



**POLYTECHNIC COMPUTER SCIENCE SECOND
YEAR SYLLABUS
SESSION 2013-14
DETAILED SYLLABUS
SEMESTER III**



PROGRAMMING AND PROBLEM SOLVING THROUGH 'C' CODE DCS 301

Introduction:

'C' is system programming language and also structured programming language, In 'C' programming language we consider various syntax used in programming. By having good knowledge of 'C', students can write modular application and system programs. 'C' is mainly used in software developments, projects involving compiler design, operating system design, system software etc. By acquiring a sound knowledge of 'C' students will be able to understand the concept of all the application areas.

Students of computer science diploma course are expected to gain adequate knowledge of numerical method and computation, optimization techniques. Numerical Methods and Techniques are widely useful in the various problems solving in Scientific and Engineering application optimization techniques are essential in industry in project management, inventory system and resources management. Hence this course is introduced to teach the students, the above concepts and also learn about the application of the same to various problems solving. Computer programs should also be developed for solving the numerical problems by way of introducing the algorithms and programming using 'C'.

Theory

Unit I

Introduction: Scope of 'C' Language, Distinction and similarities with other HLLs, Special features and Application areas, **Elements of 'C':** Character set, Key words, Data types, Constants and Variables, Operators: unary, binary, ternary, Operator precedence

Console Input-Output: Types of I-O, Console I-O, Unformatted console I-O: getchar(), putchar(), gets(), puts(), getch(), getche(), Formatted I-O: scanf(), printf()

Control Flow: Statements and blocks, if, switch, Loops: for, while, do-while, goto and labels, break, continue, exit, Nesting control statements

Unit II

Arrays and Function: Basic concepts, Memory representation, One dimensional array, Two dimensional array, Three dimensional array, **Functions:** Basic concepts, Declaration and prototypes, Calling, Arguments, Scope rules, Recursion, Storage classes types, Library of functions: math, string, system

Unit III

Pointers: Basic concepts, &, * operator, Pointer expression: assignment, arithmetic, comparison, Dynamic memory allocation, Pointer v/s Arrays, Array of pointers, Pointer v/s Functions

Unit IV



Structure, Union and Enumerated Data Types: Basic concepts, Declaration and memory map, Elements of structures, Structure v/s array, Structure v/s function, Union, Enumerated data types : typedef, enum, Self-referential structures, Low Level Bitwise Operators: & , | , ^

File Handling: Types of files, File organization, Opening, reading, writing, closing, Text and binary file.

Unit V

Numerical Methods: Numerical Integration-Simpson's 1/3 rule, Simpson's 3/8 rule, Matrix Operation-Matrix Inverse by Gauss – Elimination Method, Matrix Inverse by Gauss – Jordan Method, Matrix Addition, Subtraction, Multiplication

Reference Books:

- | | |
|---------------------------------------|----------------------------------|
| 1. Application Programming in C R.S. | Salaria, Khanna Pub. House. |
| 2. Programming with 'C' | Schaum's Series, TMH |
| 3. 'C' Programming | E.Balguru Swami, TMH |
| 4. 'C' Programming | Kernighan & Ritchie, TMH |
| 5. Let us 'C' | Yashwant Kanetkar, BPB |
| 6. Computer Oriented Numerical Method | R.S. Salaria, Khanna Pub. House. |

COMPUTER SYSTEM ARCHITECTURE CODE DCS 302

Introduction:

The aim of this course is to provide adequate knowledge about computer hardware. In this course student are taught about evolution of the computer (how computer technology developed from the early days) CPU (Central processing unit) architecture, Memory management, File organization, and other peripherals. By acquiring adequate knowledge of this subject student may be able to understand the hardware functioning of the computer and also get an over all idea of the computer system organization. After completing this course, the student will be able to undertake maintenance and repair tasks of computer hardware at IC level.

Theory

Unit I

Overview of Computer Organization: Evolution of computer, Von Neumann architecture,, Computer generations, Microprocessors and micro-computers design methodology

Basic Computer Organization: Instruction codes, Computer Instructions, Timing and Control, Execution of instructions, I/O and interrupt



Unit II

Central Processor Organization: Processor Bus organization, ALU : Simple and floating point, Stack Organisation, Instruction formats modes, Addressing schemes, Data transfer and manipulation, Program control

Arithmetic Processor Organization: Comparison and subtraction of unsigned binary numbers, Addition and subtraction Algorithm, Multiplication and division Algorithms,, Floating point operations.

