(A) COURSE TITLE & CODE : PERSONALITY DEVELOPMENT, G – 305

TEACHING AND EXAMINATION SCHEME:

Sl. No.	Course Code	Name of Course	Teaching Scheme					Examination Scheme				Total Marks
								Theory		Practical		
			Pre-requisite	L	T	P	C	ET	PA	ET	PA	
1.	G- 305	Personality Development		3	2	-	5	75	25	-	-	100

DETAILED COURSE CONTENTS

CHAPTER-1.0 FACTORS INFLUENCING PERSONALITY DEVELOPMENT

- Internal factors
  - Knowledge
  - Values
  - Skills
  - Self confidence
- External factors
  - Communication
  - Dress
  - Personality traits

CHAPTER-2.0 SELF DEVELOPMENT

- Stages of learning
  - Information
  - Knowledge
  - Skills
  - Insight
  - Foresight
  - Wisdom
- SWOT Analysis
  - S & W – Internal
  - O & T – External
- Meditation
- Yoga
- Exercise

CHAPTER 3.0 NON-VERBAL LANGUAGE

- Touch
- Proximity & spatial behaviour
- Body movement & gestures
- Eye contact

- Appearance
- Voice
- Facial expression
- Silence

CHAPTER-4.0 MOTIVATION

- Commitment & willingness
  - Towards job
  - Towards higher authorities
  - Towards Tourism industry

CHAPTER-5.0 SOCIAL ETIQUETTES

- Etiquette & mannerisms
- Politeness & courtesy

CHAPTER-6.0 SELF IMPROVEMENT

- Grooming
- Dress code
- Posture
- Make-up
- Saree draping
- Jewellery
- Etiquette at the table

(G) SPECIFICATION TABLE SHOWING DISTRIBUTION OF MARKS AND HOURS

Sl. No.	Chapter No.	Chapter Title	Hours	Marks			
				K	C	A	Total Mark
1.	1.0	FACTORS INFLUENCING PERSONALITY DEVELOPMENT	15	6	6	2	14
2.	2.0	SELF DEVELOPMENT	12	4	3	5	12
3.	3.0	NON-VERBAL LANGUAGE	15	4	4	5	13
4.	4.0	MOTIVATION	12	4	4	4	12
5.	5.0	SOCIAL ETIQUETTES	13	4	3	5	12
6.	6.0	SELF IMPROVEMENT	13	4	3	5	12
Total			**80**	**26**	**23**	**26**	**75**

Abbreviations: K=Knowledge level, **C**= Comprehension Level, **A**=Application level

(A) COURSE TITLE AND CODE : ELECTRONICS WORKSHOP (CPE402)

(A) TEACHING AND EXAMINATION SCHEME:

Course Code	Name of Course	Teaching Scheme					Examination Scheme				Total Marks
							Theory		Practical		
		Pre-requisite	L	T	P	C	ET	PA	ET	PA	
CSE-402	Electronic Workshop	CSE-202	1	-	3	4	--	--	100	25	125

(F) DETAILED COURSE CONTENT

CHAPTER – 1.0 IDENTIFICATION AND USE OF DIFFERENT TOOLS AND ACCESSORIES USED IN MANUFACTURING OF ELECTRONIC CIRCUITS

- Different types of cutters.
- Nose pliers.
- Wire strippers
- Screw drivers
- Lead straightners
- Extracters
- Soldering Iron
- Desoldering Pump
- Crimping tool.

CHAPTER – 2 POWER SUPPLY, VOLTMETER AND AMETER

a) Study of regulated power supply.
   - Front panel controls and their functions.

b) Study and use of DC and AC voltmeter to measure DC and AC voltage.

c) Study and use of DC and AC ammeter to measure DC and AC current.

d) Study and use analog multi-meter to measure:
   - AC and DC voltage.
   - AC and DC current
   - Different resistor
   - Continuity testing

CHAPTER-3 STUDY AND USE DIGITAL MULTIMETER

Study and use digital multimeter to measure**:**

- AC and DC voltage
- AC and DC current
- Different resistor
- Continuity testing

CHAPTER – 4 STUDY OF FUNCTION GENERATOR.

- Front panel controls and there uses.
- Frequency changes and amplifies.

