



SHAHEED BHAGAT SINGH STATE TECHNICAL CAMPUS
 Moga Road, NH-95, Ferozepur -152004
 (Established by the Punjab Government)
 (Formerly Shaheed Bhagat Singh College of Engineering & Technology)

Department of Computer Applications

COURSE OUTCOMES OF MCA

SEMESTER III		
MCA 301	Database Administration	<ol style="list-style-type: none"> 1. Learn the role and responsibilities of DBA. 2. Learn to install and configure database packages like MySQL. 3. Learn various database objects like table and view. 4. Learn to enhance the performance of database transaction. 5. Learn the communication technology behind the database sharing in a network. 6. Learn the benefits of Client Server and distributed network model in relation to multiple tiers. 7. Learn various client tools for administrative tasks like PHP MyAdmin 8. Learn various database tasks like data migration, Import, Export 9. Learn to create user accounts, grant privileges and implement database encryption. 10. Learn to Database backup and recovery. 11. Perform database tuning and optimization.
MCA 302	Computer Based Optimization Techniques	
MCA 303	Software Engineering	<ol style="list-style-type: none"> 1. Understand the process to be followed in SDLC. 2. Define formulate and analyse a problem. 3. Apply the design and testing principle to software project development. 4. Apply the project management and analysis principles to software project development. 5. Knowledge about software development life cycle and problem articulation.
MCA 304	Java Programming	<ol style="list-style-type: none"> 1. Understand the concept of OOPs as well as the purpose and usage principles of inheritance, polymorphism, encapsulation etc., Java features. 2. Understand the basic concepts of classes and objects, various statements. 3. Understand JVM concept, data typed and operators, strings. 4. Understand internet programming using java applets. 5. Make use of arrays, strings, constructors, inheritance, packages, and interfaces.



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		6. Understand the concept of exceptional handling/ event handling.
MCA 305	System Programming	<ol style="list-style-type: none"> 1. Use basic software applications. 2. Explain the basic concepts of macros and assembler. 3. Design pas I and II assembler. 4. Design linkers and loaders. 5. Design, implement and configure physical security of computers.
MCA 306]	Software Lab-VI [Database Administration	<ol style="list-style-type: none"> 1. Design and model relational databases. 2. Document database structures and rules. 3. Maintain and retrieve data. 4. Perform Database Integrity with the help of column and table level constraints 5. Perform basic administrative functions. 6. Perform security Administration to protect data integrity. 7. Develop databases with Database Packages such as MySQL on a variety of operating system platforms like Windows 7 and Web Server like Apache.
MCA 307]	Software Lab-VII [Java Programming	<ol style="list-style-type: none"> 1. Install JDK and Its Editor 2. Method to write, save, compile and execute Java Programs. 3. Implement the concepts of classes, loops, conditions. 4. Implement the concepts of constructors, Inheritance. 5. Implement the concepts of Packages and Interfaces. 6. Implement the concepts of Internet Programming using Applets. 7. Apply basics of event programming. 8. Apply String Handling Functions.
SEMESTER IV		
MCA 401	Data Warehousing & Mining	<ol style="list-style-type: none"> 1. To understand operational database, Data ware housing, need of database to meet industrial needs. 2. Identify the components in typical Data warehouse Architecture. 3. Learn multidimensional schemas for Data warehouse. 4. To introduce with the knowledge discovery process. 5. To introduce with the knowledge about data mining, decision tree and generic algorithms and Fuzzy set approach. 6. To introduce with clustering methods.
MCA 402	E- Commerce & Web Application	<ol style="list-style-type: none"> 1. Describe the concept of Ecommerce& WWW. 2. To define the security issues on the web, the available solutions & future aspects of Ecommerce.