Unit III

Input / Output Organization: Peripheral devices, I/O processors, DMA, Interrupt handling, Data communication, Multiprocessor organizations

Memory Organization: Concept of primary and secondary memory, Memory hierarchy, Cache memory, Associative memory (CAM), Virtual memory concept, Memory management unit

Unit IV

Introduction to Parallel Processing: Flynn's Classification, Pipelining, Vector Processor, Parallel Processors

Unit V

Register and Micro -Operations: Register, Register transfer, Arithmetic micro operations, Logic micro operations, Shift micro operations, Control functions.

Reference Books:

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|--|---------------------------------|
| 1. Computer System Architecture | Morris Mano, PHI |
| 2. Structured Computer Organization | Tanenbaum (PHI) |
| 3. Computer Organization and Architecture | Stallings (PHI) |
| 4. Computer Architecture and Organisation | John P. Hayes |
| 5. Advanced Computer Architecture | Rajeev Chopra, Vikas Pub. House |
| 6. Computer Organization and Design | Pal Choudhary (PHI) |
| 7. Introduction to Digital Computer Design | V. Rajaraman |

OPERATING SYSTEM PRINCIPLES CODE DCS 303

Introduction:

This course is aimed at teaching the basic concepts of operating system principles, Memory management, job scheduling, multiprogramming, concurrent device operations deadlocks, buffer management etc.



Theory

Unit I

Introduction: What is an operating System, Mainframe, Desktop & Multi processor, Distributed System, Real time Systems, Operating System Services

Unit II

Process Management and CPU Scheduling: Process Concept, Process Scheduling, Concept of Threads & Multithreading, Basic Complets – CPU/IU burst, CPU Scheduler, Preemptive scheduling dispatcher, Scheduling Criteria, Scheduling Algos : FCFS, SJF, Priority, Round Robin

Unit III

Deadlocks: What is Deadlock ?, Necessary Conditions for deadlock, Resource allocation graph, Deadlock prevention, Deadlock avoidance – Banker's Algo, Deadlock Detection wait for graph and detection algorithm, Deadlock recovery

Unit IV

Memory Management: Structure of computer memory, Logical versus physical address space, Contiguous memory allocation and Fragmentation, Concept of Paging: Basic method & h/w support, Concept of segmentation: Basic Method & h/w support

Virtual Memory: Concept of Virtual memory, Concept of Demand Paging, Page replacement Algorithms: FIFO, Optimal, LRU, Allocation Algorithms: equal & proportional allocation, Thrashing: Cause and Solution (working set model)

Unit V

File System: File concept, File Attributes, File Operations, File Types, File Access: Sequential and Direct, Allocation Methods- Contiguous Allocation, Linked Allocation, Indexed Allocation

Unit VI

Distributed Operating System (DOS): Introduction, Hardware Concept: Multiprocessor and Multicomputer Systems, Software Concept: Network File System (NFS), Network Operating System (NOS) versus DOS, Design Issues: Transparency, Flexibility, Reliability, Performance, and Scalability

Reference Books:

1. Operating System Silber
2. Operating System
3. Operating System

- Schaltz, Galvin, Gagne ,
Tannenbaum.
Godebole



4. Operating System
5. Distributed Operating System

Stallings
Tannenbaum

BASICS OF ELECTRONIC DEVICES AND CIRCUITS CODE DCS 304

Introduction:

Today is the day of electronics. This subject covers the basic concept of electronics for engineers; this subject is foundation of electronics which helps the student to study the other subject.

Theory

Unit I

Semiconductor and PN Junction: Metal, non metals and semiconductors and their Energy Band Diagram, Intrinsic and Extrinsic Semiconductors, Effect of temperature on extrinsic semiconductor, Energy band diagram of extrinsic semiconductor, Drift and diffusion current, Hall Effect, P-N Junction Diode-Space charge region, Barrier potential and effect of temperature, Energy band diagram, Biasing of diode, V-I characteristics, Static and dynamic resistance, Transition and diffusion capacitance, Zener and Avalanche breakdown, Working, characteristics and application of- Zener diode, Varactor diode, Photo diode, Light emitting diode (LED), Photo conductors, Cds photo conductive cells and photo voltaic cell.