CHAPTER – 5 STUDY OF CRO

- Front panel control and their functions.
- Observing different waveforms.
- Measurement of amplitude and frequencies

CHAPTER - 6 STUDY OF DIFFERENT CABLES

- Co-axial cable
- Twisted pair cable
- Flat ribbon cable
- Fibre optic cable

CHAPTER - 7 STUDY OF DIFFERENT CONNECTORS

- BNC connector
- Banana connector
- Crocodile connector
- Male and female Dtype connector
- Flat cable connector
- Printed circuit connector
- UTP connector

CHAPTER - 8 STUDY OF DIFFERENT SWITCHES

- Toggle switches-SPST, SPDT,DPST,DPDT
- Thumb-wheel switches
- Rotary switches
- Push on/Push off switches
- Keyboard switches-mechanical, capacitive, membrane
- DIP switches

STUDY OF DIFFERENT DISPLAY DEVICES

- LED display
- Seven segment display
- LCD display

CHAPTER – 9 STUDY OF DIFFERENT DISPLAY DEVICES

- LED display
- Seven segment display
- LCD display

CHAPTER – 10 PREPARING CABLES AND BOARDS

- Prepare computer network cable (use different type of cable and connectors stated as in chapter 6 and 7).
- Study and use bread boards to implement simple electronic circuits using resistors/ capacitors/ diodes/transistors/switches/display devices.
- Prepare two simple electronic circuits using general purpose PCBs.
- Prepare two PCBs for simple electronic circuits

(A) COURSE TITLE AND CODE : DATA STRUCTURE (CPE403)

(B) TEACHING AND EXAMINATION SCHEME:

Code	Name of Course	Teaching Scheme					Examination Scheme				Total Marks
		Pre-req.	L	T	P	C	Theory		Practical		
							ET	PA	ET	PA	
CSE-403	Data Structure	CSE-406	3	1	2	6	75	25	50	25	175

(F) DETAILED COURSE CONTENT

CHAPTER – 1.0 INTRODUCTION TO DATA STRUCTURE

- General concept of
  - Data,
  - Data types,
  - Data variable,
  - Constants & their storage representation,
  - Data types of C,
- Data Structure and their types,
  - Linear data type,
  - Non- Linear data type,
  - Primitive data type,

Non primitive data type etc.

CHAPTER – 2.0 SEARCHING & SORTING

- Searching
  - Linear Search,
  - Binary Search,
  - Hash Search.
- Sorting
  - Bubble Sort,
  - Selection Sort,
  - Merge Sort,
  - Radix Sort,
  - Bucket Sort,
  - Heap Sort.

CHAPTER – 3 STRUCTURE & UNION

- Structure
  - Declaration and initialization of structure
  - Assigning values and accessing member data
  - Arrays as member data
  - Arrays of structure

- Union
  - Declaration of union
  - Characteristics of union
  - Similarity and differences of union with structure

CHAPTER – 4.0 STACKS

- Definitions & examples of stack,
- Primitive operations
  - Push,
  - Pop
- Overflow & underflow of stack.
- Representing Stacks in C as an array
- Applications of stack.
  - In-fix,
  - Post-fix,
  - Pre-fix,
- Converting in-fix to Post-fix and Pre-fix,
  Concept of recursion (with example Such as factorial, fibonacci sequence, multiplication of natural numbers).

CHAPTER – 5 QUEUES.

- Introduction to queues,
- Definition of Queue
- Concept of queues
  - Front,
  - Rear,
  - FIFO,
  - Overflow
  - Underflow.
- Operations on queue
  - Searching
  - Insertion,
  - Deletion.
- Types of queue
  - Priority queue,
  - Circular queue

CHAPTER – 6.0 LINKED LIST

- Introduction,
- Terminologies: Node, Address, Pointer, Information, Next, Null pointer, Empty list etc.
- Operations on list
  - Searching,
  - Insertion and
  - Deletion
- Types of lists
  - Linked list and
  - Circular list
- Array stacks, queues, implementation -using list.

CHAPTER – 7.0 TREES

- Introduction,
- Terminology (tree sub-tree, root leaf (node), left, right, parent, child, ancestor, descendant, brother, level, depth).
- Type of tree
  - Binary tree,
  - Height balanced trees and,
  - Weight balanced tree
- Operations on trees,
- Searching
  - Depth-first search and
  - Breadth-first search
- Traversing
  - Pre-order,
  - In-order and
  - Post-order
- Insertion,
- Deletion,

'C' representation of tree.

