.00	Golden Brown	
4	Gold	Au	4500.00	Yellow	
5	Silver	Ag	200.00	Grey	
6	Mercury	Hg	300.00	White	
7	Iron	Fe	100.00	Ash	
8					

- a) Adjust the column width to fit each data into the cell
- b) Change the format of price cells column with decimals & comma separator.
- c) Change the format of price cells with a \$ (dollar) currency style & also change \$ to ₹
- d) Find the average and sum of price field.
- e) Arrange the data in the ascending order of name and descending order of price
- f) Change the name of sheet to 'Metals'
- g) Change the font to 'Arial Black with the size 12 for all the data entered
- h) Clear the format of contents in the sheet

Activate sheet2 & do the following.

- a) Fill the month names vertically from the cell A1
- b) Fill the day names horizontally from the cell B1
- c) Fill the range from C2 with numbers starting from 100 at regular intervals of 5 Upto C11.
- d) Save the Workbook as "Metals"

4. Simple Arithmetic-Add two numbers

5. Design a table on worksheet as follows

	A	B	C	D	E	F
1	No	Item	Unit Price	Quantity	Item stock	Total Value
2	1	Water	20	500	250	
3	2	Fanta	35	300	175	
4	3	Coca Cola	40	200	265	
5	4	Frooty	45	450	560	
6	5	Sprint	38	500	890	

- Define names on the column 3 and 4 correspondingly
- Fill up the Total Value filed using names
- Find out the sum of the total value of all items
- Find out the average of unit price
- Protect the worksheet with a password
- Protect the workbook with a password
- Save the file with name "list"

6. Extending an operation by clicking and dragging-Add 5 sets of two numbers

7. Absolute and Relative Referencing-Consider the problem of preparing a stationary order for the month of March. The item description, quantity and cost per item are available. The total cost per item is to be calculated and the final cost per item involves a sales tax of 2% over the total cost. The gross total and the net total are to be displayed.

8. Create an excel sheet to print the multiplication tables from 1 to 5 with each table ending at its 10th multiplication limit (i.e., $1 \times 10 = 10$.. $5 \times 10 = 50$).

9. Check the order details of a company shown below

	A	B	C	D	E	F	G	H	
1	ORDER DETAILS								
2	ORDER ID	PRODUCT	UNIT PRICE	QUANTITY	DISCOUNT	REVENUE	TAX(2% FOR EACH ORDER)	NET INCOME	
3	101	Brush	30	10	0%	?	?	?	
4	101	Powder	50	25	0%	?	?	?	
5	102	Umbrella	250	10	5%	?	?	?	
6	102	Rain Coat	600	10	0%	?	?	?	
7	102	Shoes	550	6	8%	?	?	?	
8									

- Calculate the revenue and tax on the revenue for each product
- Calculate the net income of each product
- Calculate the total revenue of all products
- Calculate the total net income of all products

10. Check the following worksheet and find

	A	B	C	D	E	F	G
1	STUDENTS MARK DETAILS						
2	Roll No	Name	Maths	Physics	Chemistry	Sum	Average
3	1	Sunil	85	75	55		
4	2	Rahul	100	90	80		
5	3	Seetha	88	65	66		
6	4	Ajay	90	80	53		
7	5	Manu	95	90	78		

- Find the total and average of marks of 3 subjects of five students in a class in the board exam.
- Calculate the maximum mark, minimum mark and average for each subject using function

11. Create a worksheet containing the name and age of people. Count the number of people in each category as minor(<18), major(18-25),middle aged(26-40), above middle age (40-60) and senior citizen (61-100) using a single function for each scenario and print the count pertaining to the conditions.
12. Create a worksheet containing the consignments of different fruits from different suppliers. The fruit names in column A, supplier's names in column B, and quantity in column C. Find out how many quantities of each fruit is received.
13. See the below table

	A	B
1	Corporation Budget 2022	
2	Category	Amount in Lakh
3	Health	250000
4	Education	500000
5	Development	600000
6	Others	200000

- a) Make a Pie Chart
 - b) Make a Line Chart
 - c) Make a column Chart
14. Which settings are to be altered to type or enable Malayalam in OpenOffice.
 15. Type any Malayalam tory and format the same using Malayalam Inscript Keyboard for performing different character formatting commands from the toolbar, sidebar, and Character window.
 16. Create a Mathrubhumi Calender for any month. The calender must be in the same format as seen and all the formating must be applied.
 17. Open Writer and prepare the following labels for
 - a) Schools to invite parents for annual function. The contents of the invitation must be in Malayalam. This must be in the form of a Letter.
 - b) Prepare a Meeting Agenda for School PTA Meeting and sent it via email to the parents,

For Microsoft PowerPoint and Open Office Impress

1. Create a presentation with three slides
 - a) Apply any document theme
 - b) Add a title and insert slide contents
 - c) Save the presentation with a file name
2. Create a Presentation with a numbered Lists, add a title, format text and save.
3. Prepare a presentation to present the following data in two slides

Animation

- We can animate text, pictures, shapes and other objects.
- It means to add a special visual or sound effect to an object
- Zoom
- Bounce
- Fly In
- Float In
- Split

Type of Effects

1. Entrance
 2. Emphasis
 3. Exit
 4. Motion Path
- a) Add a new slide and insert a picture
 - b) Animate the slide contents with different effects.
 - c) Save presentation with a file name and make a slide show
 - d) Close the presentation
4. Create a blank presentation
 - a) Change slide layout
 - b) Add a title in word Art
 - c) Add slide contents

- d) Insert images in to the slide
 - e) Change background colour
 - f) Animate slide contents
 - g) Save and Run Presentation
5. Open any of your presentation
- a) Add proper Header and Footer
 - b) Add a new slide and insert some shapes
 - c) Include Date and Time to slides
 - d) Duplicate the first slide and change contents
 - e) Change the view to Slide sorted view
 - f) Check Spelling & Grammar
 - g) Change animations given to slide contents
 - h) Save and close Presentation
6. Create a presentation with at least 5 slides
- a) Apply any theme
 - b) Add text contents to the slides
 - c) Create a Watermark
 - d) Using shapes, create callouts, Banners and Stars
 - e) Add text to callouts
 - f) Apply Animations to slide contents
 - g) Reorder Animation
 - h) Check various presentation views
 - i) Save and Run presentation
7. Open previously saved presentation
- a) Change background colour and text colour
 - b) Check different transition effects and apply
 - c) Automate the presentation by specifying a waiting time of 2 seconds
 - d) Start slide show from beginning

8. Create a blank presentation with at least 3 slides
 - a) Add a banner title and contents to each slide
 - b) Insert an audio in to the third slide
 - c) Save and run presentation
9. Create a blank presentation with at least 2 slides
 - a) Add contents to the slides
 - b) Apply various animations to slide contents
 - c) Check various transition effects and apply
 - d) Add a video to your presentation
 - e) Save and run presentation
10. Create a custom slide show

DCA - Paper 6 (LAB)

DCA 106 -Lab II - Programming in C and Python and Web Application Development (HTML & CSS, JavaScript and PHP)

Lab Sample Questions

Section 1- System Programming (25 Hrs)

Part A - Programming in C

1. Write a C program to calculate simple interest.
2. Write a program in c to find the biggest number among three numbers
3. Write a program in c to calculate square of a number
4. Write a program in c to find even or odd numbers.
5. Write a c program to input marks from 5 subjects find the sum and average
6. write c programs to generate following patterns.

a) 1
 1 2
 1 2 3
 1 2 3 4

b) *
 **

7. Write a c program to print even numbers between 1 and 100.
8. Write a program in c to find the grade of student.
9. Create a function sum and perform addition operation.
10. Write a c program to print values in an array.

Part B - Python Programming

1. Write a program to print "helloworld"
2. Write a program to add two numbers
3. Write a program to finding biggest among two numbers
4. Write a program to find simple interest
5. Write a program to print even numbers between 1 to 100
6. Write a program to concatenate two strings
7. Write a program to accept a string from console and print it in reverse order
8. Write a program to print the given list after removing all duplicate values with original order reversed list=12,24,35,24,88,120,155,88,120,155,230,545,23,454,88
9. Write a program to add members in a vegetable set.
10. Write a program to Write a Python program to concatenate the following dictionaries with values
dic1={1:10, 2:20}
dic2={3:30, 4:40, 5:50}
dic3={6:60,7:70, 8:80, 9:90 } to create a new one.
11. Write a Python program to find the index of an item of a tuple.
12. Write a Python program to convert a tuple to a dictionary

Section 2 - Web Application Development

Part A - HTML&CSS

1. Write a program to display "Helloworld"
2. Create a webpage that prints the numbers 1 - 10 to the screen
3. Write 2 paragraph about yourself and setup heading "Who am I" using appropriate tags
4. Print a paragraph that is a description of a book, include the title of the book as well as its author. Names and titles should be underlined, adjectives should be italicized and bolded

5. Create a webpage and set its title to "This is my page"
6. Print two lists with different versions of Windows OS and Android. One list should be an ordered list, the other list should be an unordered list
7. Create a web page with link name "C-DIT" and reference goes to www.cdit.org
8. Display five different images. Skip two lines between each image. Each image should have a title.
9. Write an HTML program to display your SSLC marks in tabular form.
10. Create website that collects your personal information
11. Write a simple program to display your name
12. Write a program to display a paragraph at center
13. Write a program to display heading
14. Write a "hello world" program with background blue
15. Write program to display the word "Hello world" in different types borders
16. Write a program to set margin size 70px
17. Write a program to display "helloworld" in solid red border and green outline

Part B - JavaScript

1. Write a program to find the sum of three numbers
2. Write a program to find the product of two numbers using function.
3. Write a program to find the characters with in a string.
4. Write program to print numbers from 1 to 100 using for loop.
5. Write program to print first 100 counting numbers using while loop.
6. Write a program to show text "Javascript" when click on the button "clickme"
7. Write a program to display date and time when click on the button "time".

Part C - PHP

1. Installing PHP on Windows and Linux.
2. How to write PHP Scripts and Simple Hello World program?
3. Write a PHP program to display the today's date and current time
4. Write a PHP program to calculate sum of given number
5. Write a PHP program to read the employee detail using form
6. Develop a PHP program for email registration



www.cdjit.org

Part B - Python Programming

1. Write a program to print "helloworld"
2. Write a program to add two numbers
3. Write a program to finding biggest among two numbers
4. Write a program to find simple interest
5. Write a program to print even numbers between 1 to 100
6. Write a program to concatenate two strings
7. Write a program to accept a string from console and print it in reverse order
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dic3={6:60,7:70, 8:80, 9:90 } to create a new one.
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Section 2 - Web Application Development

Part A - HTML&CSS

1. Write a program to display "Helloworld"
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Part B - JavaScript

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3. Write a PHP program to display the today's date and current time
4. Write a PHP program to calculate sum of given number
5. Write a PHP program to read the employee detail using form
6. Develop a PHP program for email registration



www.cditi.org

DEPARTMENT OF ACCOUNTING AND TAXATION (B. VOC)

Add on Course: CCAT01 (P) DIGITAL MARKETING

Syllabus

Course Code: CCAT01 (P)

Total Hours: 30

Marks: 25

Course Objectives:

- To equip the students to handle social media devices for advertisement.
- To understand basic social media devices

Course details:

Module 1: Digital Marketing, Introduction, Importance, Digital marketing tools.

4 hours

Module 2: Face book Business Page Creation, signing in to face book, creating business page-steps, add information, Facebook advertising, ads manager, advertisement campaign.

10hours

Module 3: Linked In page creation, steps, LinkedIn advertisement creation

4hours

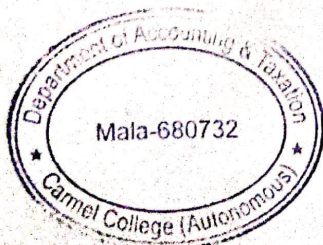
Module 4: Instagram Business Account, Steps, creation of Instagram advertisement, steps

6 hours

Module 5: Brochures and Poster Making- Basics, Steps.

6 hours

References: SA Sherlekar, "Marketing Management, Concepts and Cases", Himalaya Publishing House Private Ltd.



Boenat
Head
Department of Accounting & Taxation
Carmel College (Autonomous)
Mala-680732

AUDIT COURSE

1. ENG2 A02 Translation Theory and Practice (Credits: 4)

Course Description

The course aims at familiarizing the students with the core of translation theory and some of the current theoretical positions, and at offering training in translation of literary and non-literary texts and interpreting. The students can also obtain a general understanding of the current debates in the discipline.

Texts/topics for Study

UNIT I – Theoretical and Descriptive translation studies

Types of translation – equivalence in translation – process of translation – language and culture in translation – translatability - Audiovisual Translation – Translation in Journalism - basic features of interpreting – introduction to Machine Translation - historicity and politics in literary translation – Indian tradition in translation theory.

Recommended Reading

- Susan Bassnett : Translation Studies. Chapter I, “Central Issues.”
Andre Lefevere : “Beyond Interpretation or the Business of (Re)Writing.”
AyyappaPanikker : “Towards an Indian Theory of Literary Translation.”
P. P. Raveendran : “Translation and Sensibility: The Khasak Landscape in English and Malayalam”
Jorge Diaz Cintas : “Audio-Visual Translation: An Overview of its Potential,”
New Trends in Audio Visual Translation (Ed. Jorge Diaz Cintas)
Sara Bani : “Án Analysis of Press Translation Process,” Translation in Global News, (Ed. Kyle Conway and Susan Bassnett)
John Milton : “Translation Studies and Adaptation Studies”

UNIT II - Translation Practice

Practice in translation and interpretation

The direction of translation/interpreting will be from Malayalam or Hindi into English and from English into Malayalam/Hindi. Tamil and Gujarati may be considered as additional source/target languages for translation practice on demand by students registered for the course.

Evaluation: Based on the translation of a work not below 600 words.

AUDIT COURSE

ENG1 A01 Writing Skills

This course aims at imparting practical skills in writing to students. The focus will be on developing the linguistic, cognitive and logical skills required in writing different types of essays, anecdotes, academic papers and reports.

Course content

The course material would consist of textbooks on good writing and specimen pieces representing various kinds of essays, articles, advertisements and anecdotes.

Main Texts

Palmer, Richard

Strunk, William, EB White and Maria Kalman.

McCarthy and O'Dell

Write in Style: A guide to Good English.

The Elements of Style

English Vocabulary in Use

(Evaluation : based on a paper not below 600 words)

Course: HIS 1A 02 Travel and Tourism Management Audit 4

Ability Enhancement Course (AEC)

Paper II: Travel and Tourism Management

Objectives

This is an Ability Enhancement Course, which is not a part of regular classroom teaching. The students should complete this course making use of their facilities including the online platforms. The Department will conduct the examination at the end of the semester. The course will help the students to learn the basics of the travel and tourism management profession and help them to do it as a part-time job or apprenticeship. History plays an important role in the tourism industry. Many of the major tourism sites are historical sites. Thus students can act as tourist guides and also will be successful as travel writers particularly in cultural or heritage tourism.

Learning Outcome

- Enable the student to evaluate the types of tourism.
- Enable the student to analyse tourism concepts.
- Enable the student to locate the potential tourism sites in their area.
- Enable the student to demonstrate their skill as cultural or heritage tourism writers.

Module 1: Tourism Concepts

Definitions and Historical development of tourism – Growth of travel through ages - Types of tourist-Visitor Excursionist - Types and Forms of Tourism - characteristic Model of tourism system-

Leiper's Model - Components of tourism - characteristics and classification of tourist

Module 2: Basic components and types of Tourism

Tourism Statistics - type and method of measurement - Classification on elements of tourism

-

Types of tourist motivation and classification - Domestic and International tourism – features

-

pattern of growth – profile - domestic tourism in the state of Himachal Pradesh, Madhya Pradesh,

Gujrat, Goa and Kerala - analysis of International destination of USA, UK, France, China and Malaysia

Module 3: Impact of Tourism

Positive and Negative Impacts of Tourism - Socio Cultural, Economic, Environmental and Political

- Tourism Organizations - Objectives and Role of ITDC, ASI, TFCI, Ministries of Railways and

Civil Aviation - National and International organizations and associations - IATO, TAAI, FHRAI,

WTO, ICAO, FAITH and IATA

References

Chunky Gee et-al, Travel Industry

Holloway, J. C., The Business of tourism, Pitman Publishing, London, 1994.

Mill and Morisson, Tourism Systems

Medlik, S., Understanding tourism, Oxford, 1997

Prannath Seth, Successful Tourism Management

P.C. Sinha, Tourism Management, Vol - 4

R. Gartner, Tourism Development

J.K. Sharma, Tourism Planning and

Development Sagar Singh, Studies in Tourism

Cooper C., Fletcher J., Gilbert D and Wanhil. S, Tourism: Principles and Practices

McIntosh, R.W., Tourism: Principles and Practices
Burkart & Medlik, Tourism : Past, Present and Future
S.P. Gupta, Krishna Lal, Mahua Bhattacharya, Cultural Tourism in India

Course : HIS 2A 02 Archival Studies Audit 4
Professional Competency Course (PCC)
PAPER II : ARCHIVAL STUDIES

Objectives

This is a Professional Competency Course, which is not a part of regular classroom teaching. The students should complete this course making use of their facilities including the online platforms. The College will conduct the examination at the end of the semester. This paper introduces the essential concepts, ideas and methods of archival studies. It also familiarizes the student with various scientific methods of preservation of historical document. It also will equip the student to preserve the documents and by which may open professional opportunities in this field.

Learning Outcome

- Ability to understand major concepts of the archival studies
- Ability to evaluate the changes in various methods of preservation in various parts of the world
- Ability to analyse the process of preservation of archival records
- Ability to demonstrate the preservation techniques

MODULE I: Archives and Archival studies

Definitions- Meanings- History of Archives Keeping- Europe- USA- India- Ancient Period- Medieval Period- Modern period.

Relations with State and Archives- Characteristics of Archives- Classification of Records- Archivist- Private Archives.

MODULE II: Evolution of Modern Archives

Paper- Ink- Paints-Typewriters- Xerox- Packaging Materials- Collection of Records- Registry System- Record Room- Digitalization-moving image archives and sound archives- micro filmmicro-fiche- film archives- oral history archives- online archives.

Archives in Modern India-British government-Maps, surveys, photographs- legal records-Folklore and archives.

MODULE III: Uses and Functions of Archives

Uses- Historical Value- Administrative value- Collection of Statistical Data- Intellectual Value- Social Value; Functions- Supply of Records to administrators and Researchers- Publication-Library- Offering training- Weeding up of Records-.

MODULE IV: Methods of Organization and Preservation of Records

Organization- Europe- France- England- USA- India- Administration- Administration of National Archives in India- Archival legislation in India-Appraisal of records- Record Management- Transfer of records to Archives- Arrangement of Records- Finding Aids- Methods of Preservation- Preliminary and Precautionary measures- Preventive Measures- Methods of Preservation and Repair

of Archival Records- Control of insects- Thymol Fumigation- Thymol Chamber- Protective measures- Bleaching Method- Re Sizing- Full Pasting- Backing- Chiffon Repair- Lamination- Docketing- Guarding etc.

MODULE IV: Practical

Visit Kerala Regional Archives or any other archives and Prepare a report on any of the major sources Preserved in it. (eg. British Survey Reports, Census Report)

Reference:

Muller, Feith and Furin, *Manual for the Arrangement and Description of Archive*, H.W. Wilson Co., 1968.

State Archives Department, *An Introduction to the Kerala State Archives*, Government of Kerala, 1975.

Schellemborg T. R., *Modern Archives: Principles and Techniques*, Melbourne, Australia, 1956.

Schellemborg T. R., *The Management of Archives*, Columbia University Press, 1965

Scargil- Bird, *Guide to Records in Public Records Office*, London, 1896

Tolboys Wheeler J, *Early Records of British India*, 1878

Gregory Hunter, *Developing and Maintaining Practical Archives*, New York, 2003

Abdul Majeed C.P., *Archival Science: Past Present and Future*, Kottayam, 2017

Bhargava, K.D., *An Introduction to the National Archives*, New Delhi, 1958.

Cook Michael, *Archives Administration*, Dawson, 1977.