Unit II

Bipolar Junction Transistor (BJT): Constructional details of PNP and NPN transistors, Working of a transistor-Charge transport phenomenon, Transistor amplifying action, Relation between different currents in a transistor, Simple problems, Configuration of transistor (CB, CE and CC), Behavior of BJT in Active, Cut off and Saturation regions, Transistor as a switch, Transistor as an amplifier

Unit III

Transistor Biasing and Bias Stability: D.C. and A.C. Load line., Operating point and its stability, Factors affecting bias stability, Stability factors, Bias stabilization, Calculation of operating point and stability factor for, Fixed Bias Circuit., Collector to base biasing, Voltage Divider biasing (Self bias), Bias Compensation techniques using-Diode., Thermistor and Sensistor., Thermal stability and Thermal runaway

Field Effect Transistor: Construction, operation and characteristics of JFET , E and D MOSFET, Biasing of FET, Small signal model of JFET, Terminology used with JFET, Precaution for handling of MOSFETs



Unit IV

Rectifiers: Working of rectifiers- Half wave rectifier, Centre tap full wave rectifier, Bridge rectifier, Analysis of rectifiers (for all type)- Calculations for average and RMS values, PIV of diodes, Ripple factor, Regulation and efficiency, Calculation of ripple factor and working of following filters- Capacitance filter, Inductance filter, L-C and π (Pie) filters, Voltage Multipliers

Unit V

Power Supplies & Sensors: SMPS, UPS, Inverter, Thermocouple, Pressure Gauge, Strain Gauge, Displacement Sensor (LVDT, RVDT)

Reference Books:

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|------------------------------------|------------------------------|
| 1. Electronic Devices & Circuits | Millman & Halkias, MH |
| 2. Electronic Devices & Circuits | V. K. Mehta, S. Chand |
| 3. Electronic Devices & Circuits | A.Mottershed PHI |
| 4. Industrial Electronics A.K. | Khatri, CBH, Jaipur |
| 5. Electronic Devices & Circuits | Sanjeev Gupta, Dhanpat Rai, |
| 6. Electronic Devices & Circuits | Floyd, Pearson Education |
| 7. Electronic Devices & Circuits | Boylestad, Pearson Education |
| 8. Electronic Devices & Circuits | J.P. Gupta, Kataria & Sons |
| 9. Industrial Electronic & Control | Paul, PHI |

BASICS OF DIGITAL ELECTRONICS CODE DCS 305

Introduction:

Basic digital electronics is the requirement of modern computer, microprocessor and digital communication systems. On account of reliability and accuracy digital electronic systems are replacing conventional analog systems. A diploma pass out having knowledge of digital system will be useful to the industries.

Theory

Unit I

Introduction: Digital signal and its representation, Advantages of digital techniques

Number System: Decimal, binary, octal and hexa-decimal number system, Conversion of a number from one system to another system, Binary addition, subtraction and multiplication, Representation of positive and negative numbers, 1's complement and 2's complement,



Subtraction using 2's complement, Parity bit, Binary codes (Gray, Excess -3, Hamming codes), ASCII code, Floating point number

Unit II

Logic Gates & Families: Introduction, Symbol and truth table of NOT, AND, OR, NAND, NOR, EX-OR and EX-NOR gates, Universal gates, Positive, negative and tristate logic, Classification of digital ICs, Characteristics of digital ICs.

Boolean Algebra: Historical review - logical statements, logical constants and variables, truth table, Boolean operators, Postulates of Boolean algebra, Laws of Boolean algebra, Duality theorem, De' Morgan's theorem, Simplification of Boolean expressions, Verification of Boolean expressions using truth table

Unit III

Minimization Techniques (K-Mapping): Representation of Boolean expression - min. and max. Term SOP, POS, Conversion of truth tables in POS and SOP form, Karnaugh map upto 4 variables - implication of logic function with and without don't care conditions, Realization of logic diagrams using NAND/NAND, NOR/NOR gate

Unit IV

Combinational Logic Design: Binary half and full adder, Binary half and full subtractor, Binary serial, parallel and BCD adder, Parity bit generator and checker, Binary comparator, Multiplexer, 4 to 1 multiplexer, 16 to 1 multiplexer, Demultiplexer-1 to 4 Demultiplexer, 1 to 16 Demultiplexer, Encoder-Decimal to BCD, Decoder-BCD to Decimal, BCD to seven segment

Unit V

Sequential Systems: Introduction, Symbol, logic circuit, truth table of R-S, J-K, M/S J-K,D,T flip-flops, Edge and level triggering, Shift registers-Left, right and bi-direction, Series and parallel, Universal shift register, Asynchronous and synchronous counters - up, down and up-down, Mod counters - Mod 5, Mod 9, decade counter, Ring counters, Johnson counter, Programmable counters, Use of shift register for simple binary multiplication and division.