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	Development	<ol style="list-style-type: none"> To describe the concept of e-payment & EDI. To describe various HTML tags & types of CSS. To define the basic concepts of PHP, java script, & MYSQL database access.
MCA 403	Interactive Computer Graphics	<ol style="list-style-type: none"> Understand the foundations of Computer graphics. Understand the concept of Geometric mathematical and algorithmic concepts necessary for programming computer graphics. Understand the comprehension of window clipping and view port object representation in relation to images displayed on screen. Understand the concepts of geometric and composite transformations on objects. Understand the concepts of shading, surface Elimination on the objects. Practical implementations of algorithms.
MCA 404	Advanced Operating Systems	<ol style="list-style-type: none"> Identify and define key terms related to operating systems. Explain basic concepts related to Multiprocessor and Distributed Operating system. Recall the function of Principal Mosix OS. Describe the general architecture of computers. Gain some practical experience with systems programming and tools.
MCA 405	Software Lab-VIII (E-Commerce & Web Application Development)	<ol style="list-style-type: none"> To describe various HTML tags. To define the tables, lists, frames. Describe database connectivity. To create web pages.
MCA 406	Software Lab-IX (Interactive Computer Graphics)	<ol style="list-style-type: none"> Understand practical fundamentals of line drawing, circle drawing, curve drawing. Understand practical concepts of region fill algorithms. Understand the concept of different type of geometric transformation of objects in 2D and 3D. Understand practical implementation of computer graphics output primitives, modelling, rendering and viewing of objects.
MCA 407	Software Lab X (Advanced Operating Systems)	<ol style="list-style-type: none"> Able to understand the difference between different types of modern operating systems, virtual machines and their structure of implementation and applications. The software architecture(pre emptive, OS virtualization, online algorithms) Cloud computing algorithms. Load balancing algorithms. The MOSIX project.



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SEMESTER V

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MCA 501	Embedded Systems	<ol style="list-style-type: none"> 1. Describe the differences between the general computing systems and the embedded system, also recognize the classification of embedded systems. 2. Become aware of the recent trends in embedded systems design and embedded software design issues. 3. Design real time embedded system using the PIC microcontroller 16F877A. 4. Analyze various examples of embedded systems based on PIC Microcontroller 16F877A. 5. Understand the different applications of embedded system.
MCA 502	Network Security & Administration	<ol style="list-style-type: none"> 1. To be able to identify common network security vulnerabilities/attacks; explain the foundations of Cryptography and network security. 2. To be able to evaluate the risks and threats to networked computers. 3. To be able to demonstrate detailed knowledge of the role of encryption to protect data. 4. To impart knowledge on Encryption techniques, Design Principles and Modes of operation. 5. To create an understanding of Authentication functions the manner in which Message Authentication Codes and Hash Functions works. 6. To examine the issues and structure of Authentication Service and Electronic Mail Security 7. To provide familiarity in Firewall Design Principles. 8. To be familiar with network security designs using available secure solutions (such as PGP, SSL, IPSec, etc),
MCA 503	Web Technologies	<ol style="list-style-type: none"> 1. Describe the XML basics, Editors, Schemas and Document Object Model. 2. Familiar with the AJAX, jQuery and working with events. 3. Description of Web Services its Uses & Types. 4. Describe the concept of SOAP and JSON. 5. Describe the concept of Content management System, Study of Word Press & Creation of Websites.
MCA 504	Object Oriented Analysis & Design with UML	<ol style="list-style-type: none"> 1. Understanding of basics object-oriented design methodology. 2. Design of problem using object model involving class diagrams, object diagrams. 3. Understanding the concepts of generalization and associations. 4. Design of problem using dynamic model involving state transition diagrams.



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		<ol style="list-style-type: none"> 5. Design of problem using functional model involving data flow diagrams. 6. Understanding of basic design structure in UML.
MCA 505	Hardware Lab – I (Embedded Systems)	<ol style="list-style-type: none"> 1. At the conclusion, students are able to- 2. Become aware of the recent trends in embedded system design and embedded software design issues. 3. Describe the Memory-Mapped I/O, Interrupt handling. 4. Design real time embedded systems using the PIC Microcontroller 16F877A. 5. Describe the instruction set of PIC Microcontroller 16F877A. 6. Analyze various examples of embedded systems based on PIC Microcontroller 16F877A.
MCA 506	Software Lab – XI (Web Technologies)	<ol style="list-style-type: none"> 1. Analyse a web page and identify its elements and attributes. 2. Create web pages using XHTML and Cascading Styles sheets. 3. Build web applications using PHP. 4. Create XML documents. 5. Create XML Schema. 6. Build and consume web services
MCA 507	Software Lab – XII (Object Oriented Analysis and Design with UML)	<ol style="list-style-type: none"> 1. Understanding the basic object-oriented design methodology using UML. 2. Implementation and design of problem using object model involving class diagrams, object diagrams using UML. 3. Implementation of the concepts of generalization and associations using UML. 4. Implementation and design of problem using dynamic model involving state transition diagrams using UML. 5. Implementation and design of problem using functional model involving data flow diagrams. 6. Understand of basic design structures in UML.
SEMESTER VI		
MCA 601	Industrial Training	