



DPG DEGREE COLLEGE

(Affiliated to MDU Rohtak)

Sector-34, Near Marble Market, Gurugram 122001

MCA- Program Specific outcomes listed as follows:-

PSO1:- To apply knowledge of computing fundamentals, computing specialization and domain knowledge for the

abstraction and conceptualization of computing models from defined problems and requirements.

PSO2:- To have the ability to understand and analyze a given real-world problem and propose feasible computing solutions.

Also analyze customer requirements, create high level design, implement and document robust and reliable software systems.

PSO3:- To transform complex business scenarios and contemporary issues into problems, investigate, understand and

propose integrated solutions using emerging technologies.

PSO4:- To use the latest technologies like IoT, AI, Machine Learning, Big Data Analytics, Cyber Security and modern

hardware and software tools necessary for innovative software solutions and to possess leadership and managerial skills with best professional ethical practices and social concern.

MCA- Program Outcomes listed as follows:-

PO1:- To master fundamental project management skills, concepts and techniques, set attainable objectives and ensure

positive results, meeting scope, time and budget constraints

PO2:- To recognize the need for self-motivation to engage in lifelong learning, the social, professional, cultural and ethical

issues involved in the use of computer technology and give them due consideration in developing software systems.

PO3:- To assess the need for innovation and initiate the process through entrepreneurship or otherwise and to work collaboratively as a member or leader in multidisciplinary teams.

PO4:- To select their career after acquiring necessary eligibility requirement and the skill-set.

COURSE OBJECTIVES & COURSE OUT COMES

S.N o.	COURSE OBJECTIVES	COURSE OUTCOMES
MCA- Ist SEMESTER		
1.	Paper:- Object Oriented Programming Using JAVA	
	<ol style="list-style-type: none"> 1. Understanding Java's libraries and basic object-oriented principles. 2. Using newly acquired concepts and creating different problem-solving strategies. 3. Creating real-time programmes with a database or file access and an event-driven graphical user interface. Introducing RMI and Servlets as examples of web technologies in Java. 	<p>By the end of the course the students will be able to:</p> <ol style="list-style-type: none"> 1. The capacity to become familiar with Java's fundamental object-oriented ideas. 2. Java interface and inheritance ideas can be used to overcome issues. 3. Real-world issues can be solved by recognizing simultaneous threads and exceptions and applying the proper solutions. 4. Applets and Swings are used for GUI design. 5. Create the proper back end support for an application that uses JDBC or file processing 6. Examine Generic classes and Collections interfaces, which aid in the use of various data structures to solve issues. 7. Create web-based solutions utilizing Servlets and RMI.

2.	Paper: Compiler Design	
	<ol style="list-style-type: none"> 1. To understand, design and implement various phases of compiler. 2. To extend the knowledge of parser by parsing LL parser and LR parser. 3. To understand optimization of codes and runtime environment. 	<p>By the end of the course the students will be able to:</p> <ol style="list-style-type: none"> 1. Elaborate concepts compilation process and apply in various fields of computer languages. 2. Explain the lexical and syntactical analysis phase of compilation. 3. Solve theoretical problems related to parsers and develop parsers. 4. Evaluate codes for generation of intermediate code and apply possible code optimizations. 5. Design and develop system programs as well as for compilers for varying needs.

3.	Paper: Computer Graphics & Multimedia	
	<ol style="list-style-type: none"> 1. To make the students understand graphics concepts and develop, design and implement two and three dimensional graphical structures using C/C++ and OpenGL. 2. To understand multimedia compression techniques and applications of multimedia. 	<p>After the completion of the course, students will be able to</p> <ol style="list-style-type: none"> 1. Understand basic of computer graphics, display devices and graphics standards. 2. Learn about graphics primitives and their importance. 3. Understand 2D transformations and representation of 3D objects. 4. Learn about 3D transformations, hidden surfaces and color models. 5. Understand about multimedia authoring and create a multimedia project using Flash/Blender multimedia software.
4.	Paper: Digital Design & Computer Architecture	