CHAPTER – 8 GRAPHS

- Introduction,
- Terminology: graph, node (vertices), arcs (edge), directed graph, in-degree, out-degree, adjacent, successor, predecessor, relation, weight, path, length
- Types of graphs
  - Directed graph and
  - Weighted graph and
  - Un-directed graph
- Operations on graphs
  - Finding length of path and
  - Finding shortest path
- Representation of graph using list, conversion of graph to tree.

(G) SPECIFICATION TABLE SHOWING DISTRIBUTION OF MARKS AND HOURS

S. No.	Chapter No.	Name of Chapter	Hours	Marks			
				K	C	A	Total Mark
1.	1.0	Introduction to data structure	2	1	2	1	4
2.	2.0	Searching & sorting	10	2	4	2	8
3.	3.0	Structure & Union	6	2	2	4	8
4.	4.0	Stacks	6	2	3	3	8
5.	5.0	Queues	10	2	3	3	8
6.	6.0	Linked list	10	3	5	4	12
7.	7.0	Trees	10	6	4	2	12
8.	8.0	Graphs	10	4	6	5	15
Total			**64**	**22**	**29**	**24**	**75**

Abbreviations: **K**=Knowledge level, **C**= Comprehension Level, **A**=Application level

(A) COURSE TITLE AND CODE : OPERATING SYSTEM (405)

(C) TEACHING AND EXAMINATION SCHEME

Code	Name of Course	Teaching Scheme					Examination Scheme				Total Marks
		Pre-req.	L	T	P	C	Theory		Practical		
							ET	PA	ET	PA	
CSE-405	Operating System	G-202	4	1	-	5	100	25	-	-	125

(F) DETAILED COURSE CONTENT

CHAPTER – 1.0 INTRODUCTION

- Introduction to an operating system.
- Evolution of operating systems.
  - Sequential processing.
  - Batch processing.
  - Multi programming
  - Real time.
  - Multi tasking
  - Multi threading.
- Multi programming operating system
  - Hardware requirements
  - I/O channels and Interrupt H/W
- Storage protection.

CHAPTER – 2 OPERATING SYSTEM SERVICES

- Types of service
- System calls
- Process and job control
- File manipulation
- Device management
- Information management

CHAPTER – 3 PROCESSES AND MULTITHREADING

- Process Concept
- Process Scheduling
- Operations on Processes
- Cooperating Processes
- Interprocess Communication
- **Communication in Client –Server Systems**
- **Multithreading Models**

CHAPTER – 4 SCHEDULING

- Basic Concept
  - I/O burst cycle, Scheduling queries, Scheduling preference criteria, First come first served, Shortest job first, Priority, Round Robin, Multiprocessor scheduling

CHAPTER – 5 MEMORY MANAGEMENT

- Basics of Memory Management
  - Bare machine, Resident monitor, Swapping, Multiple partition, Paging-Segmentation

CHAPTER – 6 I/O SYSTEMS & MASS STORAGE STRUCTURE

- **I/O systems**
  - I/O Hardware
  - Application I/O Interface
  - Kernel I/O Subsystem
  - Transforming I/O to Hardware Operations
  - STREAMS
  - Performance
- **Mass storage structure**
  - Disk Structure
  - Disk Scheduling
  - Disk Management

  Swap-Space Management

(G) SPECIFICATION TABLE SHOWING DISTRIBUTION OF MARKS AND HOURS

Chapter No.	Name of Chapter	Hours	Marks			
			K	C	A	Total Mark
9.0	Introduction	8	4	4	2	10
10.0	Operating System Services	10	4	8	2	14
11.0	Processes And Multithreading	8	4	6	2	12
12.0	Scheduling	14	4	8	4	16
13.0	Memory Management	14	5	7	4	16
14.0	File Systems	12	4	8	4	16
15.0	I/O Systems & Mass Storage Structure	14	5	6	5	16
Total:		80	30	47	23	100

Abbreviations: **K**=Knowledge level, **C**= Comprehension Level, **A**=Application level

(A) COURSE TITLE AND CODE : NETWORK ESSENTIALS (CPE 407)

(D) TEACHING AND EXAMINATION SCHEME:

Code	Name of Course	Teaching Scheme					Examination Scheme				Total Marks
		Pre-req.	L	T	P	C	Theory		Practical		
							ET	PA	ET	PA	
CSE-407	Network Essentials	G-202	3	2	1	6	100	50	25	-	175