Reference Books:

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|--|-----------------------------|
| 1. Digital Principles & Applications | Malvino Leach., TMH |
| 2. Integrated Electronics | Millman & Halkias, M. Hill |
| 3. Digital Electronics | T.C. Bartee |
| 4. Digital Electronics Practice Using IC's | R.P. Jain. TMH |
| 5. Modern Digital Electronics | R.P. Jain, TMH |
| 6. Digital Circuit & Design | S. Salivahanan, Vikash Pub. |
| 7. Digital Intregrated Circuit | K.R. Botker |
| 8. Digital Design | Floyd |
| 9. Digital Logic Design | Morris Mano., PH |



MANAGEMENT-I CODE DIM 306

Introduction:

This subject will introduce the students about how to set up a small-scale industry. The subject includes the procedure for how to select, proceed and start the SSI, which also involves a concrete market survey report and project formulation. To achieve the target and goals in an organisation it is essential to co-ordinate the entire system. For this purpose the knowledge of principles of management, human resources development, material management and financial management is required.

Theory

Unit I

Entrepreneurship: Role of entrepreneurship and its advantage, Classification of industries (based on scale), Classification of industries (based on type), New industrial policy, M.R.T.P. act, Product identification/ selection, Site selection, Plant layout, Institutional support needed, Pre-market survey

Unit II

Entrepreneurship Support System: Role of District Industries Centre in setting up industry, Function of NSIC, SISI, NISIET, NRDC, SSIC, SIDO, NMTC, KVIC, RSMDC, Role of state finance corporation, state electricity board, pollution control board, RAJCON, BIS, I.S.O. etc.

Unit III

Principles of Management: Management, administration and organisation, difference between them, Scientific management: Meaning, characteristics, object and advantage: Taylor's scientific management – Fayol's principles of management, functions of management, Types of

Raw Material Management: Allotment of iron and steel, coke/ coal, Allotment of other indigenous raw material from NSIC, Allotment of imported raw material and parts

Unit IV

Marketing Facilities: Supply of product to state govt, to defence, to railways, to CSPO, to CSD, Participation in international exhibition and fairs, trade centres, state emporium and departmental stores, Quality consciousness and its effect on product sales

Marketing Management: Concept of Marketing, Problems of Marketing, Pricing policy, Distribution channels and methods of marketing

Unit V



Setting up SSI: Registration of SSI, Allotment of land by RIICO, Preparation of project report, Structure of organization, Building construction, Establishment of machines

Financial Sources for SSI: Various institutions providing loans for industries, various types of loans, Subsidies

Reference Books:

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|--|---------------------------|
| 1. Hand Book of Small Scale Industry | P.M. Bhandari |
| 2. Hand Book on Entrepreneurship Development | O.P. Harkut |
| 3. Entrepreneurial Development | S.S. Khanka |
| 4. Statistical Quality Control | Mahohar Mahajan |
| 5. ISO: 9000 Quality System | S. Dalela |
| 6. Industrial Management | V.K. Sharma & O.P. Harkut |
| 7. Industrial Engg. & Management | O.P. Khanana |
| 8. Industrial Engg. & Management | T.R. Banga |

PROGRAMMING AND PROBLEM SOLVING THROUGH 'C' PRACTICAL CODE DCS 307

1. Problems based on arithmetic expression, fixed mode arithmetic
2. Problems based on conditional statements and control structures.
3. Problems based on arrays (1-D, 2-D), functions, pointers, files
4. Problems based on string and character manipulation.
5. Problems based on Numerical Methods using 'C' language

BASICS OF DIGITAL ELECTRONICS PRACTICAL CODE DCS 308

1. Verify the truth tables of NOT, AND, OR, NAND, NOR, EX-OR, EX-NOR gates
2. Design a NOT, AND, OR, EX-OR, EX-NOR gates using universal gates
3. Design a binary half and full adder
4. Design a binary half and full subtractor
5. Study of BCD to 7 segment decoder
6. Verify the truth table of RS, D, J-K, M/S J-K,D,T flip-flops.
7. Study of asynchronous binary ripple up, down and up-down and different mod counters
8. Study of synchronous counters
9. Study of decade counter
11. Study of programmable counter
12. Study of a shift register using flip flops
13. Study of ring counter using flip flops