Guide to Archives Series, Regional Archives Department, Eranakulam.

Isaac Jayadhas, *Archives Keeping*, Villukury, 2012.

James B. Rhoads, *The Role of Archives and Records Management in National Information System*, 1983.

Daniel J Cohen and Roy Rosenzweig, *Digital History: A Guide to Gathering, Preserving and Presenting the Past on the Web*, 2006.

Judith Ellis, *Keeping Archives*, Alta Mira Press, 2003.

**Course Title: Quantitative Aptitude for competitive examinations
QAM01**

UNIT – I

Quantitative Ability (Basic Mathematics): Number Systems, LCM and HCF, Decimal Fractions, Simplification, Square Roots and Cube Roots, Average, Problems on Ages, Surds & Indices, Percentages, Problems on Numbers.

UNIT – II

Quantitative Ability (Applied & Engineering Mathematics): Logarithm, Permutation and Combinations, Probability, Profit and Loss, Simple and Compound Interest, Time and Distance, Time and Work, Ratio and Proportion, Area, Mixture.

UNIT – III

Data Interpretation and Reasoning: Tabulation, Bar Graphs, Line Graphs, Pie Chart, Venn Diagrams, Analytical Reasoning, Mirror Images.


UNIT – IV

Logical Reasoning: Verbal Analogy, Verbal Series, Verbal Classification, Blood Relation, Direction Sense, Coding – Decoding, Calendars, Clock.

Text Books :

1. Dr. R. S. Aggarwal, Quantitative aptitude for Competitive examination By R S Aggarwal, S. Chand Co. Pvt. Ltd., New Delhi, Eighth Edition,
2. Dr. R. S. Aggarwal, A Modern Approach To Verbal & Non Verbal Reasoning, S. Chand Co. Pvt. Ltd., New Delhi, Revised Edition, 2018




Head
Department of Mathematics
Central College (Autonomous)
Maha-BL0732

SYLLABUS
CERTIFICATE COURSE
APH3CC01PYTHON- A STEPPING STONE TO
ARTIFICIAL INTELLIGENCE

1. Basics of Python (3 hours)

Introduction, High Level language, Compiler and Interpreter, Development of Computer Programme, Advantages of Python over other languages, Interactive mode and File mode, Python Programme Layout, Input and Output statements, Variables and rules for naming variables.

2. Data types in Python and Functions (10 hours)

Basic data types in Python - Numeric, String, List, Tuples, Dictionaries, Boolean, Sets, Operations and Built in functions for each datatype.

Type conversion, Python Operators, Statements and Expressions.

Functions, User defined and Built in Functions, Formatted output

3. Conditional, Control Statements and File Operations (7 hours)

If- elif- else statement, nested if, while statement, for loop, break and continue statements

File Operations- Read, write and Open

4. Numerical Methods (10 hours)

Advantages of Numerical Methods, Curve Fitting- Least square approximation-fitting of a straight line, Finite difference operator, Interpolation, Numerical Differentiation, Numerical Integration, Root finding- Newton Raphson method, Numerical solution of differential equation- Euler's method

5. Programming using Python

(10 hours)

Programs to do basic arithmetic operations- finding square root, area of a rectangle, swap the values of two variables, to check if a number is even and odd, to check if a year is leap year or not, to display the Fibonacci sequence or n terms with and without using recursion, to print the factors of a number, to find the factorial of a number, operations using matrices, generation of dictionary, position and velocity of a freely falling body in air and in viscous medium

Reference:

1. Introduction to Computing and Problem Solving Using Python by E Balagurusamy
2. Python for Education by Ajith Kumar
3. Computational Physics by VK Mittal, RC Verma and SC Gupta

DEPARTMENT OF POLITICAL SCIENCE
CERTIFICATE COURSE IN HUMAN RIGHTS 2022-23

Course Code:POLHRI

SYLLABUS

Module I: Human Rights: Meaning, evolution and importance.

Approaches to the study: Western, Marxian, Feminist and Third World. **(8 hours)**

Module II: UNO and Human Rights: Universal Declaration of Human Rights **(6 hours)**

Module III: Human Rights Movements: Amnesty International, World Watch, Asia Watch, Environmental Movements. **(8 hours)**

Module IV: Challenges to Human Rights: Terrorism, Religious fundamentalism, Police atrocities against women, children and other marginalized sections. **(8 hours)**

Books and References

1. Andrew Clapham: Human Rights: A Very Short Introduction, Oxford University Press, New York,2007.
2. Chiranjeevi Nirmal: Human Rights in India, Oxford University Press, New Delhi, 1997.
3. Darren J.O Byrne, (ed): Human Rights : An Introduction, Pearson Education Pvt Ltd, New Delhi,2004.
4. Janusz Symonides (ed): New Dimensions and Challenges for Human Rights, Rawat Publications,Jaipur, 2006.
5. Johari J.C: Human Rights and New World Order, Anmol Publications, New Delhi, 1998.
6. Krishna Iyer.V.R. : Minorities, Civil Liberties and Criminal Justice, People's Publishing House, New Delhi, 1980.
7. Shashi Motilal & Bijayalaxm : Human Rights, Gender and Environment, Allied Publishers, New Delhi, 2006
8. South Asia Human Rights Documentation Centre : Introducing Human Rights, OUP, New Delhi, 2007.

Faculty-in-charge

1.Dhani Mol M M,Assistant Professor,(M.A)

Scheme of Examination

The external QP with 40 marks and Internal examination is of 10 marks. Duration of each external examination is 1.5 Hrs. The student will have to secure 40% or more in order to complete the course and receive certificate.



CARMEL COLLEGE (AUTONOMOUS) MALA

M.Sc PROGRAMME IN BOTANY



Under
CHOICE BASED CREDIT SEMESTER SYSTEM
SCHEME & SYLLABUS
2022

UNIVERSITY OF CALICUT				
M.Sc. Programme in Botany (CBCSS) (from 2020 admissions onwards)				
Programme, structure of courses and distribution of credits				
Course	Title	Credits		
		Internal	External	Total credits
Semester I				
BOT1C01	Phycology, Bryology, Pteridology and Gymnosperms	20%	80%	5
BOT1C02	Mycology and Lichenology, Microbiology and Plant Pathology	20%	80%	5
BOT1C03	Angiosperm Anatomy, Angiosperm Embryology, Palynology and Lab Techniques	20%	80%	5
BOT1L01	Practicals of Phycology, Bryology, Pteridology, Gymnosperms, Mycology and Lichenology	20%	80%	2.5
BOT1L02	Practicals of Microbiology, Plant Pathology, Angiosperm Anatomy, Angiosperm Embryology, Palynology and Lab Techniques.	20%	80%	2.5
Semester II				
BOT2C04	Cell Biology, Molecular Biology and Biophysics	20%	80%	5
BOT2C05	Cytogenetics, Genetics, Biostatistics, Plant Breeding and Evolution	20%	80%	5
BOT2C06	Plant Ecology, Conservation Biology, Phytogeography and Forest Botany	20%	80%	5
BOT2L03	Practicals of Cell Biology, Molecular Biology, Biophysics and Cytogenetics	20%	80%	2.5
BOT2L04	Practicals of Genetics, Biostatistics, Plant Breeding, Plant Ecology, Conservation Biology, Phytogeography and Forest Botany	20%	80%	2.5
Semester III				
BOT3C07	Plant Physiology, Metabolism and Biochemistry	20%	80%	5
BOT3C08	Angiosperm Morphology, Angiosperm Taxonomy and Plant Resources	20%	80%	5
BOT3C09	Biotechnology and Bioinformatics	20%	80%	5
BOT3L05	Practicals of Plant Physiology, Metabolism, Biochemistry, Angiosperm Morphology and Angiosperm Taxonomy	20%	80%	2.5
BOT3L06	Practicals of Plant Resources, Biotechnology and Bioinformatics	20%	80%	2.5
Semester IV				
BOT4E01	Elective I	20%	80%	5
BOT4E02	Elective II	20%	80%	5
BOT4L07	Practicals of Electives	20%	80%	2
BOT4D01	Dissertation	20%	80%	5
BOT4V01	Viva voce	0%	100%	3
Total				80 credits
Audit Courses (To be completed within the first three semesters by the students)				
ACIAEC	Ability Enhancement Course	100%	0%	4
AC2PCC	Professional Competency Course	100%	0%	4
(The credits earned through the audit courses will not be added for SGPA/CGPA)				
Duration of Theory Examinations (External) as well as Practical Examinations (External) will be 3 hours				
1 credit = 1.25 hours of teaching; There will be no regular classes/workload for audit courses.				
1 theory/dissertation hour= 1.5 hours of workload; 1 practical hour= 1 hour of workload				

Audit Courses (To be completed within the first three semesters by the students- Evaluation is 100% internal based on Examination /Test (40%) + Seminar / Presentation (30%) + Written assignment (30%) and the marklists are to be forwarded to the university by the end of the third semester)				
ACIAEC	Ability Enhancement Course: Scientific Documentation and Report writing	100%	0%	4
AC2PCC	Professional Competency Course: Intellectual Property Rights	100%	0%	4

ACIAEC: Ability Enhancement Course: Scientific Documentation and Report writing

Collection of scientific literature from secondary and primary sources.

Preparation of literature reviews and review papers- structure and components

Preparation of research papers- structure and components

Scientific conduct, ethics, authorship issues, plagiarism, citation and acknowledgement. Importance of language and effective communication.

Presenting a paper in a scientific seminar- oral and poster presentation

Preparation of oral presentations

Preparation of scientific posters

Course outcomes

1. Provide insights on data collection, organizing research schedules, collection of databases and its interpretation, scientific writing and presentation of research findings on various platforms.

AC2PCC: Professional Competency Course: Intellectual Property Rights

1: Introduction to intellectual property right (IPR)- Concept and kinds. Economic importance. IPR in India and world. IPR and WTO (TRIPS, WIPO).

2 : Patents- Objectives, Rights, Patent Act 1970 and its amendments. Procedure of obtaining patents- Working of patents. Infringement.

3: Copyrights- Introduction. Works protected under copyright law. Transfer of Copyright. Infringement.

Trademarks- Objectives, Types, Rights. Protection of goodwill. Infringement.

4: Geographical Indications- Objectives, Justification, International Position, Multilateral Treaties, National Level, Indian position.

5: Protection of Traditional Knowledge- Objective, Concept, Holders, Issues concerning, Bio-Prospecting and Bio-Piracy, Alternative ways, Protectability, Traditional knowledge on the International Arena, at WTO, at National level, Traditional Knowledge Digital Library.

6: Protection of Plant Varieties- Plant Varieties Protection-Objectives, Justification, International Position, Plant varieties protection in India. Rights of farmers, Breeders and Researchers. National gene bank, Benefit sharing. Protection of Plant Varieties and Farmers' Rights Act, 2001.

7:BiotechnologyandIntellectualPropertyRights-PatentingBiotechInventions:Objective,Applications,Concept of Novelty, Concept of inventive step, Microorganisms, Moral Issues in Patenting Biotechnologicalinventions.

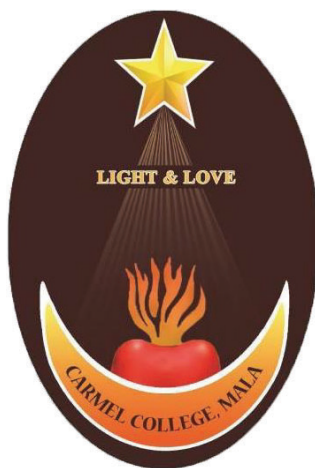
Course outcomes

1. Develop understanding of various legal provisions for safeguarding intellectual contributions from getting misused / exploited.



CARMEL COLLEGE (AUTONOMOUS) MALA

M.Sc PROGRAMME IN BOTANY



**Under
CHOICE BASED CREDIT SEMESTER SYSTEM
SCHEME & SYLLABUS
2022**

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BOT2C06	Plant Ecology, Conservation Biology, Phytogeography and Forest Botany	20%	80%	5
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Semester III				
BOT3C07	Plant Physiology, Metabolism and Biochemistry	20%	80%	5
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BOT3C09	Biotechnology and Bioinformatics	20%	80%	5
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BOT4L07	Practicals of Electives	20%	80%	2
BOT4D01	Dissertation	20%	80%	5
BOT4V01	Viva voce	0%	100%	3
Total				80 credits
Audit Courses (To be completed within the first three semesters by the students)				
ACIAEC	Ability Enhancement Course	100%	0%	4
AC2PCC	Professional Competency Course	100%	0%	4
(The credits earned through the audit courses will not be added for SGPA/CGPA)				
Duration of Theory Examinations (External) as well as Practical Examinations (External) will be 3 hours				
1 credit = 1.25 hours of teaching; There will be no regular classes/workload for audit courses.				
1 theory/dissertation hour= 1.5 hours of workload; 1 practical hour= 1 hour of workload				

Audit Courses (To be completed within the first three semesters by the students- Evaluation is 100% internal based on Examination /Test (40%) + Seminar / Presentation (30%) + Written assignment (30%) and the marklists are to be forwarded to the university by the end of the third semester)				
ACIAEC	Ability Enhancement Course: Scientific Documentation and Report writing	100%	0%	4
AC2PCC	Professional Competency Course: Intellectual Property Rights	100%	0%	4

ACIAEC: Ability Enhancement Course: Scientific Documentation and Report writing

Collection of scientific literature from secondary and primary sources.

Preparation of literature reviews and review papers- structure and components

Preparation of research papers- structure and components

Scientific conduct, ethics, authorship issues, plagiarism, citation and acknowledgement. Importance of language and effective communication.

Presenting a paper in a scientific seminar- oral and poster presentation

Preparation of oral presentations

Preparation of scientific posters

Course outcomes

1. Provide insights on data collection, organizing research schedules, collection of databases and its interpretation, scientific writing and presentation of research findings on various platforms.

AC2PCC: Professional Competency Course: Intellectual Property Rights

1: Introduction to intellectual property right (IPR)- Concept and kinds. Economic importance. IPR in India and world. IPR and WTO (TRIPS, WIPO).

2 : Patents- Objectives, Rights, Patent Act 1970 and its amendments. Procedure of obtaining patents- Working of patents. Infringement.

3: Copyrights- Introduction. Works protected under copyright law. Transfer of Copyright. Infringement.

Trademarks- Objectives, Types, Rights. Protection of goodwill. Infringement.

4: Geographical Indications- Objectives, Justification, International Position, Multilateral Treaties, National Level, Indian position.

5: Protection of Traditional Knowledge- Objective, Concept, Holders, Issues concerning, Bio-Prospecting and Bio-Piracy, Alternative ways, Protectability, Traditional knowledge on the International Arena, at WTO, at National level, Traditional Knowledge Digital Library.

6: Protection of Plant Varieties- Plant Varieties Protection-Objectives, Justification, International Position, Plant varieties protection in India. Rights of farmers, Breeders and Researchers. National gene bank, Benefit sharing. Protection of Plant Varieties and Farmers' Rights Act, 2001.

7:BiotechnologyandIntellectualPropertyRights-PatentingBiotechInventions:Objective,Applications,Concept of Novelty, Concept of inventive step, Microorganisms, Moral Issues in Patenting Biotechnologicalinventions.

Course outcomes

1. Develop understanding of various legal provisions for safeguarding intellectual contributions from getting misused / exploited.

CARMEL COLLEGE MALA
FAMILY COUNSELLING CENTRE
COUNSELLING & GUIDANCE CERTIFICATE COURSE
BATCH 7

SL.NO.	COURSE CURRICULUM	
1	Introduction & General Discussion	
2	Group Dynamics & Team Building	
3	Theories of Personality	
4	Developmental Psychology	
5	Enneagram	
6	Abnormal Psychology	
7	Men - Women Psychology	
8	Counselling Skills & Techniques	
9	Client Centered Therapy	
10	CBT & REBT	
11	Family Counselling	
12	Alcoholic Counselling	
13	Transactional Analysis	
14	Communication Skills	
15	Stress Management	
16	Psycho Spiritual integration & Emotional maturity, self management skills	
17	Learning Disability	
18	Adoloscent Psychology	
19	Vocational Guidance & Career Counselling	
20	Theory of Multiple Intelligence	
21	Role of Teachers in moulding children	
22	Positive parenting Skills & Modern Parenting	

GENERAL ACTIVITIES		
1	Conselling Practical Session	
2	Mock Counselling	
3	Group Discussion	
4	Project Presentation	
5	Case Study	
6	Final Exam	
Statement of Marks		
1	Project Study & Report Submission	40
2	Project Presentation	40
3	Case Study	50
4	Final Exam	80
5	Internal Assesment (Attendance, Participation in Online classes, participation in offline Activities)	40
	Total Marks	250

CARMEL COLLEGE (AUTONOMOUS), MALA

COMMUNITY COLLEGE DIVISION

Certificate Course Syllabus

No. of Hours: 30

Course Name: Tally with GST

Course Code: CCDC01

Objectives:

1. To acquire computer operational skills with knowledge of accounting packages
2. To understand the technical features of Tally ERP 9
3. To prepare the students for taking up wage and self-employment

MODULE I: FUNDAMENTALS OF TALLY ERP 9

Introduction and definition- Limitations of manual book keeping- Features-Advantages and disadvantages- Tally ERP 9- Features- Components- Getting started with Tally ERP 9- Company creation- Gateway of tally

MODULE II: ACCOUNTS INFO

Accounts Info; ledger creation- ledger alteration- delete a ledger- group creation- group alteration- delete a group, grouping of accounts; capital- current assets- fixed assets- sundry debtors and creditors- direct and indirect expenses- direct and indirect incomes

MODULE III: INTRODUCTION TO VOUCHERS

Accounting vouchers; financial vouchers; contra- payment- receipt, Trading vouchers; purchase- sales- debit note- credit note, Non-accounting vouchers- journal- optional- postdated- memo voucher- reversing journal

MODULE IV: INVENTORY INFO

Inventory Info; stock group; create- alter- delete, stock item; create- alter- delete, stock category; create- alter- delete- unit of measure; single and compound unit, godown; create- alter- delete, inventory reports; stock summary.

MODULE V: TAX ACCOUNTING

Introduction to GST; rules, types, input tax credit, E-way bill, refunds- GST accounting using tally; GST masters, GST transactions, GST report

Reference:

- Asok K. Nadhani, "Tally ERP9 training guide", BPB Publications
- Roopa, "Tally for everyone", Add-to-cart publishing, 2006
- Ashok k Nadhani and Kishor k Nadhani, "Implementing Tally 9", BPB Publications
- Dr. Ramachandran and Adv. Sajeew Kumar, "Computerized Accounting theory & Practical", Chand publications, Thiruvandapuram.
- Dinesh Maidasani and Straight to the point, "Tally.ERP 9", Firewal Media, 2010.

SYLLABUS

CERTIFICATE COURSE

PHEC 03: PHYSICAL ACTIVITY HEALTH AND WELNESS

Nature of the programme: Certificate Course

Implementing Institution: Carmel College (Autonomous), Mala

Duration: 40 Hrs

MODULE 1:

Concepts of physical education and fitness, Definition, aim, objectives and importance of physical education, Physical fitness components – speed, strength, endurance, flexibility and coordinative abilities, Types of physical fitness- Health related physical fitness, Performance related physical fitness and Cosmetic fitness, Fitness balance

MODULE 2:

Exercise principles, First Aid and nutrition, Principles of exercise programme, Exercise and heart rate zone, BMR, Definition of First Aid, Aim of First Aid, Principles of First Aid, RICE, ABC of First Aid, First Aid for Fracture, Bleeding, Drawing and Snake Bite Nutritional balance, nutritional deficiency diseases

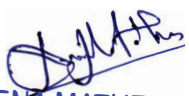
MODULE 3:

Yoga, stress management and postural deformities, Definition and meaning of Yoga, Asana, and Pranayama, Eight limbs of Ashtanga Yoga – Yama, Niyama, Asana, Pranayama, Prathyahara, Dharana, Dhyanam, Samadhi, Asanas - Ten Asanas and its effects: Asanas, Standing (Balancing), Vrikshasana, (Forward_bending) Padahasthasana, (Backward_bending) Ardha Chakrasana, (Twisting) Trikonasana, Kneeling Ushtrasana, Sitting, Vajrasana, Padmasana, Prone line, Bhujangasana, Salabhasa, Supine (Relaxative), Savasana, Pranayamas - Three Pranayamas and its effects- Surya Bedhana (Heating), 2) Chandra bedhana (Cooling) 3) Nadisudhi (Balancing)

Postural deformities and corrective measures, Meaning of good posture, causes of poor posture, importance of good posture, Postural deformities- Kyphosis, Lordosis, Scoliosis, Bow leg, Knock knee, Flat foot, Stress Management- Definition of stress, causes of stress and stress management

MODULE 4 :

Vital signs, Lifestyle/Hypokinetic diseases and its management, Vital signs- Pulse rate, Respiratory rate, Blood pressure, Body temperature, Diseases- Diabetes, Hypertension, Obesity, Osteoporosis, CHD, Back pain. Fitness assessment- Body mass index, Waist to Hip Ratio,


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CARMEL COLLEGE, MALA

SYLLABUS
CERTIFICATE COURSE

PHEC 02: BASICS OF FRENCH COURSE

Nature of the programme: Certificate Course

Implementing Institution: Carmel College (Autonomous), Mala Duration: 40 Hrs

MODULE 1(4 Hours):

Introduce yourself/countries/occupations.