(F) DETAILED COURSE CONTENT

CHAPTER – 1.0 NETWORKING BASICS

- Introduction to computer networks
- Network services
  Basic Connectivity, File Service, File Transfer Service, application and security
  service, Sharing of multimedia elements
- Models of Network Computing:
  - Centralized, Distributed, Collaborative Computing
- Application of computer networks.
  - Local Area Networks
  - Wide Area Networks
  - Metropolitan Area Networks.
- Network Architecture.
  Feature and applications of :
  - Peer to Peer Networks
  - Client Server Networks
  - Internets and Intranets

CHAPTER – 2.0 NETWORK TOPOLOGY

- Bus Topology
- Ring Topology
- Star Topology
- Mesh Topology

CHAPTER-3.0 PROTOCOLS

- TCP / IP Protocols.
  - ISO reference model vs. TCP/IP
  - IP addressing scheme
  - Sub netting
- Data Link Protocol.
  - CSMA Protocol
  - Persistent and Non Persistent CSMA.
  - CSMA with collision detection

CHAPTER – 4.0 DIGITAL COMMUNICATION

- Basic concepts, uses of channel, communication channels characteristics, modulators, de-modulators, synchronous & asynchronous modulators,
- Analog and digital communicators, Simplex, Half Duplex & Full Duplex Communications

CHAPTER – 5.0 COMMUNICATION MEDIA AND DEVICES

- Transmission Media and channels
  - Magnetic media
  - Twisted pair
  - Co-axial cable
  - Optical Fiber.
  - Line of site Transmission
  - Communication satellites
- Network Control Drivers
  - Hubs, Switches, Routers, Bridges, Repeaters, Gateways.

CHAPTER- 6.0 NETWORK REFERENCE MODELS AND PROTOCOLS

- OSI reference model of data communication:
  - Physical layer
  - Data Link layer
  - Network layer
  - Transport layer
  - Session layer
  - Presentation layer
  - Application layer
- CSMA Protocol
  - Persistent and Non Persistent CSMA.
  - CSMA with collision detection.
  - Collision Free Protocol.
- NetBUI Protocols.
- IPX / SPX Protocols.
- TCP / IP Protocols.
- IEEE Standards
- Data Link Protocol.
- Ethernet, Token Ring, FDI ArcNet Protocol

(G) SPECIFICATION TABLE SHOWING DISTRIBUTION OF MARKS AND HOURS

Chapter No.	Name of Chapter	Hours	Marks			
			K	C	A	Total Mark
16.0	Networking Basics	12	4	6	4	14
17.0	Network Topology	10	4	8	4	16
18.0	Protocols	14	4	8	4	16
19.0	Digital Communication	12	4	6	4	14
20.0	Communication Media And Devices	14	4	10	6	20
21.0	Network Reference Model And Protocols	18	4	10	6	20
	Total	80	24	48	28	100

Abbreviations: **K**=Knowledge level, **C**= Comprehension Level, **A**=Application level

(A) COURSE TITLE AND CODE : OBJECT ORIENTED PROGRAMMING IN C++ (CPE 505)

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(E) TEACHING AND EXAMINATION SCHEME

Course Code	Name of Course	Teaching Scheme					Examination Scheme				Total Marks
							Theory		Practical		
		Pre-requisite	L	T	P	C	ET	PA	ET	PA	
CSE-505	Object Orineted Programming in C++	CSE-406	2	1	3	6	75	25	50	25	175

(F) DETAILED COURSE CONTENT

CHAPTER – 1.0 INTRODUCTION TO OBJECT ORIENTED PROGRAMMING

- Introduction
  - Its need and requirements
  - Procedure–oriented programming versus Object-Oriented programming concept
  - Basic concepts of OOPs.
  - Object oriented languages.
- Beginning with C++
  - Concept and structure of C++ programming
- Introduction to structures & Union of C

CHAPTER – 2.0 OBJECTS AND CLASSES.