**POLYTECHNIC COMPUTER SCIENCE SECOND
YEAR SYLLABUS
SESSION 2013-14**

**DETAILED SYLLABUS
SEMESTER IV**



DATA COMMUNICATION

CODE DCS 401

Introduction:

For the transmission and reception of signals in industry and domestic life the basic knowledge of communication engineering is essential. The study of the subject provides the basic knowledge of various modulations, demodulation technique which further provide the fundamentals to understand the operation of communication systems. Detailed knowledge of radio receiver is also included in the syllabus.

Theory

Unit I

Introduction: Data Communication: Model and Components, Computer Networks, Line Configurations, Topology, Transmission modes, Communication Protocol: Layered Architecture, Reference Models : OSI and TCP/IP

Unit II

Signals and Transmission: Analog and Digital Forms, Analog Signals : Amplitude, Period and Frequency, Phase, Spectrum and bandwidth, Digital Signals : Bit Interval and Bit Rate, Digital Data Transmission : Parallel and Serial, Asynchronous and Synchronous, Modems

Unit III

Multiplexing and Communication Hardware: FDM and TDM, Transmission Media: Guided & Unguided media, Performance factors, Network devices: Repeaters, Bridges, Switches, Routers and Gateways

Unit IV

Data Link Layer: Introduction, Flow control & Error control, Types of errors : Single bit & burst errors, Error Detection & Correction-VRC, LRC, CRC, Checksum, Hamming Code, Flow control & error control protocols- Stop & Wait, Sliding window, ARQ, HDLC, Local Area Networks : Introduction to Ethernet, Token bus, Token Ring & FDDI.

Unit V

Switching and Frame Relay: Circuit Switching, Packet Switching : Datagram & Virtual Circuit approach, Introduction to Frame relay : Its role, advantages & disadvantages., Frame relay operation, Congestion Control : BECN, FECN, Leaky Bucket Algorithm.



Reference Books:

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|--------------------------------------|---------------------------------|
| 1. Data Communications & Networking | Behrouz A. Forouzan, TMH |
| 2. Data & Computer Communication | William Stallings, PHI |
| 3. Data Communication & Computer N/W | Sanjay Pahuja, Std. Publication |
| 4. Data Communication and Networks | Godbole, TMH |

DATA BASE MANAGEMENT SYSTEMS CODE DCS 402

Introduction:

This course objective is to expose the students to the theoretical concepts of introduction to data base, physical and logical data base, schema design, study of entity, rational diagram, different type of data base modules, also involves the principle of designing relational data bases, normalisation process, storing and retrieval of data, securities, features of locking.

An elementary introduction to the distributed data bases will be covered apart from this the students will be completely exposed to the practical applications of dbase III, development of application software by getting exposures to the commands, program development, After completion of the course the students will achieve full competence in the area of application software development using data base.

Theory

Unit I

An overview of database management system: Need for DBMS, Components of DBMS, Applications of DBMS, Advantage of DBMS, Database system versus file system, Disadvantages of DBMS, Database System Concepts and Architecture, Application Architecture of DBMS- Two-Tier Architecture, Three-Tier Architecture, Database Models- Hierarchical Database Model, Network Database Model, Relational Database Model, Object-Oriented Database Model, Schema and Instances, Data Independence-Physical Data Independence, Logical Data Independence, Database Language and Interface, Overall Database Structure

Unit II

Data Modeling Using the E-R Model: E-R Model concepts, Notations of E-R Diagram, Mapping Constraints-One-to-one, One-to-Many, Many-to-One, Many-to-many, Keys-Super key, Candidate Key, Primary key, Composite key, Foreign key, Alternate key, Secondary key, Examples of E-R Diagrams

Relational Data Model and Language: Introduction, Properties of Relational Tables, Differences between DBMS and RDBMS, Codd's Rules of RDBMS, Integrity Constraints-Entity Integrity Constraints, Referential Integrity Constraints, Domain Integrity Constraints, Query Language- Relational Algebra, Relational Calculus



Unit III

Normalization: Normalization Concepts, Functional Dependencies, Lossless/Lossy Join Decomposition, Normal Forms- First Normal Form (1NF), Second Normal Form (2NF), Third Normal Form (3NF), Boyce-Codd Normal Form (BCNF), Multi-valued Dependency & Fourth normal Form, Join Dependency and Fifth Normal Form.