MODULE 2 (10 Hours)

The alphabet & the numbers.

MODULE 3 (6 Hours)

Languages and countries.

MODULE 4 (10 Hours)

People and hobbies.

The work, the workplace.

Free time.

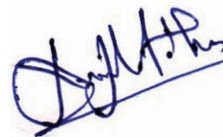
MODULE 5 (8 Hours)

At the hotel.

The city map

MODULE 6 (6 Hours)

Practical



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DEPT OF PHYSICAL EDUCATION
CARMEL COLLEGE, MALA

SYLLABUS
CERTIFICATE COURSE

PHEC 01: BASICS OF GERMAN COURSE

Nature of the Programme: Certificate Course

Implementing Institution: Carmel College (Autonomous), Mala

Duration: 40 Hrs

MODULE 1 (4 Hours)

Introduce yourself/countries/occupations.

MODULE 2 (10 Hours)

The alphabet & the numbers.

MODULE 3 (6 Hours)

Languages and countries.

MODULE 4 (8 Hours)

People and hobbies.

The work, the workplace.

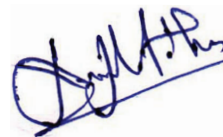
Free time.

MODULE 5 (6 Hours)

At the hotel.

The city map

MODULE 6 (6 Hours)



Ms. LEENA MATHEW, HOD
DEPT OF PHYSICAL EDUCATION
CARMEL COLLEGE, MALA

CARMEL COLLEGE (AUTONOMOUS), MALA
CAREER GUIDANCE AND PLACEMENT CELL
in collaboration with
MAHINDRA PRIDE CLASSROOM AND NAANDI FOUNDATION

Mahindra Pride Classroom's
Employability Skill Programme:
Soft Skills for Employability Training Certificate Course
for the Final Year UG, PG and Diploma Students
SYLLABUS

Code	Contact Hours	Semester/Year
CGPCMPCR001	36	Final Semester

Aims

- To help the students become ready to face interviews
- To enable them to secure good jobs

Objectives

- To equip students with essential soft skills and employability skills necessary for successful transition into the professional world, including communication, teamwork, leadership, problem-solving, and professional ethics
- To nurture entrepreneurial mindset and skills among participants, enabling them to identify opportunities, innovate, and take calculated risks, thus fostering their ability to pursue entrepreneurial ventures and contribute to economic growth and innovation
- To foster trust, accountability, integrity and social responsibility through professional ethics

Course Outline

Module I: ESSENTIAL SOFT SKILLS AND ICT SKILLS

English Language for Career- Communication Skills-Self-Introduction- ICT Skills-Presentation Skills-Critical Thinking

Module II: EMPLOYABILITY AND ENTREPRENEURIAL SKILLS

Goal Setting-Time Management-Money Management-Job Sectors to Know- Job Readiness- Resume-Social Media-LinkedIn Profile-Leadership Skills and Team Building-Problem-Solving Skills-Interview Skills-Group Discussion

Module III: PROFESSIONAL ETHICS

Significance of cultivating professional ethics for integrity accountability, and social responsibility in their professional conduct

Assessment for the Certificate

Attendance-90 %

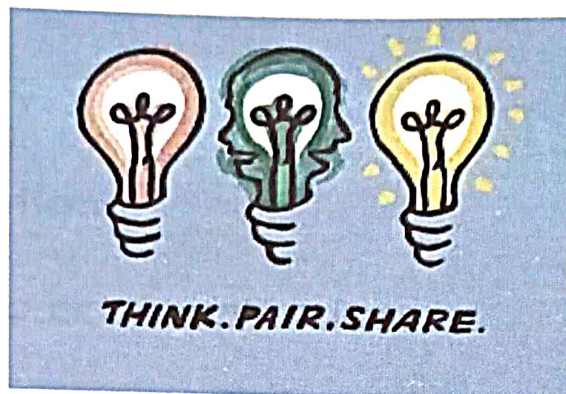
Self-Introduction and Resume Preparation

Classroom Performance (Group Discussions/Debates/JAM and the like)

Presentation

Mock Interview

ENGLISH LANGUAGE FOR CAREER



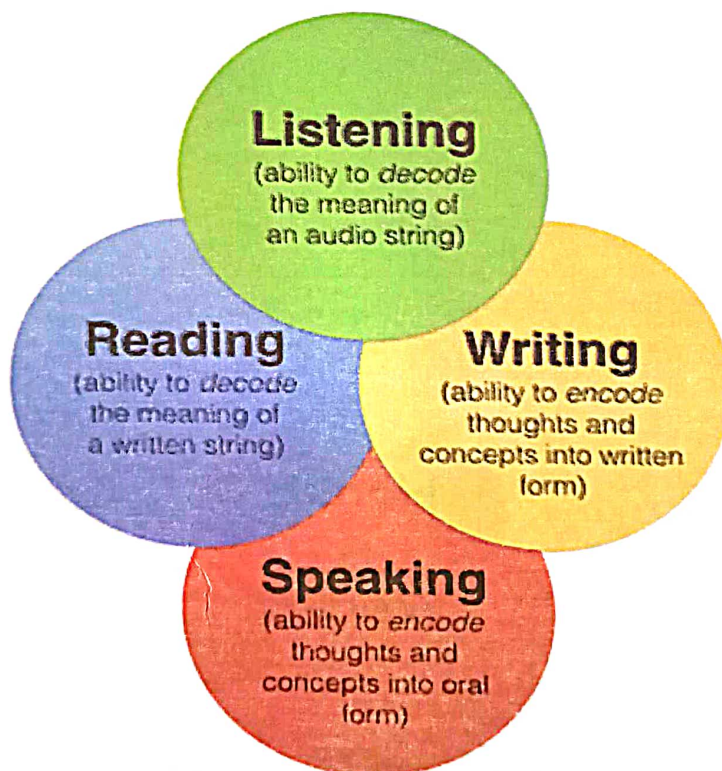
1. What is communication?
2. Why do we communicate?
3. What comes to your mind when you hear English?
4. Is it important to communicate in English, so why?
5. If not why?
6. Are you comfortable expressing yourself in English?
7. Do you realise that knowledge of more than one language is a sign of intelligence?
8. Which are the situations that demands you to communicate in English?

FOCUS AREAS TO IMPROVE ENGLISH LANGUAGE

1. Vocabulary
2. Grammar
3. Pronunciation
4. Fluency
5. Interactive communication



FOCUSED DISCUSSION POINTS

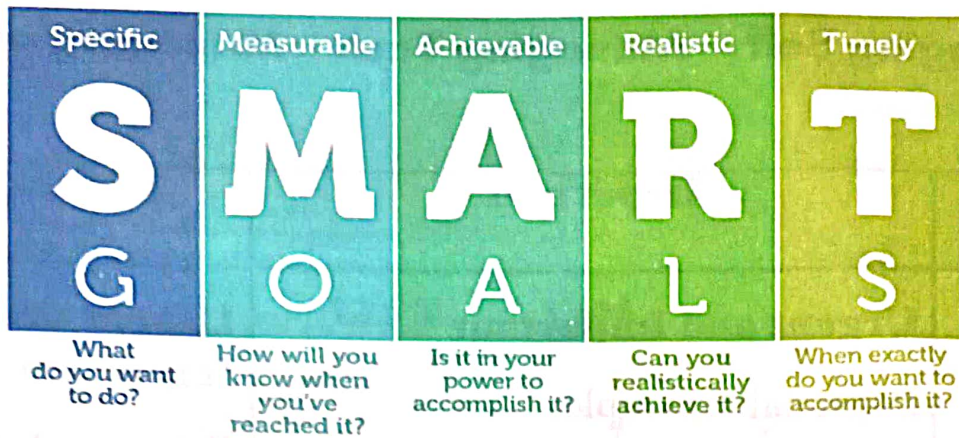


GOOD HEALTH FOR GOOD LIFE

Notes:



GOAL SETTING



Draw a stick man with all 7 aspects namely **Intellect, Spirituality, Family & Friends, Education/Career, Health, Finance, Social responsibility**. Rate each aspect and adjust the length of each aspect accordingly.

A large grid is provided for drawing a stick man. The grid is divided into seven vertical columns, each representing one of the seven aspects: Intellect, Spirituality, Family & Friends, Education/Career, Health, Finance, and Social responsibility. The length of each aspect is to be adjusted according to the rating given to it.

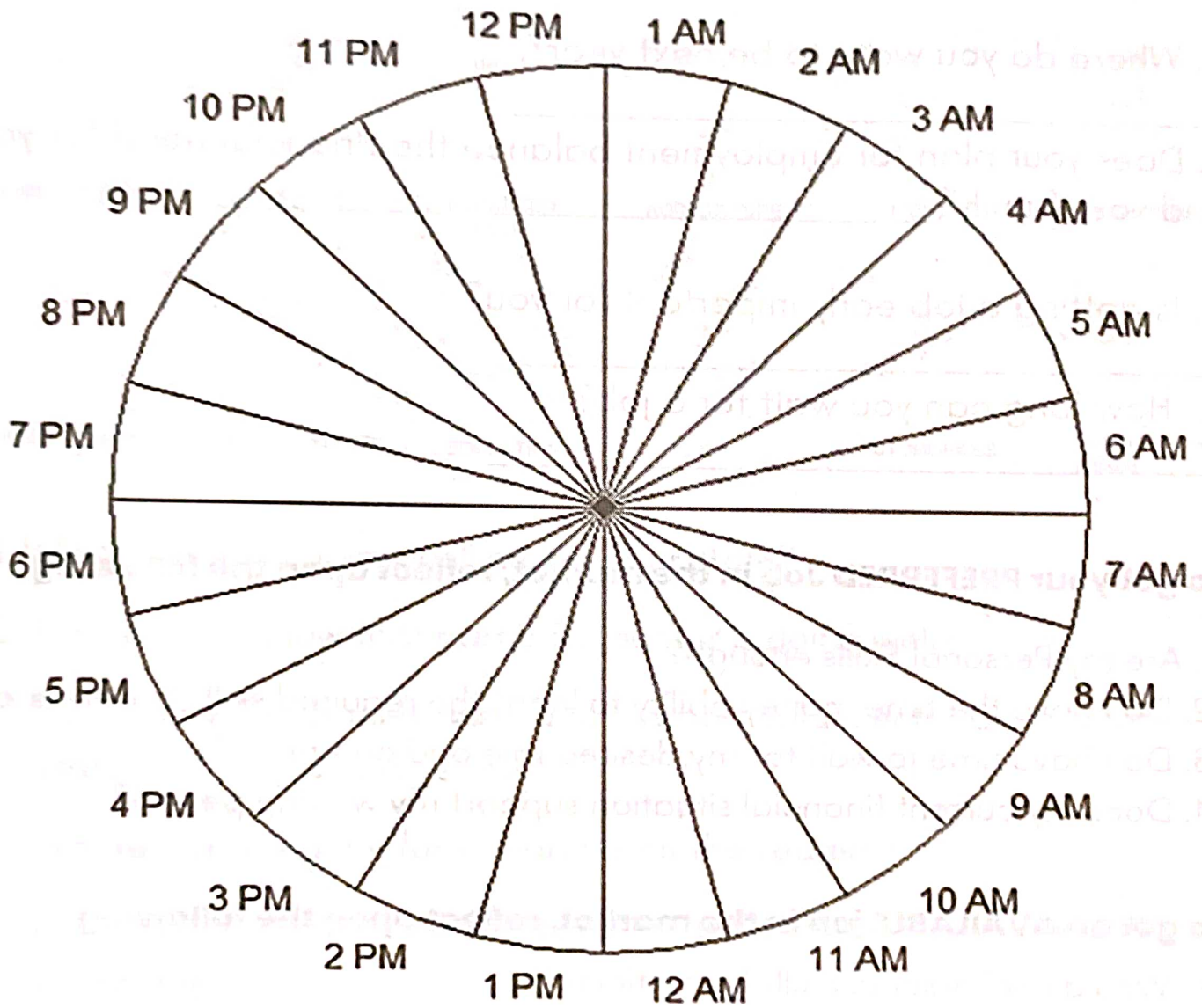
TIME MANAGEMENT



Managing Self Managing Task Managing others

Priority Matrix	Important	Not important
<p>Urgent</p>	<p>Urgent and Important Personal Example: _____ Work Example: _____</p>	<p>Urgent and Not Important Personal Example: _____ Work Example: _____</p>
<p>Not urgent</p>	<p>Not Urgent but Important Personal Example: _____ Work Example: _____</p>	<p>Not Urgent and Not Important Personal Example: _____ Work Example: _____</p>

TIME WHEEL



JOBS

Self Analysis:

1. Where are you today? (Education / Employment / Training) _____

2. Where do you want to be next year?

3. Does your plan for employment balance the financial need for you and your family? _____

4. Is getting a job early important for you?

5. How long can you wait for a job?

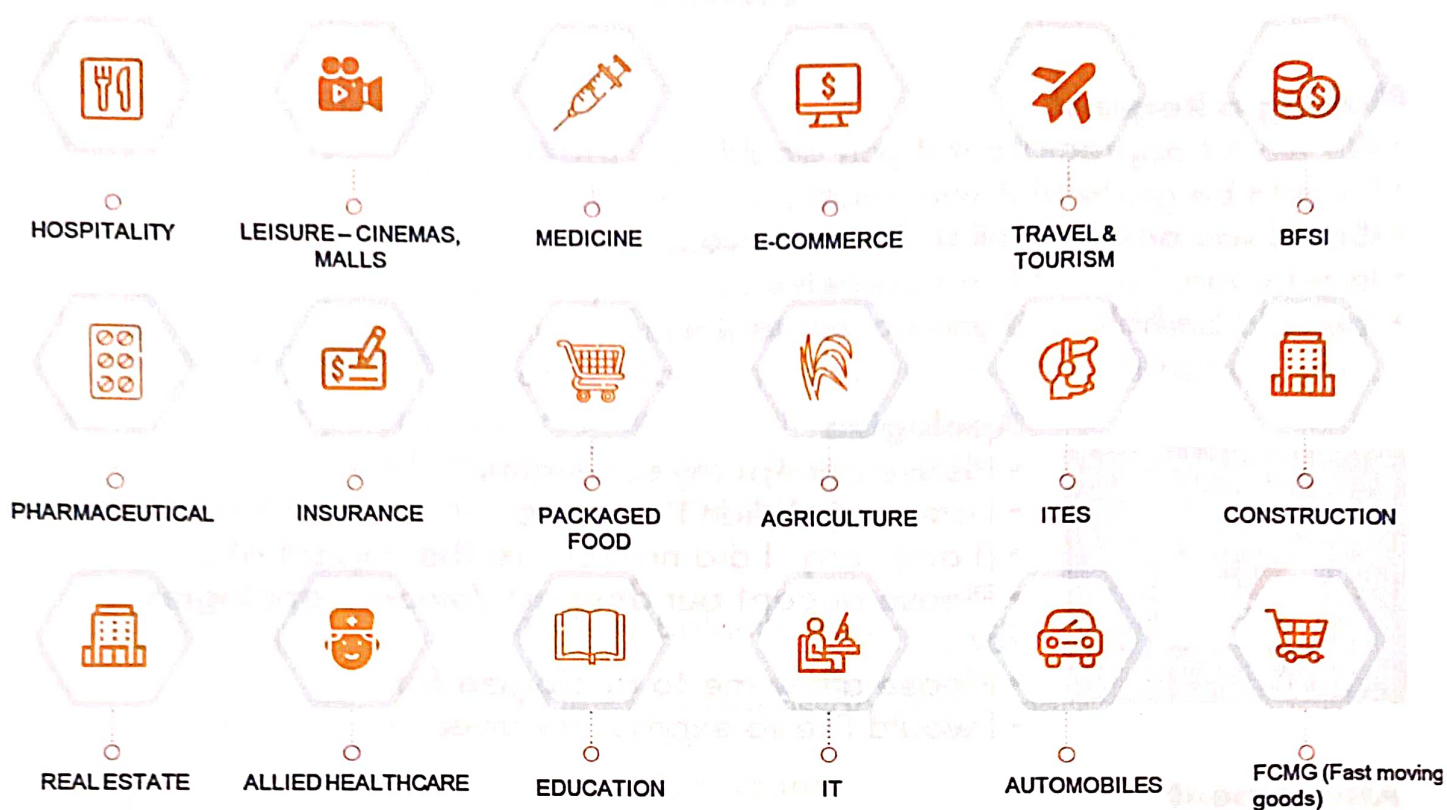
To get your PREFERRED Job in the market, reflect upon the following

1. Are my Personal Skills enough?
2. Do I have the time money ability to learn the required skills in demand?
3. Do I have time to wait for my desired role and company?
4. Does my current financial situation support my waiting period?

To get an AVAILABLE job in the market, reflect upon the following

- Would my Personal Skills be sufficient?
- Are there jobs available that suit my skills?
- Will there be a new learning experience?
- Is it ok to take a non core job?
- Would taking up an available job be considered as a career?

SECTORS TO KNOW

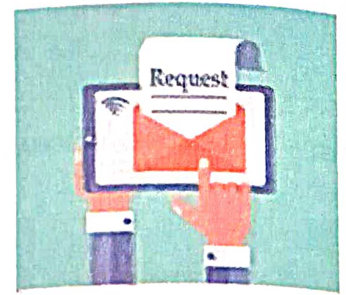


1. Which sector is doing well now in your state?
2. How do you know that particular sector is doing well?
3. How many companies related to the particular sector are in your state and neighboring state?
4. Where can we get information about the sectors?
5. Choose one company and google to get the latest news about the company
6. Where can you get information or learn more about the sectors?
7. Choose one company and search online to get the latest news about the company

EMAIL

Making a Request

- We would appreciate it if you would ...
- I would be grateful if you could...
- Could you possibly tell us/let us have...
- In addition, I would like to receive ...
- It would be helpful if you could send us ...



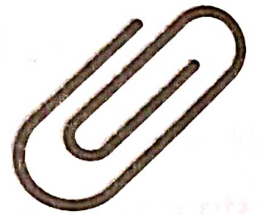
Apologize

- Please accept my apologies.
- I am sorry. I didn't mean to..
- (I am) sorry. I did not realize the impact of...
- Please accept our deepest /sincere apologies for...
- Please allow me to apologize for...
- I would like to express my deep regrets for



Attachment

- Take a look at the attached ...
- I've attached ...
- I am sharing (file/ document/ whatever you are actually sharing) with you.
- You will find the (attachment) below.
- Please do not hesitate to contact me should you have any inquiries about the attachment.
- The requested document is attached to this email



When you recommend or give information

- I hope my recommendation will be taken into consideration
- I trust you will consider my recommendations / suggestions.
- I hope this will be of help.
- I hope I have been of assistance.
- I wish you well in whatever course of action you decide upon.
- Implementing these suggestions would.