<ol style="list-style-type: none"> 1. Apply the principles of number system, binary codes and Boolean algebra to minimize logic expressions. 2. Develop K-maps to minimize and optimize logic functions up to 5 variables 3. Acquire knowledge about various logic gates and logic families and analyze basic circuits of these families 4. Explain the organization of basic computer , its design and the design of control unit. 5. Demonstrate the working of central processing unit and RISC and CISC Architecture. 6. Describe the operations and language f the register transfer, micro operations and input-output organization. 	<p>After the completion of the course, students will be able to</p> <ol style="list-style-type: none"> 1. Implement digital functions in the form a digital logic and perform binary arithmetic operations 2. Identify and implement commonly used sequential and combinational circuits 3. Basic computer design and developing 8086/8088 A/L programs for small applications 4. Implement CPU design and Input /Output organization 5. Understand advanced computer architectural aspects and parallel designs
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5.	Paper: Advance Data Structures Using C++/Java	
	<ol style="list-style-type: none"> 1. To provide the knowledge of basic data structures and their implementations. 2. To understand importance of data structures in context of writing efficient programs. 	<p>After the completion of the course, students will be able to</p> <ol style="list-style-type: none"> 1. To learn about analyzing and designing algorithms to solve a problem and learn to find the asymptotic efficiency of an algorithm. 2. To study about binary tree and its applications. 3. To learn advanced data structures such as balanced search trees and heap hash operations. 4. To learn about graphs & its algorithms such as 5. To study various graph processing algorithms and Algorithm Design techniques.

MCA IIND SEMESTER

Paper:- Advance Object Technology		
1.	<ol style="list-style-type: none"> 1. To understand the concepts of HyperText Markup Language and Cascading Style Sheets. 2. To learn JavaScript for creating dynamic websites. 3. To learn the operations perform on data among web applications using XML 4. To acquire knowledge on creation of software components using JAVA Beans. 5. To learn Server-Side Programming using Servlets and Java Server Pages. 6. To learn the creation of pure Dynamic Web Application using JDBC. 	<p>After the completion of the course, students will be able to</p> <ol style="list-style-type: none"> 1. Explain the use of DHTML and XML in data exchange. 2. Analyze and use various AWT controls and event handling for development of a Applet. 3. Use of Swing components for the web application development. 4. Develop applications using Servlets, parameter passing and concept of session maintenance. 5. Design and develop basic JSP applications.

2	Paper: Advance Database Systems & Data Warehouse	
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	<ol style="list-style-type: none"> 1. To provide a strong foundation in advanced database concepts from an industry perspective. 2. To covers advanced data modeling concepts like OOD Modeling and ORD Modeling 3. To learn query processing and transaction management concepts for object-relational database and distributed database. 4. Retrieve information from data stored in a relational database, perform data analysis, and generate reports. 5. Examine and evaluate database performance tuning, distributed database management systems, and data warehousing. 	<p>After the completion of the course, students will be able to</p> <ol style="list-style-type: none"> 1. Understand the difference between ER and EER model. 2. Understand the concepts of OODBMS and ORDBMS. 3. Know about parallel and distributed database and Client-Server architecture. 4. Understand Emerging database based on the types of data. 5. Know about the concepts of data warehouse, its types, architecture and schema.
3.	Paper: Operating Systems & Shell Programming	
	<ol style="list-style-type: none"> 1. To provide introduction to UNIX Operating System and its File System 2. To gain an understanding of important aspects related to the SHELL and the process 3. To develop the ability to formulate regular expressions and use them for pattern matching. 4. To provide a comprehensive introduction to SHELL programming, services and utilities. 	<p>After the completion of the course, students will be able to</p> <ol style="list-style-type: none"> 1. Understand basic concepts of Operating Systems and their structure. 2. Learn about concept of processes and process scheduling. 3. Understand about interprocess communication and role of semaphores. 4. Learn in detail about Deadlock, memory management and I/O management. 5. Understand Linux basics and Shell programming.
4.	Paper: Elective-I(Computer Networks & Distributed Systems)	