Unit IV

Transaction Processing Concepts: Transaction System, Properties of Transaction, Atomicity, Consistency, Isolation, Transaction States, Transaction Processing System, Recovery from Transaction Failures, Cascading Rollback, Recoverable Schedule, Log Based Recovery, Check Points, Backup Mechanism, Shadow Paging, Distributed Database, Homogeneous Distributed Database, Heterogeneous Distributed Database, The major Advantages of Distributed DBMS (DDBMS)

Unit V

Concurrency Control Techniques: Concurrency Control, Locking Techniques for Concurrency Control, Mode of Locking- Shared Lock, Exclusive Lock, The Two-phase Locking Protocol- Static (or Conservative) Two-phase Locking, Dynamic Two-phase Locking, Strict Two-phase Locking, Time Stamping Protocol for Concurrency Control

Reference Books:

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|--|--------------------------|
| 1. Database management System | P.K. Yadav, S.K. Kataria |
| An Introduction to Database System | Bipin C. Desai |
| 3. Fundamentals of Database Systems | R. Elmasri, S.B. Navathe |
| 4. An Introduction to Database management System (A-level) | Satish jain, |
| 5. Database Ssystems: Concepts, Design & Applications” | S.K. Singh, |

MICROPROCESSOR AND INTERFACING CODE DCS 403

Introduction:

The development of semiconductor technology has revolutionized the branch of electronics, starting from smallscale integrated circuit (SSI), where the complete C.P.U on a single chip which is known as microprocessor has changed the concept of automation as well as has proved itself as a very cost effective and reliable, alternate for automation. Due to this reason the computers and microprocessor based equipment's are invading into every walk of life. In advance technology of electronics field it must be necessary the knowledge of microprocessors and their application for the students of electronics, where the students exposed to the concept of microprocessor programming, interfacing and designing of microprocessor based system.



Theory

Unit I

Introduction: Microprocessor concept, Historical review of microprocessor development, Organization of a micro computer

Unit II

The 8085 Architecture: Internal block diagram, 8085 signals and their functions, Demultiplexing of buses, Pin configuration and logical diagram.

8085 Instructions and Programming: Instruction format- Mnemonics, Opcode and operand, Instruction length, Classification of instruction, Data transfer, Arithmetic, Logical, Branching, Machine control, Different interrupts of 8085 Microprocessor, Addressing modes, Stack operation and related instructions, Subroutine and related instructions, Machine and assembly language, Assembly language programming, Debugging of programs

Unit III

Memory and I/O System: Memory types, Memory organization, Basic concept of memory interfacing and I/O interfacing, Difference between peripheral I/O and memory mapped I/O

Unit IV

Instruction Execution and Timings: Instruction cycle - machine cycle, T-states, Fetch cycle, I/O read and write cycle, Interrupt acknowledge cycle, Bus idle cycle, DMA cycle, Machine cycle with wait states., Programs using delays and counters, Decoder & Encoder, Memory (RAM & ROM), PPI (8255), PIC (8259), USART (8251)

Unit V

Introduction to x 86 Family (8086): Segment register, Instruction Pointer, Index Register, Stack pointer, Flags, Programmable Registers (8/16 bit), Even & Odd Addressing Techniques, 20 bit address Generation

Reference Books:

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|---|---------------------|
| 1. Microprocessor Architecture, Programming & Application | Gaonkar |
| 2. Fundamentals of Microprocessors & Micro Computers | B.Ram |
| 3. Assembly Language Programming | A.Leventhal, Osborn |
| 4. Theory & Problems of Microprocessor Fundamentals | Tokhein |
| 5. Microprocessor & Peripheral Hand book | INTEL |
| 6. Computer Architecture & org. | J.P Hayes |
| 7. Digital Computer Fundamentals | T.C.Bartee |



INTERNET AND WEB TECHNOLOGIES

CODE DCS 404

Introduction:

Web programming will help you plan and develop well-designed web sites that combine effective navigation with the balanced use of graphics, text, and color. You will learn how to create web sites that let users easily and quickly access your information, regardless of browser type, connection speed, or computing platform.