SOCIAL MEDIA & ME

Self-Analysis:

- Why do you use social media?
- How often do you use social media?
- What kind of posts do you circulate often? (Memes, Jokes, Fan fights, IPL, Government issues, etc..)
- What is your opinion about posting private life on social media? Ex: Posting pictures of food on a plate, getting ready for a function, etc...
- What kind of people do you like to follow?
- Do I feel addicted to social media? If so How?
- Else, how do you manage social media?



Ways to balance Real-Life and Social Media

1. Delete unnecessary social media apps from your smartphone.
2. Don't Compare
3. Limit your usage
4. Limit your time
5. Find new hobbies
6. Remember the value of real-time interactions
7. Consider your goals, priorities, and reasons

Volatility

Uncertainty

Complexity

Ambiguity



Vision

Understanding

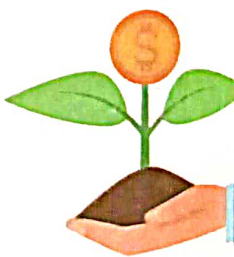
Clarity

Agility

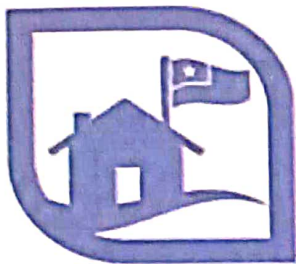
MONEY MANAGEMENT

The 50-20-30 rule is a money management technique that divides income into three categories: 50% for the essentials, 20% for savings, and 30% for everything else.

SAMPLE BUDGET:



PROFESSIONAL ETHICS



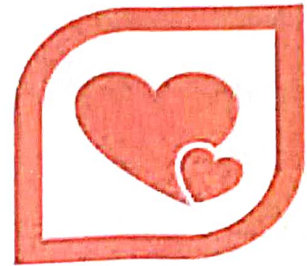
CITIZENSHIP



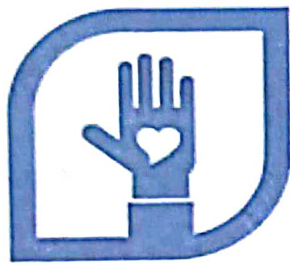
RESPONSIBILITY



FAIRNESS



CARING



TRUSTWORTHINESS

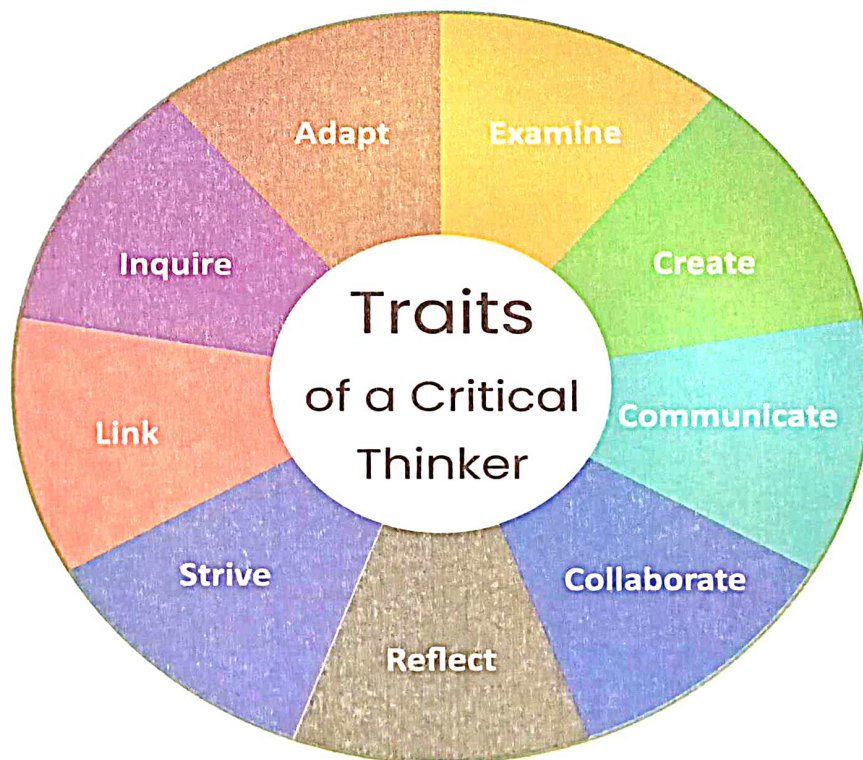


RESPECT

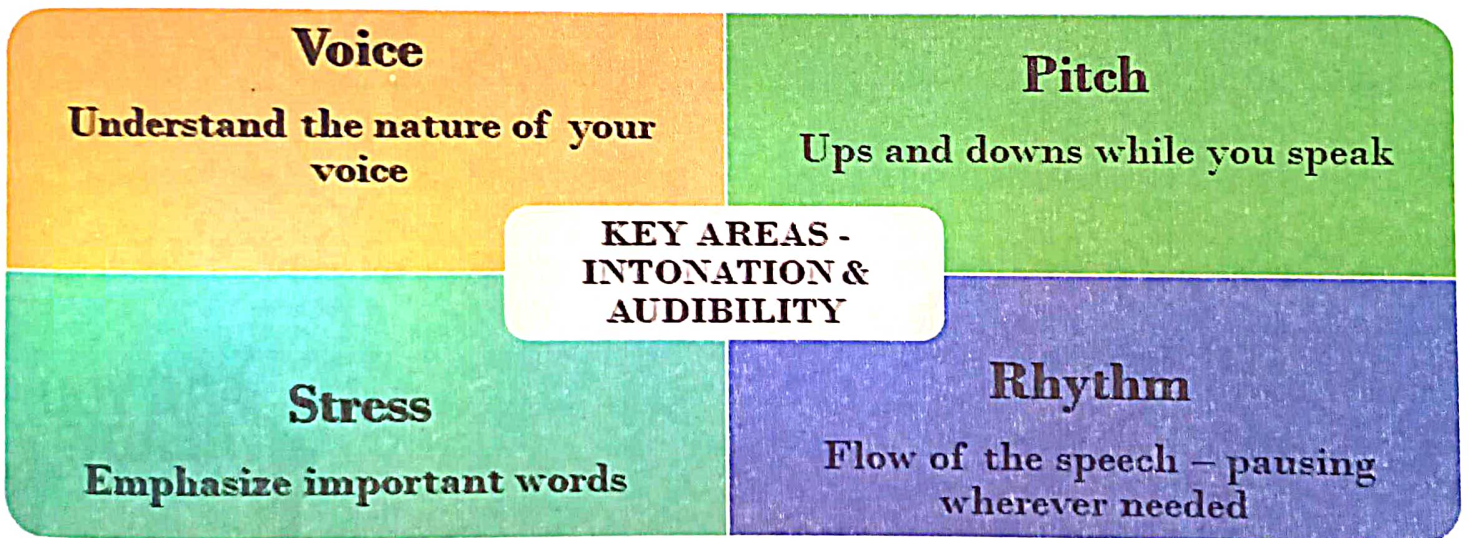
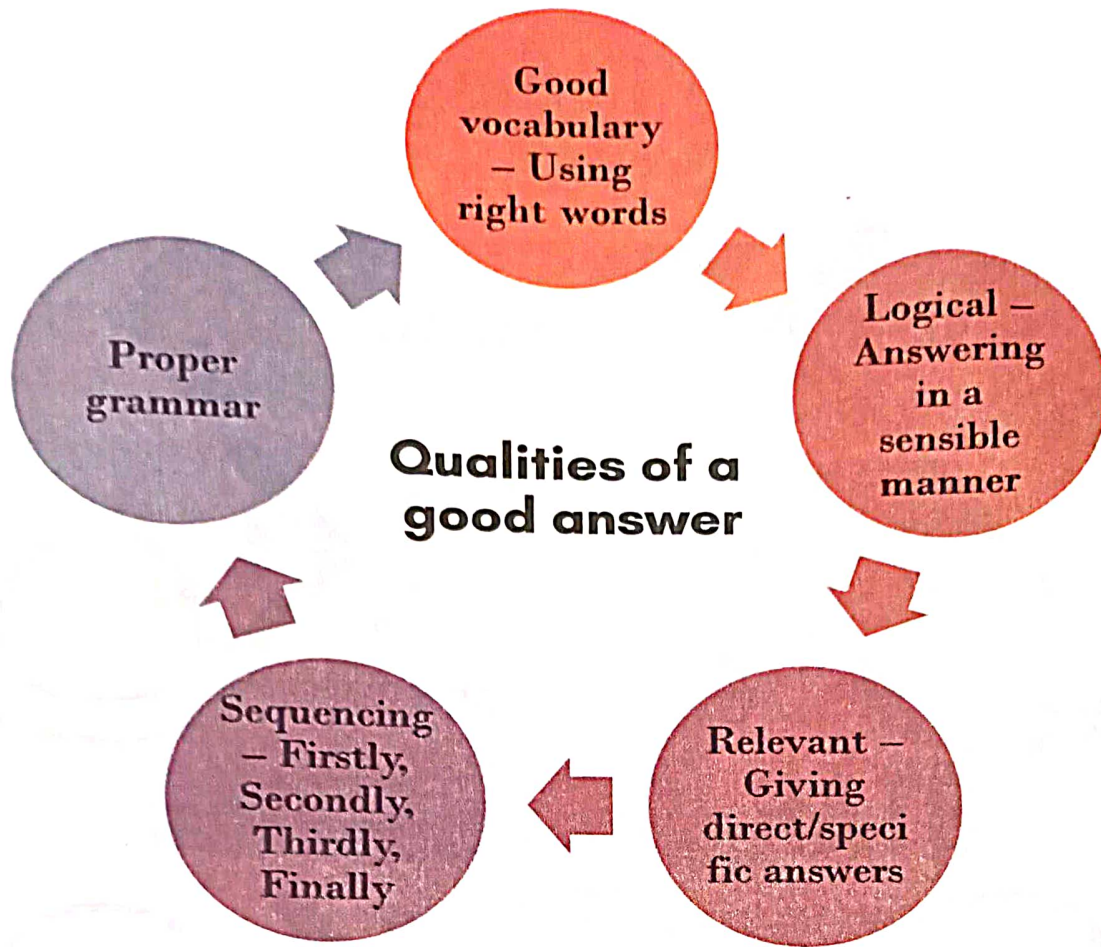


CRITICAL THINKING

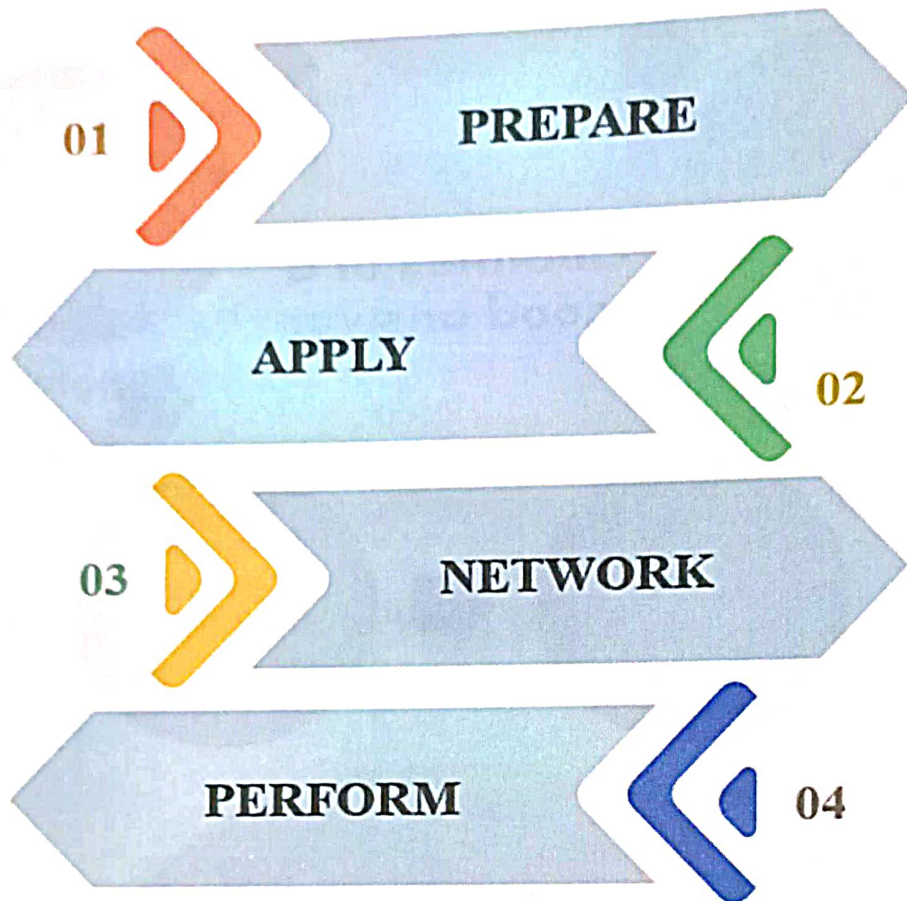
1. Critical thinking is the ability to think logically.
2. Critical thinking helps us to analyse any situation.
3. Critical thinking helps us to clarify wrong assumptions.
4. Critical thinking helps us have a strategy in place.
5. A good strategy will lead to an effective plan.
6. An effective plan will lead to desired results.
7. Critical thinking helps us to systematically plan and implement ideas.
8. Critical thinking helps us to identify and fill the gaps in our thinking process



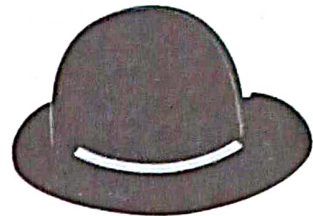
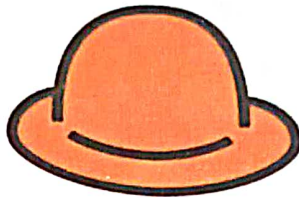
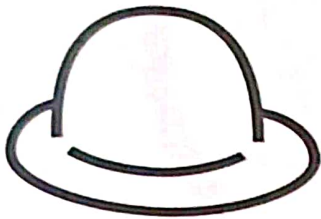
MINI PRESENTATIONS



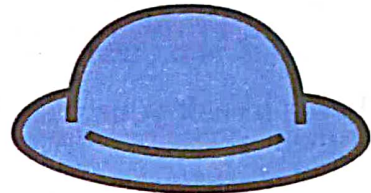
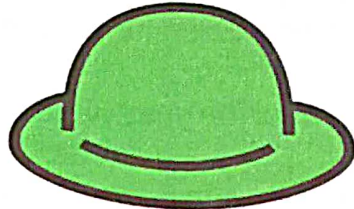
JOB READINESS



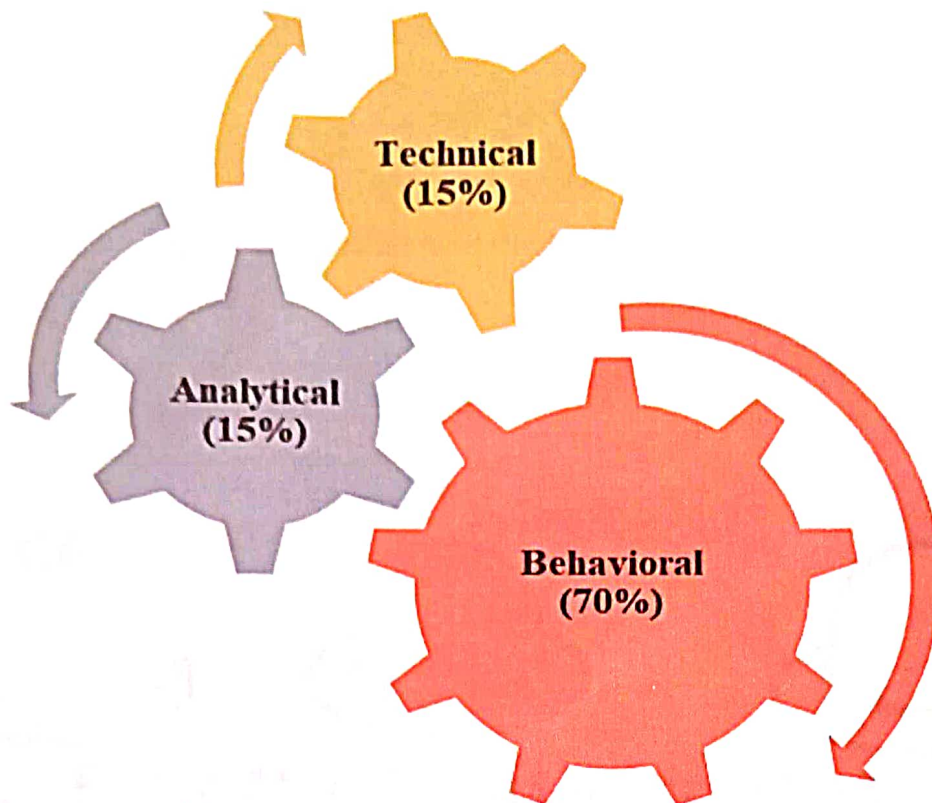
PROBLEM-SOLVING SKILLS



SIX THINKING HATS



KIND OF INTERVIEW QUESTIONS



1. Tell me about yourself.

To **evaluate** your communication skills and see how you present yourself

2. If I was to ask your friends to describe you, what would they say?

To **understand** whether you are a people person who can speak openly and honestly about themselves

3. Why do you want to work for our organization?

To **know** whether you researched the company or not.

4. Tell me about a project you worked.

To **demonstrate** your competence.

5. Where do you see yourself in five years?

To **know** about your professional goals and ambitions

Group Discussion Tips

DO	DON'TS
Prepare for the discussion and jot down relevant points	Talk about irrelevant things
Think before you speak	Pass personal remarks
Speak audibly and clearly	Mutter or speak softly / hesitantly
Use a moderate tone and polite language	Speak aggressively or too loudly
Use appropriate words to express yourself	Use impolite or abusive language
Pay attention to your posture and body language	Stand up or gesticulate loudly while trying to make a point or lose your temper
Listen to what everyone is saying	Interrupt when others are speaking
Respect the contribution of other members	Patronize or insult team members
Be open-minded and non-judgmental	Pass any comments on any religion or politics/politicians
Learn to disagree politely	Argue unnecessarily
Be a team member and help others	Dominate the discussion
Stick to the topic	Digress or go on a tangent
Take you fellow members' name while referring to a statement made by them	Point fingers or refer to team members as 'he' or 'she'
Address the whole group by looking around while talking	Speak to just a few individuals

TIPS WHILE ANSWERING INTERVIEW QUESTIONS

Answer in sentences	No one Word Answers
Speak short sentences	No incomplete sentences
Show willingness to learn	Don't Lie
Display your uniqueness	Don't copy someone's answer
It's to take the help of a second language	Don't stop abruptly
Ensure to speak about your Skills	Don't underestimate yourself
Speak your Strengths / Positives	Don't worry about weaknesses
Seek Clarity	Don't assume the question
Be polite and courteous	Don't be controversial
Maintain Eye Contact	Don't look around
SMILE	Don't be Grim



Helpful Vocabulary – Self-Introduction

Genuine

Loyal

Unique

Ambitious

Self-Starter

Independent

Focused

Reliable

Focused

Sincere

Team Player

Creative

Excited

People- Oriented

Self -managed

Hobby

Capable

Open -Minded

Supportive

Action - Oriented

Organised

Responsible

Communicative

Confident

Positive

Critical Thinker

Trustworthy

Accuracy

Interests

Achievements

Eagerness to Learn

Problem Solver **magic words** Strong-willed



Exit Card: DAY1

Three meaningful words that remain with me from today's session:

Two things/ideas that I am curious to know more about/read up on:

One new concept or learning from today that I would like to incorporate into my life:

Exit Card: DAY2

Three meaningful words that remain with me from today's session:

Two things/ideas that I am curious to know more about/read up on:

One new concept or learning from today that I would like to incorporate into my life:



Exit Card: DAY3



Three meaningful words that remain with me from today's session:

Two things/ideas that I am curious to know more about/read up on:

One new concept or learning from today that I would like to incorporate into my life:

Exit Card: DAY4

Three meaningful words that remain with me from today's session:

Two things/ideas that I am curious to know more about/read up on:

One new concept or learning from today that I would like to incorporate into my life:

Exit Card: DAY5



Three meaningful words that remain with me from today's session:

Two things/ideas that I am curious to know more about/read up on:

One new concept or learning from today that I would like to incorporate into my life:

Exit Card: DAY6

Three meaningful words that remain with me from today's session:

Two things/ideas that I am curious to know more about/read up on:

One new concept or learning from today that I would like to incorporate into my life:



CARMEL COLLEGE (AUTONOMOUS)

Mala, Thrissur, Kerala-680732

(Re-Accredited by NAAC with 'A Grade' (Fourth Cycle) and Affiliated to the University of Calicut)

CAREER GUIDANCE AND PLACEMENT CELL

Mahindra Pride Classroom's

Employability Skill Programme: Soft Skills for Employability Training Certificate Course for the Final Year UG, PG and Diploma Students (05-10 December 2022)

in collaboration with Mahindra Pride Classroom and Naandi Foundation

Report

From 5th to 10th December 2022, the Career Guidance and Placement Cell, in collaboration with Mahindra Pride Classroom and Naandi Foundation, conducted an “Employability Skill Programme: Soft Skills for Employability Training Certificate Course” for the Final Year Undergraduate, Postgraduate and Diploma students. The course aimed to equip participants with essential skills and knowledge necessary for their successful transition into the professional world. Led by 9 skilled trainers — Ms. Chinchu K. Bhavani, Ms. Haritha Nair, Ms. Nimitha Shajahan, Ms. Feba Babu, Ms. Lydia Thomas, Mr. Ramshad K., Mr. Tony Thomas, Ms. Neetha K.C. and Mr. Vimal Chandra Babu — specializing in various domains, the course provided a comprehensive learning experience focusing on employability and entrepreneurship.