- Classes
  - Specifying a class and types of class
  - Defining and nesting member functions
  - Arrays within a class
- Objects
  - Creating objects
  - Memory allocation for objects
  - Static data and member function
  - Array of objects
  - Objects as function arguments

CHAPTER – 3.0 CONSTRUCTORS AND DESTRUCTUROS

- Constructors
  - Parameterized
  - Multiple
  - Constructor with detail argument
  - Dynamic
- Destructor
- Operator overloading and type conversion
  - Inline functions overloading
  - Overloading unary and binary operators
  - Rules for overloading operators

CHAPTER – 4.0 INHERITANCE

- Introduction
- Derived classes
- Member declaration: protected
- Types of inheritance
  - Single,
  - Multilevel,
  - Multiple,
  - Hierarchical,
  - Hybrid inheritance
- Virtual base classes
- Abstract classes
- Constructors in derived classes
- Member classes

CHAPTER – 5.0 POLYMORPHISM

- Introduction
  - Polymorphism in programming languages
  - Types of polymorphism
  - Polymorphic variables
- Overloading and overriding
- Virtual functions
- Static and dynamic binding

CHAPTER – 6.0 POINTERS IN C++

- **Concept of Pointers**
  - Pointer declaration
  - Pointer operator
  - Address operator,
  - Pointer expressions
  - Pointer Arithmetic.

- Pointers and Functions
  - Call by value
  - Call by reference
  - Pointer to functions
  - Passing function to another function

- Pointers in Arrays
  - Searching, Insertion and Deletion.

- Pointers To String
  - Searching, Insertion and Deletion
  - Finding length and comparison

- Pointers and objects
  - Pointers to objects
  - This pointer
  - Pointers to derived classes

Introduction to Structures and Unions

CHAPTER – 7.0 INTERNET TECHNOLOGY

I/O SYSTEM BASICS AND FILE PROCESSING

- I/O system Basics
  - The stream classes
  - Templates classes
  - Character based classes
  - Using manipulator to format I/O
- File Handling
  - File system Basics
  - Opening and closing a file
  - Reading and writing a character from a file using fputs, fgets, rewind(), ferror, erasing file

CHAPTER – 8.0 GRAPHICS IN C++

- Text mode graphics functions
  - Window function, cputs(), clrscr()
- Graphics mode graphics functions:
  - Initgraph, circle, closegraph
- Shapes
  - set colours, set lines styles, set fill style, flood fill
- Colours
  - Lines and Rectangle: Line(), Rectangle()
  - **Polygons and Inheritance, shape class, polygons**

(G) SPECIFICATION TABLE SHOWING DISTRIBUTION OF MARKS AND HOURS

S. No.	Chapter No.	Name of Chapter	Hours	Marks			
				K	C	A	Total Mark
9.	22.0	Introduction to object oriented programming	4	2	2	1	5
10.	23.0	Objects and classes	6	3	3	4	10
11.	24.0	Constructors and destructors	6	2	4	4	10
12.	25.0	Inheritance	6	4	4	2	10
13.	26.0	Polymorphism	6	4	2	4	10
14.	27.0	Pointers in C++	8	2	3	5	12
15.	28.0	I/O system basics and file processing	6	3	4	3	10
16.	29.0	Graphics in C++	6	3	3	4	8
Total			**48**				**75**

Abbreviations: **K**=Knowledge level, **C**= Comprehension Level, **A**=Application level

(H) SUGGESTED LIST OF EXPERIMENTS/ DEMONSTRATIONS/ TUTORIALS:

Hours 48 Marks: 50

- Any two simple C++ programs
- Any two C++ programs based on object and classes
- At least one C++ program based on each
  - Constructors and destructors
  - Overloading unary operator
  - Overloading binary operator
- C++ program based on each
  - Inheritance
  - Multiple Inheritance
- One C++ program based on
  - Polymorphism
  - Overloading
  - Overriding
- Some C++ program should be conducted on each of the following
  - 2 array sorting
  - String manipulation
  - Pointer to objects
  - Use of this pointer
  - Pointers to derived class
- At least two program based on file handling

- At least four C++ programs based on Graphics functions

(I) REFERENCE BOOKS

S.No.	Title	Edition Year of Publication	Author Publisher & Address
1.	C++ The Complete Reference	Ist Edition 2000	Schilt Tata McGraw-Hill Publishing Company Ltd. New Delhi
2.	Object Oriented Programming with C++.	Ist Edition 2000	Balagurusamy Tata McGraw-Hill Publishing Company Ltd.New Delhi
3.	Object Oriented Programming in Turbo C++	Ist.- Edition 2000	Lafore Robert Galgotia Publication
4.	Let Us C++	Latest	Yashwant Kanetkar BPB Publication
5.	Programming with C++	Ist - Edition 2000	D. Ravichandran Tata McGraw-Hill Publishing Company Ltd. New Delhi
6.	Programming with C++ made simple	Ist edition 2002	Dr. M.Kumar, Tata McGraw-Hill Publishing Company Ltd. New Delhi