Theory

Unit I

Internet Basics: Concept, Establishing Connectivity on Internet, Email: POP, SMTP, www, File Transfer, Telnet, IP Address, Brief overview of TCP/IP

Unit II

HTML: File Creation, Web Server, Web Client, Introduction to HTML- HTML Tags, Structure of HTML Programs, Heading, Titles and Footers, Text Formatting, Text Styles, Text Effects, Color and Backgrounds, Lists, Adding Graphics, Tables, Linking Documents, Frames

DHTML: Introduction to DHTML, Cascading Style sheets (CSS)- Font Attributes, Color, Background, Text and Border, List Attributes, Class- The ... Tag, Java Script Style Sheet, The <DIV> ... </DIV> Tag

Unit III

Java Script: Java script in web pages, Advantages of JavaScript, Writing JavaScript into HTML, Programming- Data types and Literals, Type casting, Variables, Arrays, Operators and Expressions, Conditional and Iterative Loops, Functions, Dialog Boxes, Cookies

Unit IV

CGI: Use of CGI, Working of CGI, Methods of Data Submission (GET and POST), Environment Variables, Process Form Information in CGI Program

Unit V

Perl: Basics of Perl, Strings, Scalar variables, Arrays, Hash Array, Arithmetic and Comparison Operators, Control Program Flow, Functions: String, Array, Mathematical and Time, File Handling- STDIN & STDOUT, Concept of Files and Directories, Open and Close Files, Reading and Writing Files

Reference Books:



1. Web Enabled Commercial Application Development
Using HTML, DHTML, Java Script
2. Internet and Web Technology
3. Web 101, Making the Network for you
4. Java Script
5. Dynamic HTML

Ivan Bayross,
Xavier, TMH
Wendy Lehnert, PEA
Flamange,
Goodman,

PC MAINTENANCE AND TROUBLE SHOOTING CODE DCS 405

Introduction:

The objective of this course is to introduce the students to the concepts of personal computer hardware its function and external interface methods by both theoretical and practical sessions. After the completion of the concept ideas, the student will be achieving the practical interfacing techniques and design methods of various devices to the personal computers. The students will achieve full competence of need of interfacing devices to the personal computers system and trouble shooting of the failure of devices.

Theory

Unit I

Computer Installation: Site Preparation- Air-Conditioning Requirements, False-Ceiling and False-flooring, Fire-Protection system, Electrical Earthing, Power Supply Requirements-Clean Power Supply, Power Supply Problems, Power Conditioning, Power Protection equipments- Spike Suppressor, CVT, UPS (Online and Off-line), SMPS

Unit II

Safety and Security Measures: Safety from Natural calamities, Theft and Fire Hazards, Data Security- Security from unauthorized users, Virus Protection Techniques, Firewalls, Folder Locking

Unit III

Working Principles of peripheral devices: Keyboard: Wired and wireless, Optical Mouse: Wired and Wireless, Scanner, OCR, OMR, MICR and BCR (Bar Code Reader), Printers: Dot-Matrix Printer (DMP), Inkjet Printer, Laser Printer, Modem: Dialup, Wired Broadband, Wireless Broadband, Digital Camera , Web-cam and Microphone (MIC), USB Flash memory (Pen drive)

Unit IV

Display Technologies-Thin Displays: Cathode Ray tube (CRT) Display, Liquid Crystal Display (LCD), Plasma Display



I/O Ports: Serial Port, Parallel Port, Game Port, USB Port, HDMI Port

Unit V

Hard Disk Drive (HDD): Working Principle, HDD Controller, HDD Interface types: SCSI, IDE, and SATA, USB External Hard disk, **Memory:** RAM, SDRAM, DDR, ROM

Optical Storage Devices: Optical Storage Media, CD-Drive-Installation and Operation, Digital Versatile Disc (DVD)-Technology

Windows Components and Tools: Windows Registry, Scandisk and Disk Defragmenter, Disk management, File Systems-FAT16, FAT32, and NTFS

Reference Books:

1. Computer Installation and Servicing
2. The Complete Reference PC Hardware
3. IBM PC and Clones
4. The Complete PC Upgrade and Maintenance Guide Mark

D Balasubramanian, TMH
Craig Zacker, John Rourke, TMH
B. Govindarajalu, TMH

Minasi, Wiley-India

MANAGEMENT-II CODE DIM 406

Introduction:

This subject will introduce the students about how to set up a small-scale industry. The subject includes the procedure for how to select, proceed and start the SSI, which also involves a concrete market survey report and project formulation. To achieve the target and goals in an organisation it is essential to co-ordinate the entire system. For this purpose the knowledge of principles of management, human resources development, material management and financial management is required.