OUTCOMES

- **Comprehensive Curriculum:** The course curriculum covered a wide range of topics essential for professional success, including English language proficiency, goal setting, time management, ICT skills, professional ethics, job readiness, interview preparation, and entrepreneurship skills. This comprehensive approach ensured that participants received holistic preparation for their future careers.
- **Emphasis on Soft Skills:** The curriculum emphasized the development of soft skills crucial for both employability and entrepreneurship. Skills such as communication, teamwork, leadership, problem-solving, creativity, innovation, and risk-taking were given special attention. Participants engaged in practical sessions, including making presentations, mock interviews, group discussions, and business plan development, to enhance their confidence and capabilities.

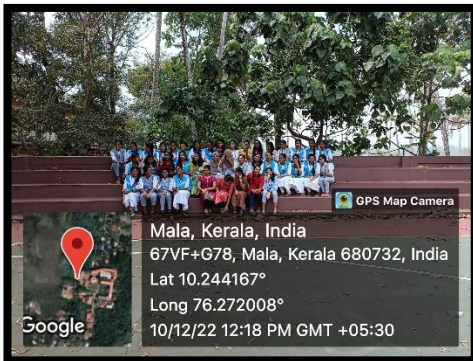
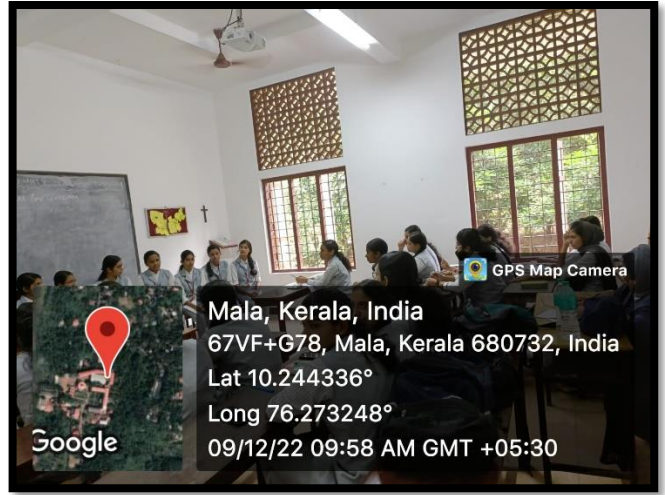
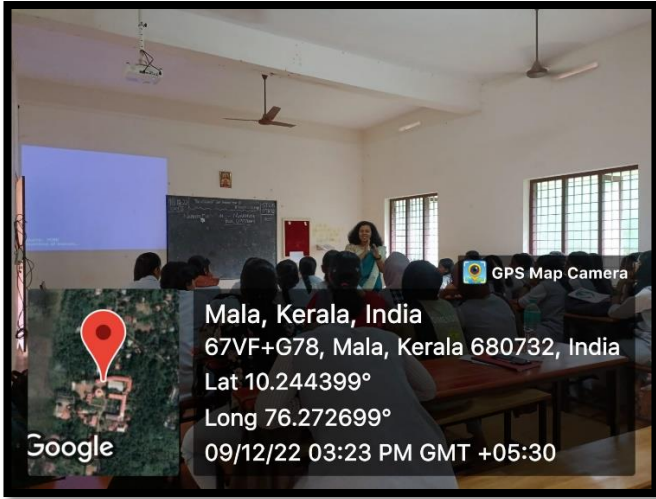
- **Fostering both Employability and Entrepreneurship Skills:** The course focused on fostering both employability and entrepreneurship skills among participants. Through practical sessions, participants developed competencies such as communication, teamwork, leadership, problem-solving, creativity, innovation, and risk-taking, essential for success in both employment and entrepreneurial endeavors.
- **Emphasis on Professional Ethics:** Participants were exposed to the importance of professional ethics in the workplace and entrepreneurial ventures. Discussions and case studies enabled participants to understand ethical dilemmas and make informed decisions aligned with ethical principles, ensuring integrity and trustworthiness in their professional conduct.
- **Enhancement of ICT Skills and Proficiency in Creating PowerPoint Presentations:** The course included sessions dedicated to enhancing participants' ICT skills and proficiency in creating PowerPoint presentations. Participants learned how to effectively use technology tools for research, data analysis, presentation design, and delivery, enhancing their digital literacy and ability to communicate ideas effectively in a professional setting.
- **Interactive and Engaging Learning:** The course delivery was interactive and engaging, incorporating discussions, practical exercises, role-plays, case studies, and hands-on activities. These methods promoted active learning and provided participants with opportunities to apply theoretical knowledge to real-world scenarios, enhancing their understanding and retention of concepts. or pursued entrepreneurial ventures.
- **Inclusive Learning:** The course fostered inclusive learning environments where participants from diverse backgrounds felt valued and respected. Trainers ensured that all participants had equal opportunities to participate, contribute, and learn, promoting diversity, equity, and inclusion in the learning process.
- **Experiential and Participative Learning:** Participants engaged in experiential and participative learning activities, like mock interviews, group discussions and business plan development. The hands-on experiences allowed participants to apply theoretical knowledge in practical scenarios, enhancing their problem-solving abilities, decision-making skills, and overall learning outcomes.

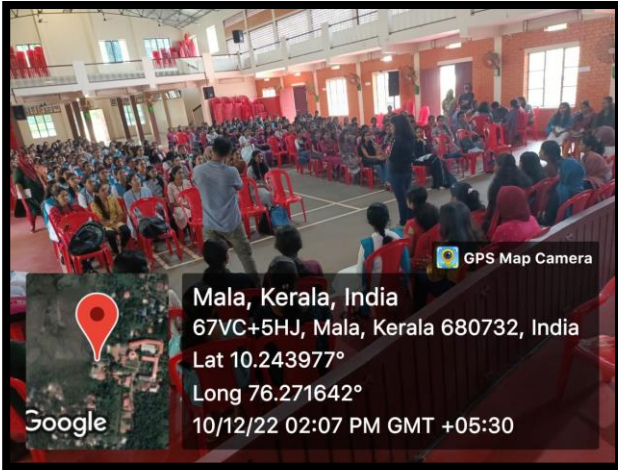
In conclusion, the “Employability Skill Programme: Soft Skills for Employability Training Certificate Course” provided the final year Undergraduate, Postgraduate and Diploma students with a comprehensive and practical preparation for their future careers. By focusing on fostering employability and entrepreneurship skills, emphasizing professional ethics, enhancing ICT skills and PPT presentations, promoting inclusive learning, and facilitating experiential and participative learning, the course equipped participants with the tools and confidence needed to succeed in the professional world. The interactive and engaging learning environment, combined with continuous feedback and assessment, ensured that participants received a high-quality learning experience that would serve them well in their future endeavours.

PROGRAMME CO-ORDINATOR



Dr. PRETTY JOHN P.
Co-ordinator
Career Guidance and Placement Cell
Carmel College (Autonomous), Mala





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SYLLABUS

CERTIFICATE COURSE

SYCC 01: CLINICAL PSYCHOLOGY AND MENTAL HEALTH

Nature of the programme: Certificate Course

Implementing Institution: Carmel College Mala

Objective of the Programme: To aware psychological disorders

: To equip mentally healthy individual

Duration :30 Hrs

Participants/PG Students

MODULE1: ABNORMALITY AND MENTAL DISORDERS

Abnormal Psychology and Clinical Psychology, Indicators of Abnormality

Causal Factors for Abnormal Behaviour- Biological, Psychological and Sociocultural factors.

Thaniavarthanam,, Ulladakam, Kumbalangi Nights, Yaskhi, Thalavattam

MODULE 2: ORGANIC MENTAL DISORDERS AND SUBSTANCE USE DISORDERS

Thanmatra (2005), *Sapthamasree Thaskara* (2012), *Innale* (1989)

Spirit (2011), *Nee-Na* (2015)

MODUE 3: PSYCHOTIC DISORDERS

Njangalude Veettile Athithikal (2014), *Sadgamaya* (2010), *Elippathayam* (1989), *Veruthe Oru Bharya* (2008) , *Arikil Oral* (2013) and *Vadakkunokkiyanthram*(1989).

MODUE 4: DISSOCIATIVE IDENTITY DISORDERS AND MENTAL HEALTH

Manichithra thazhu, *Alice: A True Story* (2014), and *Flash* (2007)

Ente Suryaputhrikku (1991), *Sargam* (1992), *Mukundetta*, *Sumitra Vilikkunu* (1988), *The Artist* (2013), *Mili* (2015) *How old Are You, chuvadu*.

Methodology:Class Room Session ,Assignment,visit

Evaluation: Grades will be awarded to the participants based on the evaluation of assignments ,and examinations

Attendance:Participants having 80 percent attendance in the courses will be evaluated and graded

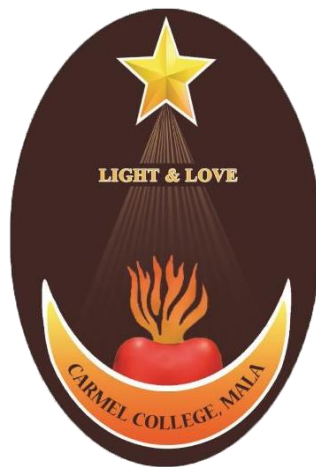
Certificate :Certificates will be awarded to every successful candidates .





CARMEL COLLEGE (AUTONOMOUS) MALA

SYLLABUS OF MA SOCIOLOGY PROGRAMME



CHOICE BASED CREDIT SEMESTER SYSTEM GRADUATE

SCHEME & SYLLABUS

DEPARTMENT OF SOCIOLOGY

2022-23

CARMEL COLLEGE (AUTONOMOUS)

Structure of the Courses in M.A. Sociology Programme

Core Courses	: 60 Credits
Elective Courses	: 12 Credits
General External Viva-Voce (Comprehensive)	: 4 Credits
Dissertation	: 4 Credits
Total	: 80 Credits

Semester I

Sl. No	Course Code	Type of Course	No. Of Credits
1	SOC1 C01	Core Course	5
2	SOC1 C02	Core Course	5
3	SOC1 C03	Core Course	5
4	SOC1 C04	Core Course	5
	SOC1 A01	Audit Course 1	4*
		Total	20

* The students will have to undergo two audit courses with 4 credits each in the First and Second Semesters. The credits will not be counted for evaluating the overall SGPA & CGPA. Audit courses are not part of the normal workload.

Semester II

Sl. No	Course Code	Type of Course	No. Of Credits
5	SOC2 C05	Core Course	5
6	SOC2 C06	Core Course	5
7	SOC2 C07	Core Course	5
8	SOC2 C08	Core Course	5
	SOC2 A02	Audit Course 2	4*
		Total	20

* The students will have to undergo two audit courses with 4 credits each in the First and Second Semesters. The credits will not be counted for evaluating the overall SGPA & CGPA. Audit courses are not part of the normal workload.

Semester III

Sl. No	Course Code	Type of Course	No. Of Credits
9	SOC3 C09	Core Course	5
10	SOC3 C10	Core Course	5
11		Elective Course	4
12		Elective Course	4
		Total	18

Semester IV

Sl. No	Course Code	Type of Course	No. Of Credits
13	SOC4 C11	Core Course	5
14	SOC4 C12	Core Course	5
15		Elective Course	4
	SOC4 P01	Dissertation	4
	SOC4 V01	Comprehensive External Viva-voce	4
		Total	22

Total Credits: 20+20+18+22= 80 Credits

Eligibility Criteria

Under Mark System :- Any UG Degree of this University or equivalent degree with at least 45% marks for Part III (excluding subsidiaries). OBC/OEC candidates are eligible to relaxation up to 5%. SC/ST candidates need only to get a pass.

Under Grade System :- Any UG Degree of this University or equivalent degree with each Core and Complementary course grade point at least equivalent to 50%. OBC/OEC candidates are eligible to relaxation up to 5%. SC/ST candidates need only to get a pass.

LIST OF PAPERS

FIRST SEMESTER

Core Papers

SOC1 C01 FOUNDATIONS OF SOCIOLOGICAL THEORY

SOC1 C02 RESEARCH METHODOLOGY OF SOCIOLOGY

SOC1 C03 SOCIOLOGY OF INDIAN SOCIETY

SOC1 C04 RURAL AND TRIBAL SOCIETIES IN INDIA

SOC1 A01 Audit course 1 ABILITY ENHANCEMENT PROGRAMME

SECOND SEMESTER

Core Papers

SOC2 C 05 SCHOOLS OF SOCIOLOGICAL THEORY I

SOC2 C 06 RESEARCH METHODOLOGY II

SOC2 C07 URBAN SOCIOLOGY

SOC2 C08 GENDER STUDIES

SOC2A02 Audit Course 2 SKILL DEVELOPMENT PROGRAMME

THIRD SEMESTER

Core Papers

SOC3 C09 SCHOOLS OF SOCIOLOGICAL THEORY II

SOC3 C10 SOCIOLOGY OF DEVELOPMENT: THEMES AND PERSPECTIVES

Elective Papers (Any Two out of the following electives should be selected)

SOC3 E01 ENVIRONMENTAL SOCIOLOGY

SOC3 E02 SOCIOLOGY OF MIGRATION AND DIASPORA

SOC3 E03 SOCIOLOGY OF HEALTH

SOC3 E04 SCIENCE , TECHNOLOGY AND

SOCIETYSOC3 E05 PROJECT PLANNING AND

PREPARATION

FOURTH SEMESTER

Core Papers

SOC4 C11 CURRENT DEBATES IN SOCIAL THEORY

SOC4 C12 ECONOMIC SOCIOLOGY

Elective Papers (Any one out of the following electives should be selected)

SOC4 E06 GUIDANCE AND COUNSELLING

SOC4 E07 KERALA SOCIETY: STRUCTURE AND CHANGE

SOC4 E08 SOCIOLOGY OF MEDIA AND COMMUNICATION

SOC4P01 DISSERTATION

SOC4V01 VIVA - VOCE

SEMESTER I

CORE COURSE

NO. OF CREDITS: 5

SOC1 C01 FOUNDATIONS OF SOCIOLOGICAL THEORY

Course outcomes

- Traces out the history of sociology
- Summarises the ideas of the pioneering sociological thinkers
- Appraises the relevance of the classical theory in contemporary societies
- Compares and evaluates the contributions of classical thinkers

MODULE 1 THE ORIGINS OF SOCIOLOGICAL THEORY

- 1.1 Intellectual and Social forces in the development of Sociological Theory: Renaissance, Enlightenment, French Revolution, Industrial Revolution
- 1.2 Early Social Philosophers: Montesquieu, Condorcet, Saint Simone
- 1.3 Auguste Comte: Positivism, Herbert Spencer: Organic Analogy
- 1.4 Emile Durkheim: Social Fact, Division of Labour, Suicide, Elementary forms of Religious life

MODULE 2 KARL MARX

- 2.1 Karl Marx: Dialectical and Historical Materialism
- 2.2 Class and Class conflict
- 2.3 Theory of Alienation, Commodity Fetishism
- 2.4 Theory of Social Change

MODULE 3 MAX WEBER

- 3.1 Verstehen, Social Action, Ideal Type
- 3.2 Theory of Power and Authority, Bureaucracy

3.3 Rationality and Modernity- Rationalisation

3.4 The Protestant Ethics and Spirit of Capitalism

MODULE 4

GEORG SIMMEL

4.1 Formal Sociology, Sociation and Group formation

4.2 Relationships and Social types

4.3 Philosophy of Money

4.4 Modernity - Metropolis

Reference

- Ian Craib - Classical Social Theory
- Raymond Aron - Main Currents in Sociological Thought
- George Ritzer - Sociological Theory
- Ronald Fletcher - The making of Sociology
- Paramjit S Judge - Foundations of Classical Sociological Theory
- Vidya Bhushan and Sachdeva- Fundamentals of Sociology
- Anthony Giddens - Capitalism and Modern Social Theory
- J. Turner et al - The emergence of Sociological Theory
- Irving M. Zetlin - Ideology and the development of Sociological Theory
- Lewis A. Coser - Masters of Sociological Thought
- John Hughes et al - Understanding Classical Sociology: Marx, Weber, Durkheim
- Anderson & Kaspersen - Classical and Modern Social Theory
- Hawthorne, Geoffrey - Enlightenment and Despair

SEMESTER I

CORE COURSE

NO. OF CREDITS: 5

SOC1 C02 RESEARCH METHODOLOGY OF SOCIOLOGY

Course outcomes

- Recognises the philosophical foundations of social research
- Identifies quantitative and qualitative research
- Applies the steps and stages of research
- Develops skills for social research

MODULE 1 PHILOSOPHICAL FOUNDATIONS OF SOCIAL RESEARCH

1. 1 Major Philosophical Orientations – Epistemology, Ontology and Hermeneutics

1.2 Scientific Method in Social Science, Nature of Social Reality, Logic of inquiry – Induction and Deduction, Objectivity and Reflexivity in Social Research

1.3 Social Research – Nature and Types, Theory building, Theory-research duality, Inter-disciplinary and Multidisciplinary dimensions, Challenges in Social Research

1.4 Methods and Methodologies in Sociological Enquiry, Ethical concerns in Social Research

MODULE 2 PROLOGUE TO RESEARCH

2.1 Problem Formulation, Review of Literature, Research questions, Objectives, Hypothesis

2.2 Concepts, Variables, Conceptual and Theoretical framework

2.3 Research Design – Definition, Functions and Types

2.4 Proposal, Synopsis and Abstract; Preparation of Research Proposal

MODULE 3 DATA COLLECTION

3.1 Techniques of Primary Data collection: Observation, Questionnaire, Schedule and Interview guide, Census and Sample Survey

3.2 Sources of Secondary Data: Archives, Census, Survey Reports, Gazetteers, District handbooks, Film and Visual Artifacts

3.3 Types of sampling — Probabilistic and Non probabilistic.

MODULE 4 QUALITATIVE METHODS IN SOCIAL RESEARCH

4.1 Nature and scope of Qualitative Research Methods; Methodological issues in qualitative research

4.2 Methods: Ethnography and Visual Ethnography, Archival Methods, Oral History, Interviews/ Case Studies, Content analysis , Life History, Genealogy

