COURSE OUTLINE FOR CLASS XII: THEORY
(TOTAL PERIODS: 120)

UNIT I : WELCOME TO THE WORLD OF CCT (TOTAL PERIODS: 12)

1.1 : EXPANDING WORLD OF CCT : CAREER OPPORTUNITIES

- Commerce
- Industry
- Medicine
- Scientific research
- Governance
- Entertainment
- Other fields

1.2 : SOCIAL, ETHICAL AND LEGAL MATTERS

- Effects on the way we:
  - Work
  - Socialise
  - Operate in other areas
- Cyber crime
- Prevention of crime
  - Cyber law: Indian IT Act
- Intellectual property
  - Software piracy
  - Plagiarism
  - Copyright and Patent
- Software licensing
  - Proprietary software
  - Free and Open source software
- Indian initiatives in open source software

UNIT II : WORKPLACE PRODUCTIVITY TOOLS (TOTAL PERIODS: 32)

2.1 : ELECTRONIC DATABASES

- Need for data in daily life
- Organising Data for easy retrieval and making meaning
- Drawing interpretation from tables, graphs maps and pie- charts
- Database as a back-end data container
- DBMS
- Creating, populating and managing databases
- Querying a database.
- SQL and its applications.
- Need for very large databases
- Constructing relationships
- Creating, populating & managing relational databases
- Querying relational databases.
- Database applications
  - Web applications: web forms and their interaction with databases
  - Desktop application: applications interfaces and their interaction with databases
- Security concerns & safeguarding data.

2.2 : WORKING WITH MULTIMEDIA TOOLS

- Introduction to multimedia
- Basics of multimedia
- Applications of multimedia (presentations, product description, Instruction, games)
- Installation of multimedia software
- Capturing and manipulation of image and sound
- Animation tools
- Graphics Techniques
- Sound Techniques
- Real life applications of multimedia

UNIT III : COMMUNICATION CONCEPTS AND SKILLS (TOTAL PERIODS: 16)

3.1 : COMPUTER NETWORKS

- Need for Networking
- Types of Networks (LAN, WAN)
- Network topology (Star, Ring, Bus)
- Establishing networks
  - Hardware
    - Wired: Physical media that build up network
      - Cables (twisted pair, coaxial cable, optical fiber cable)
      - Network Cards
      - Switches (hub switch, packet switching)
      - Ports
    - Wireless (Infrared, Microwaves, Radio waves), Bluetooth, Wi- Fi(WLAN)
  - Protocols (TCP/IP, HTTP, FTP)
  - Software (servers like print, mail, firewall, web server, etc.)
- Applications (computer telephony, teleconferencing, instant messaging
- Testing, troubleshooting and administering networks

3.2: NETWORK SECURITY

NETWORK SECURITY

- Risk assessment and security measures
  - Assets and types (data, applications, system and network)
- Security threats and attacks (passive, active); types and effects (e.g. Identity theft, denial of services, computer virus etc.)
- Security issues and security measures (Firewalls, encryption/decryption)
- Prevention

UNIT IV : WEB PUBLISHING TECHNOLOGIES (TOTAL PERIODS: 36)

4.1 : DYNAMIC WEBSITES

- Database Connectivity and Dynamic WebPages.
- Functionalities of Dynamic WebPages.
- Querying the database; Request and retrieval of information; Structured Query Language (SQL).
- Technologies for dynamic pages – ASP/ASPX, PHP, JSP, etc.
- Case study of popular dynamic sites.
- Building Dynamic pages; Forms, queries and connections.

4.2 : APPLICATIONS OF DYNAMIC WEBSITES

Features, technologies, scope and emerging trends of:

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- Feature rich web sites
- Online Dictionaries and Encyclopedias
- Banking and e-commerce applications
- ERP, CRM and other business management applications
- Content and Learning Management Systems
- Social networking, blogs and wikis

UNIT V : TEAMWORK AND WEB-BASED COLLABORATION TOOLS (TOTAL PERIODS: (16)

5.1 : CROSS CULTURAL COLLABORATION

- Globalisation
- Cross cultural collaboration
- Possibilities and hurdles
- Bridging Digital Divide
- Scope for international collaboration

5.2 : WEB-BASED COLLABORATION TOOLS

- Social networking tools
- Language translation tools
- E-collaboration utilities and services

UNIT VI : EMERGING TECHNOLOGIES (TOTAL PERIODS: 8)

6.1 : COMPUTER-CONTROLLED DEVICES

- Introduction to Robotics
- Historical perspective
- Degrees of freedom
- Characteristics and anatomy of a robot
- Emotional robots
- Robots in use
- Challenges to robotics
- Intelligent Devices
- Machine Intelligence and Machine Learning

6.2 : EMERGING TRENDS AND ADVANCES

- Mobile computing
- Bioinformatics
- Biometrics
- Speech recognition
- Computer vision
- Nanotechnology
- Green computing

PRACTICALS: Class XII

(TOTAL PERIODS 80:)

Practical Examination: 30 Marks Time: 3 HOURS

1. **Hands on Experience:** (15 marks)

(a) Using SQL commands design, develop and use a RDBMS.

- Creating Table using constraints (NULL, PRIMARY).
- Deleting & modifying Table.
- Inserting values in Table.
- Deleting & Updating records in Table.
- Generating Queries on single/ multiple table/s using clauses like - ORDER BY, WHERE, GROUP BY, HAVING, DISTINCT etc.
- Generating Query statements using functions like – SUM, COUNT, MIN, MAX, AVG, etc.

(b) Applications using Multimedia Tools

- Creating a poster on any topic
- Creating a movie on any topic, which should have background music and some animation.
- Creating a greeting card on any topic
- Creating web pages
- Integrating multimedia features in web pages

(c) Make blog on a theme e.g. Green Technology, organize an audio/video chat using free blog service.

2. **Project Work** (5 marks)

- A dynamic web site to be developed using database, web server, programming language e.g. Library management System, e-Commerce, MIS, social networking etc.
- Case study of a dynamic website

3. **Practical File should contain:** (5 marks)

- Print of 15 SQL commands with output
- Documentation of design of the dynamic web site
- Process documentation of development of Blog

4. **Viva-Voce** (5 marks)

Viva will be taken from the syllabus covered in class XII and project work.