Unit I

Contracts and Tenders: Type of contracts, Necessity of contract and tenders, Type of tenders, tendering procedure

Unit II

Project Report: Procedure of preparing a project report, Format of project report, Preparation of project report for some SSI items

ownership, sole trading, partnership, joint stock, co-operative and public enterprise, Types of organisation, different types and their charts., Importance of human relation professional ethics, Need for leadership, leadership qualities, Motivation

Unit III



Human Resources Development: Introduction, object and functions of human resource development department, Recruitment, sources and methods of selection, need for effective training, method of training, duties of supervisor / Formen, role of HRD in industries.

Unit IV

Wages and Incentives: Definition and requirements of good wage system methods of wage payment, Wage incentives - type of incentive, difference in wage incentive and bonus. incentive to supervisor.

Tax System and Insurance: Idea of income tax, sales tax, excise duty and custom duty, Industrial and fire insurance, procedure for industrial insurance.

Unit V

ISO: 9000 Series of Quality System: Definition of few important terms related to ISO quality system, Various models for quality assurance in ISO: 9000 series, Various elements of ISO: 9001 model (20 points), Benefits by becoming an ISO: 9000 company, Introduction to total quality management (TQM)

Unit VI

Labour Legislation and Pollution Control Acts: Industrial acts : factory act 1948, Workmen's compensation act 1923, Apprentices act 1961, Water pollution contract act 1974 and 1981, Air pollution contract act 1981, Environmental protection act 1986, Forest (animal conservation act 1972), Pollution control provisions in motor vehicle act.

Reference Books:

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|--|---------------------------|
| 1. Hand Book of Small Scale Industry | P.M. Bhandari |
| 2. Hand Book on Entrepreneurship Development | O.P. Harkut |
| 3. Entrepreneurial Development | S.S. Khanka |
| 4. Statistical Quality Control | Mahohar Mahajan |
| 5. ISO: 9000 Quality System | S. Dalela |
| 6. Industrial Management | V.K. Sharma & O.P. Harkut |
| 7. Industrial Engg. & Management | O.P. Khanana |
| 8. Industrial Engg. & Management | T.R. Banga |

MICROPROCESSOR AND INTERFACING PRACTICAL CODE DCS 407

1. Study of 8085 microprocessor kit
2. Addition of two 8 bit numbers with and without carry
3. Subtraction of two 8 bit numbers with and without borrow



4. Multiplication of two 8 bit number using successive addition and resistor shifting method
5. Program to find out square of a number.
6. Programs involving data arrays
 - 6.1 Generating odd numbers.
 - 6.2 Data transfer schemes
 - 6.3 Sorting of odd/even numbers.
 - 6.5 Finding largest and smallest numbers.
 - 6.6 Arrange data array in ascending / descending order
7. Programs using stack
8. Programs using subroutine.
9. Debugging of programs using single stepping on kit
10. Interfacing various Chips with 8085

INTERNET AND WEB TECHNOLOGIES PRACTICAL CODE DCS 408

1. Installation of Web server and Web browser
2. Practice for creating web pages/sites using HTML
3. Practice for creating web pages/sites using JavaScript
4. Practice for creating web pages/sites using DHTML
5. Practice for creating web pages/sites using CGI
6. Practice for creating web pages/sites using Perl

PC MAINTENANCE AND TROUBLE SHOOTING PRACTICAL CODE DCS 409

1. Study and Identify of various parts of a PC
2. Creating Disk Partitions and formatting them.
3. Installation of Windows Operating System.
4. Installation of Linux Operating system.
5. Installation of Operating Systems using VMWARE utility
6. Installation of Network Interface Card (NIC) or LAN card
7. Installation of Local Printer
8. Installation of Network Printer
9. Installation of Scanner
10. Use PING command to verify the TCP/IP connection between two nodes.
11. To login to remote Desktop using Team Viewer utility.
12. To prepare a Straight cable using standard color coding.
13. To prepare a Crossover cable using standard color coding.
14. To connect two PCs using Crossover cable without using a Switch or Router.
15. To use CD writing Software for Copying Files and Disc-to-Disc Copying.