4.3 Grounded Theory, Triangulation and Mixed methods: Context and Scope

Reference

- Seltiz, Claire et al - Research Methods in Social Relations
- Goode, William.J. & Hatt, Paul.K Methods in Social Research
- Young, Pauline.V - Scientific Social Surveys and Research
- Silverman, David(Ed) - Qualitative Research
- Festinger and Katz - Research Methods in Behavioural Sciences
- Kerlinger, Fred. N. - Foundations of Behavioural Research
- Ranjit Kumar – Research Methodology A Step by step Guide for Beginners
- Kothari. C.R. - Research Methodology- Methods and Techniques
- Croxton and Cowden - Applied General Statistics
- Gupta. S.P - Fundamentals of Statistics
- Black, James. A. & Dean, Champion.J - Methods and Issues in Social Research
- Blalock, Huber.M. - Social Statistics
- Layder, Derek - Sociological Practice: Linking Theory and Social research
- Punch, Keith. F - Introduction to Social Research
- De Vaus, D.A. - Surveys in Social Research, London
- John J Macionis - Sociology

SEMESTER I

CORE COURSE

NO. OF CREDITS: 5

SOC1 C03 SOCIOLOGY OF INDIAN SOCIETY

Course outcomes

- Traces out the historical emergence of Indian Society
- Examine the different approaches to the study of Indian Society
- Discuss the different issues of Indian society
- Analyse the transformations in Indian society

MODULE 1 INDIAN SOCIETY: HISTORICAL EMERGENCE

- 1.1 Historical context and emergence of Modern India- British rule and its impact (A.R.Desai, Ramachandra Guha)
- 1.2 Freedom Movement and the emergence of the Indian Nation (A.R,Desai)
- 1.3 Indian society in the post Independent era (Contemporary India-Deshpande)

MODULE 2 APPROACHES TO THE STUDY OF INDIAN SOCIETY-I

- 2.1 Development of Sociology in India, Contextualisation and Indegenisation
- 2.2 Indological approach: Louis Dumont-Homo Heirarchicus, Purity - Pollution, Ghurye- Origin and Features of Caste System
- 2.3 Structural-Functional approach: Srinivas- Social structure and Mobility, Dube-Village Society

MODULE 3 APPROACHES TO THE STUDY OF INDIAN SOCIETY-II

- 3.1 Cultural approach: Surajit Sinha-Tribes and Indian Civilisation , N.K.Bose-Civilisational View of Indian Society
- 3.2 Dialectical approach: D.P Mukherjee- Indian Social Structure , A.R.Desai-Social Unrest and Nationalism
- 3.3 Subaltern approach: David Hardiman- Devi Movement, Ambedkar-

Annihilation of Caste **MODULE 4 CURRENT ISSUES IN INDIAN**

SOCIETY

- 4.1 Contemporary Issues in India: Poverty, Inequality of Caste and Class, Issues in Agrarian Sector
- 4.2 Secularism, Communalism, Ethnicity
- 4.3 Nationalism- Views of Tagore, M.K Gandhi ,Nehru, Constitutional Views

References

- Beteille.A. Desai. - Caste, Class and Power
- A.R. Desai. A.R. - Rural Sociology in India
- Kolenda. P M. - Modernisation of Under developed Societies
- Mandelbaum. D.G. - Caste in Contemporary India
- Kapadia. K.M. - Society in India
- Singer.M. & Cohn.B - Marriage and Family in India
- Singer.M. & Cohn.B - Structure and Change in Indian Society
- Singh, Yogendra - Modernisation of Indian Tradition
- Srinivas. M.N. - Social Change in Modern India
- Srinivas. M.N. - On Living in a Revolution and Other Essays
- Kothari, Rajini - Caste in Indian Politics
- Dumont.L. - Homo-heirarchicus
- Srinivas. M.N.(Ed) - India's Villages
- Srinivas. M.N. & Bardan.P.K.(Ed) - Rural Poverty in South Asia
- Das, Veena - Structure and Cognition- Aspects of Hindu Caste and Ritual
- Frankel & Rao M.S.A - Dominance and State power in Modern India
- Karve, Irawati - Kinship Organisation in India
- Alavi, H & Harris,J (Ed) - Sociology of Developing Societies-South Asia
- D.N.Dhanagare - Themes and Perspectives in Indian Sociology
- Dipankar Gupta (Ed) - Social Stratification
- Dipankar Gupta - Interrogating Caste
- Yogesh Atal (Ed) - Understanding Indian Society
- Fuller.C.J.(Ed) - Caste Today
- Shah. A.M. - The Family in India: Critical Essays
- Uberoi, Patricia (Ed) - Family, Kinship and Marriage
- Deshpande, - Contemporary India
- Satish Veena Das - The Oxford Companion to Sociology and Social Anthropology

SEMESTER I

CORE COURSE

NO. OF CREDITS: 5

SOC1 C04 RURAL AND TRIBAL SOCIETIES IN INDIA

Course outcomes

- Identifies the scope and relevance of rural and Tribal studies
- Acquaints with the basics of rural and tribal societies in our country
- Analyse rural and tribal problems
- Appraise rural and tribal social institutions

MODULE 1 RURAL AND PEASANT SOCIETY

- 1.1 Scope and importance of the study of rural society in India
- 1.2 Rural Society, Peasant Society, Agrarian Society: Features
- 1.3 Perspectives on Indian Village Community: Historical, Ecological
- 1.4 Nature and changing dimensions of village society, Village Studies – Marriot & Beteille

MODULE 2 CHANGING RURAL SOCIETY

- 2.1 Agrarian Social Structure, Land Ownership and Agrarian Relations
- 2.2 Emergent Class Relations, Decline of Agrarian Economy, De-peasantization
- 2.3 Land reforms and its impact on rural social structure with special reference to Kerala
- 2.4 Migration, Globalisation and rural social transformation

MODULE 3 GOVERNANCE IN RURAL SOCIETY

- 3.1 Rural governance: Village Panchayat, Caste Panchayat, Dominant Caste
- 3.2 Decentralisation of Power in Village Society, Panchayati Raj
- 3.3 Community Development Programme in India
- 3.4 People's Planning Programme: A critical appraisal

MODULE 4 TRIBAL SOCIETY IN INDIA

4.1 History of Indian Tribes, Demographic Features

4.2 Integration of the Tribals with the Non-Tribals , Tribe- Caste Continuum,

4.3 Tribal Problems in India

4.4 Approaches, Planning and Programmes for Tribal Development

References

Das veena (ed),2003 “Oxford India companion to sociology and social anthropology

Desai . AR (ed),1978 Rural sociology in India, Bombay,popular

Doshi. SL & PC jain 1999 Rural sociology , jaipur,Rawat

Singh K.P (ed.) Tribal Development in India (N. Delhi : Uppal, 1988).

Singh K.S. (ed.) Tribal Situation in India (Simla : Indian Institute of Advanced Study, 1972)

Ghurye G.S. The Scheduled Tribes

Punit , AE 1978 social system in rural India Delhi,sterling

Rao MSA (ed) 1974 Urban sociology,orient longman Hyderabad

Gupta, Dipankar (ed.) Social Stratification (New Delhi : Oxford, 1992)

Vidyarthi L.P The Tribal Culture of India (N. Delhi : Concept, 1985)

SOC 1A01 Audit course 1 ABILITY ENHANCEMENT PROGRAMME

The student can attempt any one of the following Ability Enhancement Programme for securing 2 credits.

1. An internship with an NGO or Self Help Group or suitable to the topic under study, under a supervisor who is a faculty member of the parent department

2. One seminar presentation on a relevant topic.

3. One case study analysis approved by the Department Council and conducted under a supervisor who is a faculty member of the parent department.

4. A Social Impact Assessment of any relevant Project or Development Initiative carried out under a supervisor who is a faculty member of the parent department and approved by the Department Council.

5. Review of any content in the printed/ audio/video format relevant to Sociology.

SEMESTER II

CORE COURSE

NO. OF CREDITS: 5

SOC2 C 05 SCHOOLS OF SOCIOLOGICAL THEORY I

Course outcomes

- Identifies various schools of sociological theory
- Explains the major schools of thought
- Critically examine of the major schools of thought
- Recognize the utility and relevance of the theoretical premises

MODULE 1 STRUCTURE AND FUNCTION IN SOCIOLOGICAL THEORY

- 1.1 Social anthropological tradition: Malinowski , Radcliffe-Brown
- 1.2 Empirical functionalism: Robert K. Merton
- 1.3 Analytical Functionalism: Talcott Parsons
- 1.4 Linguistic Tradition: Ferdinande de Saussure, Structuralism of Claude Levi-Strauss

MODULE 2 CONFLICT THEORY

- 2.1 Conflict Perspective: Influence of Marx, Weber and Simmel
- 2.2 The Dialectical Conflict Theory: Ralph Dahrendorf
- 2.3 The Conflict Functionalism: Lewis A. Coser
- 2.4 Conflict and Geopolitical Theory: Randall Collins

MODULE 3 SYMBOLIC INTERACTIONISM

- 3.1 Theory of Mind, Self and Society: G.H.Mead
- 3.2 Theory of Looking Glass self: C.H.Cooley
- 3.3 Interpretative approach: Herbert Blumer
- 3.4 Dramaturgical Analysis: Erving Goffman

MODULE 4 PHENOMENOLOGY

- 4.1 The idea of Phenomenology: Edmund Husserl
- 4.2 Phenomenological Interactionism: Alfred Schutz

4.3 Social Construction of Reality: Peter Berger and Thomas Luckmann

4.4 Ethnomethodology: Harold Garfinkel

References

- | | |
|------------------------|--|
| Turner.J. | - The Structure of Sociological Theory |
| Ritzer.G. | - Sociology: A Multiple Paradigm |
| Ritzer.G. | - Modern Sociological Theory |
| Irving.M.Zeitlin | - Rethinking Sociology: A Critique of Contemporary |
| Theory Anthony Giddens | - Central Problems in Social Theory |
| Martindale | - The Nature and Types of Sociological Theory |
| Coser & Rosenberg | - Sociological Theory Anthony |
| Giddens(Ed) | - Positivism and Social Theory |
| Bottomore&Nisbet(Ed) | - A History of Sociological Analysis |
| Graham.C.Kinloch | - Sociological Theory: Its Development and Major Paradigms |

SEMESTER II

CORE COURSE

NO. OF CREDITS: 5

SOC2 C 06 RESEARCH METHODOLOGY II

Course outcomes

- Acquaints with quantitative and qualitative research methods
- Identifies and applies scaling techniques
- Applies statistics in social research
- Distinguishes the various components and format of report

MODULE 1 MEASUREMENT AND SCALING TECHNIQUES

- 1.1 Measurement in Research, Measurement Scales: nominal scale, ordinal scale, interval scale, ratio scale., Sources of Error in Measurement
- 1.2 Tests of Sound Measurement, Technique of Developing Measurement Tools
- 1.3 Scaling- Meaning, Purpose, Basic problems of Scaling, Establishing validity and reliability of the Scale
- 1.4 Construction of Scales: Bogardus' Social Distance Scale, Thurston's Equal Appearing Interval Scale, Likert's Internal Consistency Scale

MODULE 2 STATISTICS IN SOCIAL RESEARCH

- 2.1 Nature , Use and Limitations of Statistics in Social Research
- 2.2 Measures of Central Tendency: Mean, Median and Mode; Measures of Dispersion: Mean Deviation, Standard Deviation
- 2.3 Correlation-Meaning and types, Karl Pearson's Correlation, Spearman's Rank Correlation; Regression: Meaning and Purpose, Linear regression
- 2.4 Parametric test: t-test, F-test; Non-parametric test: Chi-square Test

MODULE 3 PROCESSING AND ANALYSIS OF DATA

3.1 Classification and Tabulation of data –Tables: Frequency Table and Two way table

3.2 Graphical and Diagrammatic representation of Data : Graphs-Histogram, Ogives ;

Diagrams- Bar Diagram and Pie Diagram

3.3 Data Analysis: Editing, Coding and Classification of Data, Interpretation and Inference

3.4 Use of Computers in Data Analysis

MODULE 4 REPORTING AND ACADEMIC WRITING

4.1 Report Writing – Purpose of reporting, Types: Technical Report, Popular Report

4.2 Format of Report ; Style Manuals: MLA, APA; Referencing , Bibliography and Indexing

4.3 Academic Writing: Significance, Forms: Article, Monograph, Dissertation, Thesis

4.4 Issues of Copyright and Plagiarism, Use of Softwares in Social Research

(For the paper, questions for a total of weightage 10 within the total weightage of 30 will be problem based The problem based questions in Part A, Part B and art C will not exceed 5 weightage respectively.)

References

American Sociological Association (2007). *American Sociological Association Style*

Guide.

Becker, Howard S. *Writing for Social Scientists*. 2nd ed.: University of Chicago

Seltiz, Claire et al - Research Methods in Social Relations

Goode and Hatt - Methods in Social Research

Young, Pauline.V - Scientific Social Surveys and Research

Silverman, David(Ed) - Qualitative Research

Kothari - Research Methodology

Festinger and Katz - Research Methods in Behavioural Sciences

Kerlinger, Fred. N. - Foundations of Behavioural Research

Kothari. C.R. - Research Methodology- Methods and Techniques

Croxton and Cowden - Applied General Statistics

Gupta. S.P. - Fundamentals of Statistics

Black and Champion- Methods and Issues in Social Research

Blalock, Huber.M. - Social Statistics

Layder, Derek - Sociological Practice: Linking Theory and Social research

Punch, Keith. F - Introduction to Social Research

De Vaus, D.A. - Surveys in Social Research

W.Lawrence Neuman - Social Research Methods-Quantitative and Qualitative Approaches

SEMESTER II

CORE COURSE

NO. OF CREDITS: 5

SOC2 C07 URBAN SOCIOLOGY

Course outcomes

- Summarises the basic ideas of Urban Sociology
- Explains the theories and processes of urban ecology
- Discuss issues of urban development
- Initiate a critical discussion on Urban society

MODULE 1 BASICS OF URBAN SOCIOLOGY

1.1 Classical sociological traditions of Urban Sociology- Views of Durkheim, Weber, Simmel Conceptualisations of Tonnies and Redfield on Urban Society

1.2 Basic Concepts: Urbanism, Urbanity, Urbanization, city, town, Mega-Cities metropolis and Megalopolis, Ethnic Enclaves, Gated Communities

1.3 Classification of urban centres, Industry, Service and Business centred developments

MODULE 2 URBAN ECOLOGICAL PROCESSES AND THEORIES

2.1 Urban Ecology, Elements of Urban Ecology- POETS

2.2 Ecological Processes: Invasion, Succession, Concentration, Centralisation, Segregation

2.3 Urban community and spatial dimensions: Park, Burgess and Mc kenzie

2.4 Contemporary Human ecological approach of Hawley and Duncan

MODULE 3 RECENT THEORETICAL PERSPECTIVES IN URBAN SOCIOLOGY

3.1 Neo-Weberian perspectives of Pahl, Rex and Moore

3.2 Socio spatial approach of Henri Lefebvre

3.3 Marxian approach of David Harvey

3.4 Neo Marxian approach of Manuel Castells

MODULE 4 URBANISATION IN INDIAN CONTEXT

- 4.1 Impact of colonialism and neo-colonialism on Urbanisation in India
- 4.2 Sociological implications of Indian urbanization: Impact on class and occupational structures, religion and polity, kinship networks
- 4.3 Urban Social Problems: Poverty, Slums, Gentrification
- 4.4 Urbanisation in India: Contributions of Patric Geddes, MSA Rao

References

Bergel.E.E. - Urban Sociology

James Quinn - Urban Sociology

Bidyut Mohanty(Ed) - Urbanisation in Developing Countries

John.J.Palan - The Urban World

Ramachandran.R. - Urbanisation and Urban systems in India

Mumford.L. - Cities in History

A.R.Desai & S.D.Pillai - Slums and Urbanisation

Alfred de Souza (Ed) - The Indian City

V L.S.Prakash Rao - Urbanisation in India

Berry et al - Contemporary Urban Ecology

M.S.A.Rao & C.S.Bhat - Readings in Urban Sociology

Rao, M.S.A. (ed.) 1991. A Reader in Urban Sociology Orient Longman: New Delhi.

SEMESTER II

CORE COURSE

NO. OF CREDITS: 5

SOC2 C08 GENDER STUDIES

Course outcomes

- Explains the basic concepts of Gender Studies
- Elaborates on the theoretical perspectives on Gender
- Discuss the Gender dynamics in Indian society
- Evaluates Gender relations in the context of Kerala society

MODULE 1 GENDER AS A SOCIAL CONSTRUCT

- 1.1 Gender Studies: Genesis ,Women’s studies/gender studies
- 1.2 Basic Concepts - Sex/Gender, Gender identity, Gender Stereotypes, Gender Discrimination, Gendered division of labour , Heteronormativity, LGBTIQ
- 1.3 Different waves of Feminism, Feminist Perspectives - Liberal, Radical, Marxist, Socialist, Eco-feminism

MODULE 2 PERSPECTIVES ON GENDER

- 2.1 Nancy Chodorow, Ann Oakley, Simone de Beauvoir
- 2.2 Judith Butler, Julia Kristeva,
- 2.3 Queer theory, Queer politics
- 2.4 Theories of masculinity: Sherry.B.Ottner, R.W. Connel

MODULE 3 GENDER DYNAMICS IN INDIA

- 3.1 Social institutions and Gender reproduction- Caste, Class, Religion
- 3.2 Gender and economy:, property relations, gender wage-gap, unpaid labour and glass ceilings
- 3.3 Representations of Gender: Objectification and stereotyping , Gendered Violence
- 3.4 Issues of sexual minorities in India

MODULE 4 GENDER AND KERALA SOCIETY

- 4.1 The making of the ideal Malayalee Woman- J.Devika kulasthreeyum Chandappennum
- 4.2 Politics, women, and well-being: How Kerala became a model- Robin Jeffrey
- 4.3 Scripting Lives: Narratives of ‘Dominant Women’ in Kerala- Sharmila Sreekumar
- 4.4 Hierarchies of masculine performance Friendship and Flirting: Micro-Politics in Kerala, South India Caroline Osella & Filippo Osella

Reference

- Desai, Neera & M. Krishnaraj
Dube, Leela et.al. (ed)
- Sharma, Ursula
- Shulamitz, Reinhartz & Lynn
Davidman
Chanana, Karuna
- Dube, Leela
- Gandhi, N. & N.Shah
- George Ritzer
David Boucheir
Ann Oakley
Haralambos, Michael
J.Devika
Robin Jeffrey
Sharmila Sreekumar
- Caroline Osella & Filippo Osella
- Women and Society in India
 - Visibility and Power: Essays on Women in Society and Development
 - Women, Work and Property in North-West India
 - Feminist Research Methods
 - Socialization, Women and Education: Explorations in Gender Identity
 - Women and Kinship: Comparative Perspectives on Gender in South and South-East Asia
 - The Issues at Stake: Theory and Practice in the Contemporary Women's Movement in India
 - Sociological Theory
 - The Feminist Challenge
 - Sex Gender And Society
 - Sociology-Themes and Perspectives
 - Kulasthreeyum Chandappennum
 - How Kerala became a model
 - Narratives of 'Dominant Women' in Kerala
 - Friendship and Flirting: Micro-Politics in Kerala, South India

SOC2A02 Audit Course 2 SKILL DEVELOPMENT PROGRAMME

The student should acquire skill in at least one of the software such as SPSS/R/ Stata or any software relevant to Sociological Research and use the software to do any one of the following with the help of a supervising teacher.

1. Calculation of descriptive measures in statistics.
2. Calculation of correlation and regression.
3. Perform ANOVA.
4. Multiple regression models.
5. Perform t, chi square and F test.
6. Perform any non-parametric test.