	<ol style="list-style-type: none"> 1. Students will be able to understand the concept of Computer networks and data communication. 2. Students will understand the network models: OSI & TCP/IP and their layer. Students will have good understanding of distributed system. 3. This course will help student to understand replication management, fault tolerance and security in Distributed system. 	<p>After the completion of the course, students will be able to</p> <ol style="list-style-type: none"> 1. Understand basic concepts data communication and computer networks. 2. Gain understanding about OSI model and TCP/IP. 3. Develop understanding about working of different layers of TCP/IP and OSI model. 4. Understand about concept Distributed Systems and Synchronization. 5. Learn about replication management, fault tolerance and security in Distributed Systems.
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5.	Paper: Elective-II(Cloud Computing)	
	<ol style="list-style-type: none"> 1. To learn about modern computer principles. 2. To describe the secured cloud environment and the virtualization paradigm. 3. To comprehend the principles and programming paradigms in a distributed and parallel computing environment. 4. To establish a private cloud computing environment and offer consumers a range of services. to provide the pupils a chance to learn about and gain some proficiency in several techniques 	<p>After the completion of the course, Students will be able to</p> <ol style="list-style-type: none"> 1. To investigate the various cloud computing service and deployment models. 2. Able to migrate, build VMs, and give devoted users QOS. 3. To investigate the options for delivering a secure cloud environment. 4. To being able to employ tools and methods for high performance computing environments when processing big amounts of data 5. To being able to choose the right tools, an open source cloud, and APIs to create a private cloud. 6. To satisfy required needs, create, implement, and assess a cloud-based system, procedure, element, or program.
MCA BRIDGE COURSE		
1.	Paper: Computer Fundamentals and Programming in C	

1. To become familiar with OS concepts and computing fundamentals.
2. To enhance working abilities using Internet, graphic design, and productivity technologies.
3. To learn the fundamentals of programming.
4. To use computation to solve problems.
5. To learn the basics of c programming.

After the completion of the course, students will be able to

1. Recognize the fundamentals of computers and the purpose of operating systems.
2. Learn about the Internet, computer networks, and the social effects of IT.
3. Learn about Word, Excel, and Power-Point, three PC software programmes.
4. Create a flowchart and an algorithm for straightforward tasks.
5. Create C applications utilizing all C features.



2.	Paper: C++ and Data Structures	
	<ol style="list-style-type: none"> 1. Students will be familiar with the concept of C++, its features, classes, objects etc. 2. Students will understand the concept of Data Structure. 3. Students will be well known to algorithms and its complexity. 4. Students will be familiar to Classification of data structure in detail like primitive, non primitive data structure, stacks, queues, trees, graphs, linked list. 	<p>After the completion of the course, students will be able to</p> <ol style="list-style-type: none"> 1. Understand concept of object oriented programming and its features. 2. Gain insights about C++ features and access specifiers. 3. Able to understand importance of polymorphism and inheritance. 4. Learn to analyze algorithms on basis of their performance. 5. Ability to use stack, queue and linked list data structures.
3.	Paper: Visual Basic & Database Systems	
	<ol style="list-style-type: none"> 1. Introduction to computer programming using VB 2. Emphasis on the fundamentals of structured design, development, testing, implementation, and documentation. 3. Includes language syntax, data and file structures, input/output devices, and files. Understand the basic concepts and the applications of database systems. 4. Master the basics of SQL and construct queries using SQL. 5. Understand the relational database design principles. 6. Familiar with the basic issues of transaction processing and concurrency control 	<p>After the completion of the course, students will be able to</p> <ol style="list-style-type: none"> 1. Understand model, components of computer and how it works. 2. Understand the concept of input and output devices of Computers in detail. 3. Understand RAM, ROM and their types in detail. 4. Understand the concepts, structure, types and design of operating Systems 5. Demonstrate the basic elements of a relational database management system. 6. Identify the data models for relevant problems. 7. Design entity relationship and convert entity relationship diagrams into RDBMS and formulate SQL queries on the respect data into RDBMS and formulate SQL queries on the data.



