

Post Graduate Diploma in Computer Application - PGDCA

Semester 1:	
Computer Fundamentals and Operating Systems	Introduction to computer hardware and software Operating system concepts and functions File management and basic system administration
Programming in C	Fundamentals of programming Data types, operators, and control structures Functions, arrays, and pointers in C
Data Structures	Introduction to data structures Arrays, linked lists, stacks, and queues Tree and graph data structures
Database Management Systems (DBMS)	Introduction to DBMS Relational database concepts SQL (Structured Query Language) and database design
Computer Networks	Basics of computer networking Network topologies and protocols Internet and intranet concepts
Semester 2:	
Object-Oriented Programming (OOP) with C++	Introduction to OOP Classes and objects Inheritance, polymorphism, and templates in C++
Data Communication and Networking	Data transmission and modulation Network layers and protocols (TCP/IP) Network security and wireless networks
Web Technologies	HTML, CSS, and JavaScript Web development tools and frameworks Building and hosting a website
Software Engineering	Software development life cycle (SDLC) Requirements analysis and software design Testing, maintenance, and project management
Operating System Concepts	Process management and scheduling Memory management and virtual memory File systems and I/O management

Semester 3:	
Java Programming	Introduction to Java Object-oriented programming in Java GUI programming with Swing
Database Management Systems (Advanced)	Advanced SQL concepts Database administration and security Introduction to NoSQL databases
Web Development (Advanced)	Server-side scripting (e.g., PHP) Database-driven web applications Web services and APIs
Software Testing and Quality Assurance	Testing methodologies and strategies Test planning and automation Quality assurance and quality control
Project Work	Development of a significant software project Project management and documentation Presentation and evaluation
Elective Modules (Choose one or more, depending on the program):	
Mobile App Development	Introduction to mobile app development Android or iOS app development Mobile app testing and deployment
Data Analytics and Business Intelligence	Data analysis tools and techniques Data visualization Business intelligence and reporting
Artificial Intelligence and Machine Learning	Basics of AI and ML Machine learning algorithms and applications Building AI/ML models
Cybersecurity	Introduction to cybersecurity Network security and ethical hacking Security policies and incident response