SEMESTER III

CORE COURSE

NO. OF CREDITS: 5

SOC3 C 09 SCHOOLS OF SOCIOLOGICAL THEORY II

Course outcomes

- Explains various schools of sociological theory
- Elaborates the contributions in the various schools of thought
- Initiate critical discussion on the major schools of thought
- Identifies the relevance of the theoretical premises

MODULE 1 EXCHANGE THEORY

- 1.1 Anthropological tradition: Malinowski, James Frazer, Marcel Mauss
- 1.2 George.C.Homans- Propositions of Exchange
- 1.3 Peter.M.Blau- Basic Exchange Principles, Cognitive Dissonance
- 1.4 Richard Emerson: Social Network Theory

MODULE 2 INTERPRETATIVE TRADITION IN SOCIOLOGY

- 2.1 Interpretive Tradition : Influence of Weber
- 2.2 Karl Mannheim: Sociology of Knowledge
- 2.3 Clifford Geertz: Interpretation of Culture
- 2.4 Mary Douglas: Purity and Pollution

MODULE 3 CRITICAL THEORY

- 3.1 Conceptual foundations of early Critical Theory
- 3.2 Frankfurt School and Critical Theory
- 3.3 Adorno, Horkheimer, Benjamin
- 3.4 Revival of Critical Theory: Habermas

MODULE 4

NEO FUNCTIONALISM AND NEO MARXISM

4.1 Niklas Luhmann: Theory of Social Systems

4.2 Jeffrey C Alexander: Neofunctionalism

4.3 Antonio Gramsci: Hegemony, Theory of Civil Society; Louis Althusser:

The Theory of State

4.4 Ralph Miliband: The State in Capitalist Society, Nicos Poulantzas: State and
post Modernity, Miliband Poulantzas debate

References

- Turner.J. - The Structure of Sociological Theory
- Ritzer.G. - Sociology: A Multiple Paradigm
- Ritzer.G. - Modern Sociological Theory
- Irving.M.Zeitlin - Rethinking Sociology: A Critique of Contemporary Theory
- Anthony Giddens - Central Problems in Social Theory
- Martindale - The Nature and Types of Sociological Theory
- Coser & Rosenberg - Sociological Theory
- Anthony Giddens(Ed) - Positivism and Social Theory
- Bottomore&Nisbet(Ed) - A History of Sociological Analysis
- Graham.C.Kinloch - Sociological Theory: Its Development and Major
Paradigms
- Bryan S Turner - New Blackwell Companion to Social Theory

SEMESTER III

CORE COURSE

NO. OF CREDITS: 5

SOC3 C 10 SOCIOLOGY OF DEVELOPMENT: THEMES AND PERSPECTIVES

Course outcomes

- Explains the conceptual discussions on development
- Discuss the theoretical views of development
- Evaluate the Indian experience of development
- Evaluate the Kerala model of development

MODULE 1 CONCEPTS AND PERSPECTIVES OF DEVELOPMENT

- 1.1 Basic concepts: Change, Progress, Evolution, Modernization: Factors of Social Change
- 1.2 Indices of Development, Human Development Index, Gender Development Index
- 1.3 Changing conceptions of Development: Economic Development, Human development, Social development, Sustainable Development
- 1.4 Paths of Development: Socialist, Capitalist, Gandhian, Mixed

MODULE 2 THEORIES OF DEVELOPMENT & UNDERDEVELOPMENT

- 2.1 Modernization Theory: W. W. Rostow, Daniel Lerner
- 2.2. Dependency Theory: G. Frank – Development of underdevelopment
Samir Amin – Unequal development Immanuel Wallerstein – World system
- 2.3. Alternative Development Model: Mahatma Gandhi – Gram Swaraj
E. F. Schumacher – Intermediate Technology
- 2.4 Critique of Development: Arturo Escobar, Amartya Sen

MODULE 3 DEVELOPMENT AND DILEMMAS IN INDIA

- 3.1 Indian Experience of Development: Sociological appraisal of Five-Year Plans,
- 3.2 Grassroot initiatives :Community Development Programmes, Panchayati Raj Institutions, Self Help Groups

3.3 Globalisation: socio-cultural repercussions of globalization, social implications of Information and technology revolution

3.4 Development induced Displacement and Rehabilitation,

MODULE 4 KERALA MODEL OF DEVELOPMENT

4.1 Kerala Model of Development , Critic of the Kerala Model

4.2 Development and its beneficiaries –differential access , the displaced in Kerala

4.3 Development and local governance – Micro level planning

4.4 Field Study- Visit to Institutions, Project sites, Self Help Groups

Reference

Appadurai, Arjun - Modernity At Large: Cultural Dimensions of Globalisation

Dereze, Jean and Amartya Sen - India: Economic Development and Social Opportunity

Desai, A.R. - India's Path of Development: A Marxist Approach

Giddens, Anthony - Introduction to Sociology

Harrison, D - The Sociology of Modernization and Development.

Haq, Mahbub Ul - Reflections on Human Development

Amin, Samir - Unequal Development

Giddens, Anthony - The Consequences of Modernity.

Wallerstein Immanuel - The Modern World System

Sharma, SL - Development: Socio-Cultural Dimensions.

SEMESTER III

ELECTIVE COURSE

NO. OF CREDITS: 4

SOC3 E01

ENVIRONMENTAL SOCIOLOGY

Course outcomes

- Explain the reciprocal relationships between environment and society.
- Discuss the different ideologies and perspectives of environmental sociology.
- Appraise the relationship between gender and environment.
- Analyse the interplay between environment, development, capitalism and social justice.

MODULE 1: Introduction to Environmental Sociology

- 1.1 Basic concepts -Environment , Ecosystem, Ecology, Biodiversity, Ecological footprint,
- 1.2 Environment and Society- Need for the study of environment,
- 1.3 Environment in Culture and Religion: Non Western Views of the Environment, The Judeo-Christian Legacy, Pre-nineteenth century social readings
- 1.4 Environmental Sociology: Field and Scope, Development of Environmental Sociology in India

MODULE 2: Major Environmental Ideologies

- 2.1. The Enlightenment, Environment and Social Theory - 19th-21st century social theory - Development of Environmental Sociology
- 2.2. Environmental Visions - Thoreau, Rachel Carson, Gandhiji
- 2.3. Anthropocentrism, Anthropocene and Deep Ecology
- 2.4. Green dilemmas: Consumerism and Environmentalism

MODULE 3: Theoretical Perspectives in Environmental Sociology

- 3.1 Duncan's Ecological Complex: POET Model
- 3.2 Dunlap and Catton's Ecological Explanation
- 3.3 Political economy interpretation- Alan Schnaiberg
- 3.4 Indian thinkers: Radhakamal Mukherjee, Ramachandra Guha

MODULE 4: Debates on Environment

- 4.1 Capitalism and Implications on Environment - Eco-crisis, Human Progress versus Ecological Collapse
- 4.2 Ecology and culture – Gendered hierarchies, Gender and Environment Debate – Ecofeminism
- 4.3 Ecological Degradation and Migration, Disasters and Community Responses
- 4.4 Constitutional Provisions and Environmental Laws with special reference to India

Reference:

- Bas Wielenga, 1999. Towards an Eco-just Society, Bangalore: Centre for Social Action.
- Michel Mayerfeld Bell, 1998. An Invitation to Environmental Sociology, California: Pine Forge Press. (Ch.2)
- Marx, Karl. 1976. The Fetishism of the Commodity and its Secret. In *Capital: A Critique of Political Economy*, Vol. 1. Trans. Ben Fowkes. Harmondsworth: Penguin & New Left Review, pp. 163-177.
- Gardner, Assadourian, Sarin. 2013. "The State of Consumption Today". In *State of the World 2004: Progress towards a Sustainable Society*. UK: Earth Scan
- Christopher Schlottmann. al., 2017. *Environment and Society: A Reader*. New York: New York, University Press. (CH.9)
- Henry Thoreau, 1854; 2006. *Walden, or Life in the Woods*, The Pennsylvania State University: Penn State Electronic Classic Series
- Rachel Carson, 1962. *Silent Spring*, Goa: Other India Press
- Michel Mayerfeld Bell, 1998. *An Invitation to Environmental Sociology*, California: Pine Forge Press
- Maria Mies and Vandana Shiva, 2010. *Ecofeminism*, Jaipur: Rawat
- Karren J Warren, 1997. *Ecological Feminism*, London: Routledge
- Werner Wolfgang, 1993. *Aspects of Ecological Problems and Environmental Awareness in South Asia*, New Delhi: OUP.
- Agarwal. Bina. 2011. *Gender and Green Revolution*, New Delhi: Oxford University Press.
- Vandana Shiva. 1991. *Ecology and the Politics of Survival: Conflict over Natural Resources in India*, New Delhi: SAGE.
- Vandana Shiva. 2014. *Jeevantenilanilppu*, Kozhikode: Mathrubhumi Books (2009. *Staying Alive: Women Ecology and Development*. Delhi: Kali for Women)
- Michel Mayerfield Bell, 1998. *An Invitation to Environmental Sociology*, California: Pine Forge Press
- Bas Wielenga, 1999. *Towards an Eco-just Society*, Bangalore: Centre for Social Action.
- MadhavGadgil, 1997. *This Fissured Land: An Ecological History of India*, New Delhi: Oxford
- RamachandraGuha, 2000 *Environmentalism: A Global History*, New Delhi: OUP
- John Barry, 1999. *Environment and Social Theory*, London: Routledge
- M. George and R. Yvonne. 2005. *The Language of Environment*. New York: Routledge
- RamprasadSengupta. 2014. *Ecological Limits and Economic Development*, New Delhi: Oxford University Press.
- Christopher Schlottmann. al., 2017. *Environment and Society: A Reader*. New York: New York University Press. (Ch.32)
- MadhavGadgil, 1997. *This Fissured Land: An Ecological History of India*, New Delhi: Oxford
- Saberwal. S and Rangarajan. M. 2005. *Battles Over Nature: Science and the Politics of Conservation*. New Delhi: Permanent Black. (Ch.7)
- Ghanshyam Shah, 2004. *Social Movements in India*, New Delhi: Sage.
- Gadgil.M. and R. Guha . 1995. *Ecology and Equity: Use and Abuse of Nature*, MiddlesexUK: Penguin Books
- Vandana Shiva. 1991. *Ecology and the Politics of Survival: Conflict over Natural Resources in India*. New Delhi: SAGE.
- RanjitDwivedi. 2006. *Conflict and Collective Action: The SardarSarovar Project in India*. New York: Routledge.
- Omvedt. G. 1984: *Ecology and Social Movements*, *Economic and Political Weekly*. XIX (44): 1865- 67.

Lele, S. 1991. Sustainable Development: A Critique, World Development. 19 (6): 607-21
Prasad M.K. 2001. PrakrithiSamrakshanam (Malayalam), Kerala
SasthraSahithyaParishad, Kochi

SEMESTER III

ELECTIVE COURSE

NO. OF CREDITS: 4

SOC3 E02 SOCIOLOGY OF MIGRATION AND DIASPORA

Course outcomes

- Identifies the concept and issues of diaspora
- Explains the history, approaches and examples of Indian Diaspora
- Analyse the problems of Indian Diaspora
- Assess the impact of diasporic population on Indian society

MODULE 1 MIGRATION AND DIASPORA

1.1 Theories of Migration: Push and Pull Theory, Everett Lee's Theory, Ravenstein's Theory

1.2 Migration and formation of diaspora: Migration systems theory, Transnational Theory

1.3 Meaning and implications of Diaspora, Types of Diaspora, Scope and significance of diaspora studies

MODULE 2 INDIAN DIASPORA

2.1 Indian Diaspora: A Historical Overview- Precolonial, Colonial and Post colonial,

2.1 Perspectives of studying Indian Diaspora- Retentionist, Adaptationist, Plural
Society, Ethnicity and Political Economy perspectives

2.3 Case studies of Indian Diaspora: Cultural Revivalism: The Caribbean, Enclavisation
and Racism: USA, UK and Canada, Transient Diaspora: West Asia, Ethnicity, Racism
and Violence: Srilanka

MODULE 3 INDIA AND INDIAN DIASPORA

3.1. Policies and Initiatives by the Government of India for the Indian Diaspora

3.2 Role of Indian Diaspora in placing India in the Global Scenario

3.3 Remittance economy and its socio-economic impact, Problems of return migrants:

Socio cultural and Economic problems with special reference to Kerala

MODULE 4 DIASPORA AND MOTHERLAND

4.1 The concept of home among diasporic communities- Homeland: imaginary or real

4.2 Indian Diaspora in Cyberspace Indian Diaspora and Films , Indian Diasporic Writing

4.3 Diaspora and Identity: Gender and Diaspora, Role of Pravasi organizations

Reference

- | | |
|---|--|
| Arther Helwig | - Sikhs in England |
| Clarke, Colin, Ceri Peach
&Vertovec (Ed) | - South Asians Overseas |
| Bhadur Singh (Ed) | - Indians in South east Asia |
| Bhadur Singh (Ed) | - Indians in the Caribbean |
| Ravindra Jain.K. | - Indian Communities Abroad: Themes and Literature |
| C. Kondapi | - Indians abroad |
| Makrand Paranjpe | - Indiaspora |
| Stephen Castells and Mark.J.Miller | - The Age of Migration |
| Stuart Hall and Paul Du Gay(Ed) | - Questions of Cultural |
| Identity Zacharia.K.C. | - Kerala's Gulf Connection |
| Hugh Tinker | - The Banyan Tree |
| Benedict Anderson | - Imagined Communities |
| Robin Cohen | - Global Diasporas: An Introduction |
| Aparna Rayparol | - Negotiating Identities |
| Jayaram, N. | - The Indian Diaspora: Dynamics of Migration. |
| Dubey, A. K. | - Indian Diaspora: Identity and Globalisation. |
| Manual Castells | -The Age of Migration |

SEMESTER III

ELECTIVE COURSE

NO. OF CREDITS: 4

SOC3 E03 SOCIOLOGY OF HEALTH

Course outcomes

- Develops a basic understanding of health in Social context
- Recognises the sociological perspectives of Health and Medicine
- Elaborates the activities of World Health Organization
- Evaluates health planning policies and programmes in India.

MODULE 1 HEALTH IN SOCIAL CONTEXT

- 1.1 Meaning and definitions of health, Dimensions of health, Determinants of health
- 1.2 Changing Concepts of Health, Culture and health, Health development
- 1.3 Social basis of health: Social class and health, Gender and health, Ethnicity and health

MODULE 2 THEORETICAL PERSPECTIVES OF HEALTH AND MEDICINE

- 2.1 Structural – Functional perspectives: The sick role, the Physicians' role
- 2.2 Symbolic interactional perspectives: The social construction of illness, The Social construction of treatment
- 2.3 The Social conflict perspectives: The access issues, the profit motive, Medicine as Politics, Labelling approach

MODULE 3 HEALTH CARE AND SOCIAL PROBLEMS

- 3.1 Family and health, Occupational health, Health and ageing, Health and environment
- 3.2 Social epidemiology, Community health problems
- 3.3 Private and public health care services, Problems in health care service

MODULE 4 HEALTH ORGANIZATION, POLICIES AND PROGRAMMES

- 4.1 Health- a global issue: World Health Organisation, Red Cross Society, Community Health programmes in India
- 4.2 Social Security measures and Role of Governmental Agencies
- 4.3 Health and Health Care in Kerala with special focus on maternal and child health and health of aged

References

- John J. Macionis - Sociology John J. Macionis,
- Simon Schuster -Sociology
- Anthony Giddens - Sociology
- Henry L. Tischler - Introduction to Sociology
- K. Park - Preventive and Social Medicine
- David F. Marks, Michael Marry - Health and Psychology:Theory,
Research and Practice
- Haralambos and Holborn - Sociology Themes and Perspectives
- James M. Henslin -Sociology: A Down to Earth Approach
- Linda L. Lindsey , Stephen Beach - Sociology
- Beth B. Hess, Elizabeth and Peter - Sociology
- Claire M. Renzettl, Daniel J. Curran - Sociology
- Anthony Giddens - Sociology

SEMESTER III

ELECTIVE COURSE

NO. OF CREDITS: 4

SOC3 E04 SCIENCE, TECHNOLOGY AND SOCIETY

Course outcomes

- Identifies Technology as a form of knowledge
- Explains sociological perspectives towards Science & Technology Studies
- Examines the relationship between science, technology and society
- Critically evaluate the various impact of technology

Module 1: Technology as Form of Knowledge

- 1.1. Power relations in knowledge production - Science-non science dichotomy, Science and technology duality, State of indigenous knowledge
- 1.2. Scientism in social sciences – Perceptions on research in social sciences – thrust on Objectivity, Quantitative techniques and consequent reductionism
- 1.3. Perspectives on technology and society: Technological Determinism, Social Constructionism, Post humanism

Module 2: Science and Technology as a Concern of Sociology

- 2.1. Concepts and ideas on Social impacts of Technology -Technocracy, Technological Determinism, Y Generation, McDonaldisation, Disneyfication, Fordism and Post-Fordism, ,
- 2.2. Views on contemporary societies - Daniel Bell-Post Industrial Society, Manuel Castells-Network Society,
- 2.3. Theoretical views on technological interventions in social life: Bruno Latour - Actor-Network Theory (ANT), Ulrich Beck-Risk Society

Module 2: Technological Interventions and Society

- 2.1 Technological interventions in re-defining space and time - Industrialisation and urbanization, migration.
- 2.2 Changing notions of Time and Space, Flows and Boundaries, Virtual Community
- 2.2 E-Governance and Surveillance Society, State Policy, Digital Divide and Inclusion, Cyber Crime

Module 4 Technology and its Impact on Society

- 4.1 Technology and Emerging Political Processes
- 4.2 Technology and Changing Family Relations
- 4.3 Technology and Changing Health Systems

Reference

- Wiebe Bijker, T P Hughes, and Trevor Pinch (eds.) 1987, Social Construction of Technology, pp.17- 50.
- Latour, Bruno. 1983. "Give Me a Laboratory and I Will Raise the World." Pp. 141-170 in Science Observed: Perspectives on the Social Study of Science, edited by K. D. Knorr-Cetina and M. Mulkey. London: Sage.
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- Wiebe E. Bijker et.al. 2012. The Social Construction of Technological Systems. Cambridge: The MIT Press.

- Uberoi, J. P. S. 2002. *The European Modernity: Science, Truth and Method*. Delhi: Oxford University Press.
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- Gyan Prakash. 1999. *Another Reason: Science and the Imagination of Modern India*. Princeton: Princeton University Press.
- Latour, Bruno. 1987. *Science in Action*. Cambridge: Harvard University Press.
- McGinn, R. 1991. *Science, Technology and Society*, Prentice Hall, Englewood Cliffs, N.J.
- Singh, Rajendra. 2001. *Social Movements, Old and New: A Postmodernist Critique*. New Delhi: Sage.
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- Kamala Chaubey ed. 1974 *Science policy and national development* New Delhi: Macmillan.
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- Tim Dyson et.al. (eds.), 2004, *Twenty-first Century India: Population, Economy, Human Development, and the Environment*, New Delhi: Oxford
- Annandale Allen, 2001. *The Sociology of Health and Medicine. A Critical Introduction*. Polity Press. pp. 3-32.
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- Haraway, Donna J. 1996. "Modest witness: Feminist diffractions in science studies." Pp. 428-442, in *The Disunity of Science: Boundaries, Contexts, and Power*, edited by Peter Galison and David stump. Stanford: Stanford University Press.
- Latour, Bruno. 1991. "Technology is society made durable." Pp. 103-131, In John Law (Ed.) *A Sociology of Monsters: Essays on Power, Technology and Domination*. London: Routledge.
- Vandana Shiva, 200. *Patents. Myths and Reality*. New Delhi: Penguin Books
- India. Rose, Hilary and Rose Steven 1976. *The Political Economy of Science*, London: The Macmillan Press
- Latour, Bruno. 2005. *Reassembling the Social: An Introduction to Actor-Network Theory*. Oxford: Oxford University Press. Pp. 1-17 (Introduction).
- Bell, Daniel. 1974. *The Coming of Post-Industrial Society*. New York: Harper Colophon Books,
- Smart, Barry. 2002. *Michel Foucault*. London: Routledge

SEMESTER III

ELECTIVE COURSE

NO. OF CREDITS: 4

SOC3 E05 PROJECT PLANNING AND PREPARATION

Course outcomes

- Identifies the basic steps involved in project planning and preparation
- Appreciates the relevance of project planning in contemporary research
- Distinguishes the different aspects of project implementation and management
- Develops the skills necessary for project planning and preparation of a proposal

MODULE 1 INTRODUCTION

- 1.1 Meaning and importance of project planning, Purpose and elements of a Project
- 1.2 Identifying the Project area and target group, Determining the goals and objectives of the Project, Identifying the background and significance of the Project Statement of the Problem, Anticipated results of the project
- 1.3 Preparation of action plan and time schedule, Assessing the feasibility and viability of the Project

MODULE 2 PROJECT IMPLEMENTATION AND MANAGEMENT

- 2.1 Resource mobilization, Activity planning
- 2.2 Personnel: Principal Investigator, Co-Principal Investigator(s), Research Associates, Postdoctoral associates, Facilities and equipments
- 2.3 Financial Management of the Project: Identification of funding agencies- Governmental and Private, Preparation of Project budget: Direct and indirect costs

MODULE 3 PROJECT REPORT AND EVALUATION

3.1 Preparation and Submission of final project report

3.2 Project evaluation: Need for evaluation, General criteria for evaluation,

Achievement of targets, Utilization of funds, Follow up programmes

3.3 Communication and presentation of research report

MODULE 4 PREPARATION AND PRESENTATION

OF RESEARCH PROJECT PROPOSAL

4.1 Preparation and submission of a sample research project proposal

Each student should submit separate proposals which will be considered as the assignment of the paper.

Each student has to work under the supervision of a teacher guide from the department.

The report is to be submitted on or before the date specified by the Department

The evaluation will be made by a panel of teachers appointed by the Head of the Department.

The submitted proposals will be evaluated and assigned grades. This grade would be the grade for assignment as part of the internal assessment.

References

- | | |
|---|---|
| Bose, Pradip Kumar | - Research Methodology |
| Bryman, Alan | - Quality and Quantity in Social Research |
| D.A.de Vaus | -Surveys in Social Research |
| Hughes, John | - The Philosophy of Social Research |
| Irvine, J., I. Miles &
J. Evans (eds.) | -Demystifying Social Statistics |
| Madge, John | -The Origins of Scientific Sociology |
| Marsh, Catherine | -Exploring Data |
| Punch, Keith | - Introduction to Social Research |

Shipman, Martin -The Limitations of Social Research

Sjoberg, Gideo& Roger Nett- Methodology for Social Research

SEMESTER IV

CORE COURSE

NO. OF CREDITS: 5

SOC4 C11 CURRENT DEBATES IN SOCIAL THEORY

Course outcomes

- Outlines the contemporary debates in social theory
- Discusses the recent theoretical concepts and ideas
- Evaluates the relevance of theoretical discussions in contemporary society
- Critically appraises the recent theoretical discussions on society

MODULE 1 INDIVIDUALISATION AND SOCIETY

1.1 Giddens: Structure and Agency, Structuration Theory

1.2 Bourdieu: Cultural reproduction, symbolic violence , Habitus and Field, Forms of Capital

1.3 Zygmund Baumann: Liquid Modernity, Fragmentation and Discontinuity

MODULE 2 CULTURE AND SOCIETY

2.1 Raymond Williams: Cultural Materialism

2.2 Roland Barthes: Death of the Author, Myth and Society

2.3 Derrida: Deconstruction as a method, Difference and Differance

MODULE 3 POWER AND SOCIETY

3.1 C Wright Mills: Power and Power

3.2 Michel Foucault: Archeology of Knowledge, Discourse Analysis, Discipline and Punish, History of Sexuality

3.3 Manuel Castells: Power of Identity

MODULE 4 LATE MODERNITY

4.1 George Ritzer: McDonaldisation

4.2 Fredric Jameson: Cultural Logic of Late Capitalism

4.3 Daniel Bell- Post Industrial Societies

Reference

- Pierre Bourdieu - Outline of a Theory of Practice
- Derek Layder - Understanding Social Theory
- Giddens & Turner - Social Theory Today
- David Owen - Sociology after Postmodernism
- George Ritzer - Modern Sociological Theory
- Lash Scott - Sociology of Postmodernism
- Bryan.S.Turner - The Blackwell Companion to Social Theory
- Steve Conner (ed) -The Cambridge Companion to Post Modernism
- Anthony Giddens - The Constitution of Society: Outline of the Theory of Structuration.
- Pierre Bourdieu - Social Space and Symbolic Power..
- Michel Foucault - Discipline and Punishment. New York: Vintage
- Books. Anthony Giddens - Consequences of Modernity..
- Zigmunt Bauman - Intimations of Post
- Modernity Tony Blackshaw - Zigmunt Bauman

SEMESTER IV

CORE COURSE

NO. OF CREDITS: 5

SOC4 C12 ECONOMIC SOCIOLOGY

Course outcomes

- Identifies the basic concepts of Economic Sociology
- Examines the theoretical perspectives of Economic Sociology
- Analyse the impact of Globalisation on economy
- Evaluates the relationship between economy and society

Module 1 Basic Concepts of Economic Sociology

1.1 Concepts: Value, Labour, Money, Rationality, Property and Property Relations, Production, Distribution

1.2 Reciprocity, Redistribution and Exchange; Market Exchange, Gift Exchange

1.3 Mode of Production, State and Market: Welfarism and Neoliberalism

Module 2 Classical Theoretical Perspectives of Economic Sociology

2.1 Marx: critique of political economy, Durkheim: division of labour, Weber: sociology of capitalism

2.2 Simmel: Philosophy of Money, Veblen: Conspicuous consumption, Parsons : Economy as a sub system

2.3 Polanyi:economy as instituted process, Granovetter :Problem of embeddedness

Module 3 Globalisation and Economy

3.1 Globalization and Nation State , Neo-Liberalism and Global Capitalism

3.2 International Financial Management - Balance of Trade and Balance of Payment - International Monetary Fund, General Agreement on Trade and Tariffs, (GATT),World Trade Organization (WTO)

3.3 Global Business and Corporates: MNCs and TNCs, Corporate Social Responsibility, Digital Economy, E-Commerce

Module 4 Economy and Society

4.1 Economic action and social structure: Meaning of Economic action, varieties of embeddedness, Social networks in economic behavior

4.2 Free trade versus fair trade , Changing Nature of Labour Relations:Knowledge industry, out sourcing, flexible labour

4.3Gender and economy: property relations, gender wage-gap, unpaid labour and glass ceilings, Feminisation of Labour

Reference

1. Baran, P The Political Economy of Growth. NY: Monthly Review Press, 1957.

2. Durkheim, É. The division of labour in society. New York: Free Press, 1997.

3. Evans, P B. Embedded autonomy states and industrial transformation. Princeton, NJ: Princeton University P, 1995.

4. Fligstein, N. The architecture of markets: An economic sociology of twenty-first-century capitalist societies. Princeton, NJ: Princeton University P, 2001.

5. Granddethers, M. 'Economic Action and Sociology'. *The problem of Granddethers, M. 'Economic Action and Sociology'*. Vol. The
6. Harvey, D. *A Brief History of Neoliberalism*. Oxford: Oxford University Press, 2009.
 7. Hoselitz, B.F. *Sociological Aspects of Economic Growth*. NY: The Free Press, 1960.
 8. Marx, K. "Alienated Labour" in T.B. Bottomore (Ed.). *Karl Marx: Early Writings*, New York: McGraw Hill, 1963.
 9. Marx, K. *Capital (Vol. I)*. Moscow: Progress Publishers 1974.
 10. Mauss, M. *The Gift*. London: Routledge, 2006.
 11. Mitchell, T 'Fixing the Economy' in *Cultural Studies*, 12(1), 1998.
 12. Nash, M. *Primitive and Peasant Economic Systems*. California: Chandler, 1956.
 13. Parsons, T and N. Smelser. *Economy and Society*. London: Routledge, 2010.
 14. Polanyi, K. *The Great Transformation*. Boston: Beacon Press. 2001.
 15. Sahlins, M. *Stone Age Economics*. London: Tavistock. 1974.
 16. Sahlins, M. *Culture and Practical Reason*. Chigago: University of Chicago P, (Chapter 4), 1976.
 17. Shanin, T (Ed.). *Peasant and Peasant Societies*. Harmonsworth: Penguin, 1971.
 18. Smelser, N. J. and R. Swedberg. *The handbook of economic sociology*. Princeton, NJ: Princeton University P, 2005.
 19. Taussig, M. *The Devil and Commodity Fetishism in South America*. Chapel Hill: University of North Carolina P, 2010.
 20. Trigilia, C. *Economic sociology: State, market, and society in modern capitalism*. Oxford, UK: Basil Blackwell, 2002.
 21. Weber, M. *Economy and society: An outline of interpretive sociology*. Berkeley: University of California P, 1978.
 22. Bottomore, T *Theories of Modern Capitalism*. London: Routledge, 2010.
 23. Smelser, N. J. *The Sociology of Economic Life*. Whitefish: Literary Licensing, 2012.

SEMESTER IV

ELECTIVE COURSE

NO. OF CREDITS: 4

SOC4 E 06 GUIDANCE AND COUNSELING

Course outcomes

- Identifies the basics of guidance and counseling
- Summarises the different techniques and the process of counseling
- Examines the areas of counseling
- Evaluates the significance of counseling in contemporary society

MODULE 1 INTRODUCTION

1.1 Counseling: Meaning and Definition, Guidance: Meaning and purpose, Difference between guidance and counseling

1.2 Goals of Counseling-immediate and long-term, Relevance of counseling

1.3 Types of counseling: Crisis counseling, Facilitative counseling, preventive counseling, Development counseling, Group Counseling

MODULE 2 PROCESS AND TECHNIQUES OF COUNSELING

2.1 Counseling process, Preparation for Counseling, Proceeding of Counseling, Follow up

2.2 Variables affecting Counseling process, Counselor-counselee relationship

2.3 Techniques of Counseling: observation, listening, responding, non-verbal Behavior , communication, questioning, silence, transference.

MODULE 3 AREAS OF COUNSELING

3.1 Family and marital Counseling

3.2 Educational and vocational Counseling

3.3 De-addiction Counseling.

MODULE 4

MODERN TRENDS IN COUNSELING

4.1 Problem solving-role of Voluntary and non- Voluntary agencies

4.2 Transactional analysis

4.3 Rational emotional therapy

Reference

Henry Clay Lindgren - An Introduction to Social Psychology(2nd Ed)

Guidance and Counselling - Sister Mary Vishala

Gladding, S.T. - Counseling: A comprehensive profession

Bhatnagar, Asha and Gupta, Nirmala (Eds.) - Guidance and Counselling: A practical Approach

Sharma, R.N. & Rachana Sharma - Guidance and Counselling in

India Nayak, A.K. - Guidance and Counselling.

Gibson, R.L. and Mitchell, M.H. - Introduction to Guidance

SEMESTER IV

ELECTIVE COURSE

NO. OF CREDITS: 4

SOC4 E07 KERALA SOCIETY: STRUCTURE AND CHANGE

Course outcomes

- Explains the social structure of Kerala
- Analyses the major transformations that have taken place in Kerala
- Examines the major movements that have influenced Kerala society
- Appraises the contemporary Kerala society and its unique features

MODULE 1 SOCIAL STRUCTURE OF KERALA: ANCIENT AND MEDIEVAL PERIOD, AND COLONIAL PENETRATION

1.1 Kerala society: Historiographic trends and approaches

1.2 Kerala under Perumal: Socio political structure, Feudal Agrarian Structure,
Nadu and Naduvazhi, Temple centred administration

1.3 Medieval society: Christian, Jewish and Islamic Presence, Colonial Expansion

MODULE 2 CASTE AND SOCIAL REFORM MOVEMENTS IN KERALA

2.1 Caste and British interventions

2.2 Major social reform movements in Kerala-SNDP and Backward class

movements Education and Social transformation- Role of Christian Missionaries

2.3 Caste and Class transformation, Caste in contemporary Kerala

MODULE 3 STRUCTURAL CHANGES IN KERALA

3.1 Matriliney in Kerala and its changes, Transformations in family, Marriage, Taravadu,
Inheritance, Succession and descent

3.2 Land reforms and structural changes

3.3 Legislations and social change

MODULE 4 KERALA SOCIETY IN TWENTIETH CENTURY

4.1 Nationalist and Workers movements, Peasant movements, Library movement

4.2 Tribal movements and ecological movements

4.3 Demographic trends in Kerala- Migration , Ageing and trends of Birth and death rates; Health care in Kerala; Consumerism and new life style

Reference

- Abraham Vijayan - Caste, Class and Agrarian relations in Kerala
- Chris Fuller - Nairs Today
- Elamkulam Kunjan Pillai - Studies in Kerala History
- K.N. Panicker - Against Lord and the State
- Kesavan Veluthatt - Brahmin Settlements in
- Kerala K.N.Ganesh - Keralathile Innalekal
- K.P Kannan - Of Proliterian Struggle
- M.R.Raghava Varier - Madhyakala Keralam
- M.R.Raghava Vraier & Rajan Gurukkal - Kerala Charithram
-
- P J.Chaerian (Ed) - Perspectives on Kerala History- The Second
- Millenium P.J.Chерian (Ed) - Essays on Cultural Formation of Kerala
- Rajan Gurukkal - The Kerala Temple and Early Medieval Agrarian
- System Robin Jeffrey - Decline of Nair Dominance
- Saradmoni.K. - Matriliny Transformed
- Govindan Parayil (Ed) - Kerala:The Development
- Experience Radhakrishnan.P - Peasant Movements in Kerala
- Sooryamoorthy.R. - Consumption to Consumerism: In the context of Kerala

SEMESTER IV

ELECTIVE COURSE

NO. OF CREDITS: 4

SOC4 E08 SOCIOLOGY OF MEDIA AND COMMUNICATION

Course outcomes

- Identifies the basic concepts related to communication and Media
- Summarises the theoretical discussions related to media
- Analyse the relationship between media and society
- Evaluates the role of media in Indian society

MODULE I MEDIA

1.1 Media: Definition, Nature, Functions

1.2 Types of Media: Print media, Electronic media, New age media, Traditional and New media, Social Media: Blog, Social networking sites, Mainstream media, Corporate media, Media as an Industry

1.3 Media Imperialism, Media convergence, Emergence of Global media

MODULE II THEORIES OF MEDIA AND COMMUNICATION

2.1 Harold Innis: Time and Space bias, Monopolies of knowledge, Balance, bias and empire

2.2 Marshall Mc Luhan: Global Village, Hot and Cold Media, 'The medium is the message', Tetrad, Figure and Ground, Technological Determinism

2.3 Raymond Williams: Critique of Marshall Mc Luhan, Thomson: Media and Modern Society

MODULE III MEDIA AND SOCIETY

3.1 Media as Surveillance, Media as Business

3.2 New media and alternative identities, politics

3.3 Mass media in the age of Globalisation

MODULE IV MEDIA AND INDIAN SOCIETY

4.1 Role of media in social change, development, education & entertainment, Impact of media on specific audience- women, children, youth

4.2 Media and social transformation in Indian society

4.3 Issues of surveillance and regulation of media

Reference

- John Fiske - Introduction to Communication Studies
- Martenson - Introduction to Communication Studies
- Anthony Giddens - Sociology
- Nick Stevenson - Understanding Media Culture
- Nick Stevenson - Social Theory and Mass Communication
- Nick Stevenson - Media theory: An Introduction
- Srivastava K.M. - Radio and T V Journalism
- Mehta. D.S - Mass Communication and Journalism in India
- Diwakar Sharma - Mass Communication: Theory and Practice in 21st Century
- Zahid Hussain - Media and Communication in the Third world
- Raymond Williams - Communication and Revolution
- Denis McQuail - Mass Communication Theory
- Curran, J& M. Gurevitch(ed) - Mass Media and Society
- Johnson, K - Television and social change in rural India
- Singhal, A. and E.M. Rogers - India's Communication Revolution
- Appadorai, Arjun - Modernity at Large: Cultural Dimensions of Globalization
- Leach, E. - Culture and Communication
- Keval J. Kumar - Mass Communication in India
- Carter Martin D. - Mass Communication
- Stanley J. Baren & Dennis K. Davis - Mass Communication Theory

SEMESTER IV

NO. OF CREDITS: 4

SOC4 P01 DISSERTATION

GUIDELINES AND FORMAT FOR MA SOCIOLOGY DISSERTATION

Dissertation is a mandatory part of the curriculum in Post Graduate Programme in Sociology. The structure for the MA dissertation is broad and dissertations vary in format. This is because of differences in the nature of the research question/s and the theoretical and research orientations of students or supervisors. However, there are certain elements that are obligatory in all dissertations, These include

1 Preliminaries

1.1 Title Page

1.2 Certificate-1) Certificate from Self (declaration) 2) Certificate from Guide must be included in the dissertation. The head of the institution/ department must countersign the dissertation.

1.3 Acknowledgement-Acknowledge all persons who have helped directly or indirectly from the start to the finish.

2 Text (main body)

2.1 Introduction & Theoretical frame work

2.2 Statement of the Problem

2.3 Relevance of the study

2.4 Review of Literature.

2.5 Objectives- General & specific (different aspects of general objective would form the specific objectives

2.6 Hypotheses (hypotheses should be the assumptions regarding the findings linked to objectives and should bring out the relation between the dependent variable (s) and any one independent variable)

2.7 Research Design-mention the design and give the rationale for choosing it.

2.8 Variables – both dependent and independent

2.9 Pilot Study

2.10 Universe and unit

2.11 Sampling

2.12 Sources of data-primary and secondary

2.13 Tool of data collection-Pre-test and finalisation

2.14 Data Collection, Analysis and Interpretation. Give inferences also.

2.15 Findings and suggestions.

3. Bibliography - Two commonly used styles are : 1) Vancouver Style : References are numbered according to their appearance in the text. The first author cited in the text is reference number 1 the second author cited is reference number 2 and so on. These numbers are written as Superscripts in the text at their relevant places and enlisted at the end serially.2) Harward Style : References are written in alphabetical order. The standard formats for writing references/ bibliography are APA and MLA

4. Annexure is included at the last section of the dissertation and should include the tool used and other supplementary data like statistics, photographs etc

Organization of Report

The following are mandatory components of your dissertation (unless otherwise indicated), and they must be presented in this order:

- 1 Title page (i) - It should be concise, but informative,
- 2 Certificate (ii)
- 3 Declaration (ii)
- 4 Acknowledgments (optional)
- 5 Dedication (optional)
- 6 Preface (optional)
- 7 Table of contents
- 8 List of tables with page numbers
- 9 List of figures with page numbers
- 10 Main body of your text
- 11 Appendix or appendices (optional – may include tables, figures, photographs, etc., when not inserted in the text)
- 12 References /Bibliography (or appropriate name of this section as prescribed by chosen style manual)

Since the approach and methods of a study vary according to the objectives of research and population under study, the contents and subtitles of this chapter need not be standardised.

But such alterations should be justified in the report with respect to distinct nature of study.

Main Body Chapterisation

1 Introduction-Introduction should contain the purpose of the study .Significance of the study has to be narrowed down from, what is already known of the topic, through, what is not known, to, identifying the unexplored aspect of the topic.

Review Of Literature

Care must be taken to include relevant references only. Evolve a consistent theme in the narration.

Methodology

Methodology and research methods give details of the methods you have used (sample, procedure etc.). Why have you used these methods? How do they enable you to answer the research question? Why are you using a quantitative or qualitative approach? What are the strengths and limitations of your methods? To what extent, if any, will you be able to generalise on the basis of your research? If you are carrying out primary research you need to say how you obtained your sample, how you have ensured anonymity of participants, and any other ethical issues. You need to explain how you obtained data, via interviews, questionnaires etc. If you are carrying out secondary data analysis you need to describe the data set you are using and relevant variables. This chapter should also contain Objectives of the study, Hypotheses, Universe, Sampling Frame, Sample size , Sampling procedure, Selection criteria, data collection procedure, tools and techniques and investigation. The contents and subtitles of this chapter need not be standardised since the study may employ different methods and approaches.

2 Data analysis and Results- After methodology the next chapter deals with data analysis and interpretation .This is usually the longest section of the dissertation and should contain the analysis plan ,findings, statistical measures employed, confidence interval, level of significance etc. Present the data wherever possible in the form of a) Graphics-histogram, bar diagram, pie chart, frequency polygon. b) Illustrations. The hypotheses also may be tested in this chapter. For a qualitative study testing of hypotheses is not applicable

Discussion/Inferences/Summary and Conclusion

The discussion should contain the relationships and generalizations shown by the results and show agreement or contrast with previously published work, as well as the rationale for your conclusions. This section should also state the limitations of the work and indicate the scope for further work.