MCA Programme : Course Outcomes (Pattern 2024)			
Academic Year: 2024-25			
2.6.1 Course Outcomes (CO's)			
Semester-I			
Course No & Code	**Course Name**	**Course Outcome**	
IT11	Python Programming	CO101.1	To learn and apply basic constructs of python such as data, operations, conditions, loops, data types.
		CO101.2	To understand advance concepts of python and apply it for solving the
		CO101.3	To develop Python programs that incorporate OOPS concept, regular expressions and multithreading for complex problem-solving and
		CO101.4	To implement various types of database operations in MongoDB.
		CO101.5	To develop comprehensive web applications using Django Framework
IT12	Data Structure and Algorithms	CO102.1	Implement linear data structures and its various real time applications
		CO102.2	Demonstrate linked list data structure and its types
		CO102.3	Demonstrate dynamic linear data structures like stack, queue and analyze their various applications.
		CO102.4	Implement techniques of Non-Linear data structures like Tree and Graph
		CO102.5	Demonstrate and compare various approaches of Searching, Sorting, Hashing and Heaps.

Course No & Code	Course Name	Course Outcome	
IT13	Advanced DBMS	CO103.1	Demonstrating the concept of fundamentals of relational database systems include: data models, database & DDBS architectures, and ER features.
		CO103.2	Understand the concepts of transaction concurrency control,
		CO103.3	Apply SQL & NoSQL development tools on different types of Schemas
		CO103.4	Implement Real Time applications using Database tools.
		CO103.5	Demonstrate database design and Computation techniques for parallel and distributed database Technology
MT14	: Business Statistics	CO104.1	Understand the role and importance of statistics in business decision-making.
		CO104.2	Apply measures of central tendency and dispersion to summarize data.
		CO104.3	Understand basic probability concepts and rules
		CO104.4	Apply correlation and regression techniques to analyze relationships between variables
		CO104.5	Apply time series analysis techniques to forecast business trends

Course No & Code	Course Name	Course Outcome	
IT14	: Software Engineering and Project Management	CO105.1	Apply concepts, principles of software engineering to develop comprehensive Software Requirement Specification.
		CO105.2	Use software engineering analysis and design modelling technique to represent systems.
		CO105.3	APPLY the contemporary marketing theories, frameworks and tools to inform problem solving with respect to marketing environment, segmenting, targeting, positioning, consumer behaviour, marketing mix, and product life cycle.
		CO105.4	Illustrate Software Project Management models for effective plan, manage and enhance projects
		CO105.5	Employ Agile tools effectively to manage, navigate and facilitate collaboration and streamline project workflows in software development.
EC 11-2	Web Development	CO106.1	Design appropriate user interfaces by implementing new features of HTML5
		CO106.2	Demonstrate the concept of responsive web design and its importance
		CO106.3	ILLUSTRATE value creation & competitive advantage in a digital Business environment.
		CO106.4	Demonstrate the concept of responsive web design and its importance
		CO106.5	ELABORATE upon the various types of digital business models and OUTLINE their benefits and limitations.

Course No & Code	Course Name	Course Outcome	
IT11L	Practical	CO107.1	Demonstrate Basics of Python and OOPs concepts.
		CO107.2	Demonstrate CRUD Operation using MongoDB.
		CO107.3	Design and Develop web application using Django
		CO107.4	Implement Linear data structure like stack, queue and Linked list and demonstrate various searching and sorting techniques
		CO107.5	Implement various operation of non-Linear data structure like Tree and Graph
ITC11	Mini Project	CO108.1	Apply knowledge of software engineering principles and methodologies in designing and implementing the project
		CO108.2	Demonstrate the ability to develop a functioning software application or solution that meets specified requirements and objectives
		CO108.3	Design comprehensive documentation that includes project requirements, design specifications, implementation details, testing strategies, and user manuals
		CO108.4	EXAMINE the changing profile of human capital, employment, productivity and ILLUSTRATE the linkages with Soft Infrastructure, growth of Start-ups, GDP composition of India.
		CO108.5	DETERMINE the key priority areas, across various dimensions, for the Indian Economy in the context of current economic environment.
		CO108.6	BUILD a case for co-existence of MNCs, Indian Public Sector, Indian Private Sector, SMEs, MSMEs and Start Ups in the Indian Economy.

Course No & Code	Course Name	Course Outcome	
IK31	Indian Knowledge system (IKS)	CO109.1	Understand about Indianan philosophy, Culture, knowledge in different domains.
		CO109.2	Explore the ethical and moral perspectives within Indian philosophical and spiritual traditions.
		CO109.3	Understand Indian knowledge system and apply in current area and applications.
		CO109.4	Understand the basics of Indian ethics and values
		CO109.5	Explore the Indian traditions and their application in modern contexts.
Semester-II (IT-MT)			
IT21	Java Programming	CO201.1	Apply the concept of Object-Oriented Programming to map and solve simple real world problem
		CO201.2	To design and develop robust, efficient, multithreaded and scalable Java applications using the collection framework, multithreading, and exception handling
		CO201.3	To develop Web application for solving real life problem using Servlet
		CO201.4	To develop Web application for solving real life problem using JSP, JDBC
		CO201.5	To develop robust web applications using Spring MVC

Course No & Code	Course Name	Course Outcome	
MT21	Optimisation Technique	CO202.1	Understand and formulate linear programming models to solve optimization problems in various business contexts.
		CO202.2	Apply sequential models to make informed decisions in dynamic and
		CO202.3	Utilize Markov chains and simulation techniques to model and solve complex inventory management problems
		CO202.4	Apply PERT/CPM techniques to plan, schedule, and control projects effectively, including managing replacement decisions.
		CO202.5	Apply decision-making processes and strategic interactions using decision theory and game theory frameworks.
IT22	Software Testing and Quality Assurance	CO203.1	Understand the role of software quality assurance in contributing to
		CO203.2	Understand specific software tests with well-defined objectives and
		CO203.3	Apply the software testing techniques in commercial environments.
		CO203.4	Construct test strategies and plans for software testing
		CO203.5	Demonstrate the usage of software testing tools for test effectiveness, efficiency, and coverage.
RM 21	Research Methodology	CO204.1	Understand the basic concepts, purposes, and significance of research methodology in academic and professional contexts.
		CO204.2	Apply various research designs and their appropriateness for different types of research questions and objectives
		CO204.3	Apply suitable data collection and sampling methods to gather reliable and valid data for research studies
		CO204.4	Use appropriate statistical tools and techniques to demonstrate research data and interpret the results effectively
		CO204.5	Apply skills in writing clear, coherent, and well-structured research reports that effectively communicate research findings

Course No & Code	Course Name	Course Outcome	
EC 21-2:	JavaScript	CO208.1	Utilize Basic JavaScript concepts for writing simple Java script
		CO208.2	Design and develop simple application using build-in objects and
		CO208.3	Implement the concepts of OOPs , event handling and Asynchronous
		CO208.4	Create interactive web page of application for problem solving
		CO208.5	Demonstrate server-side and client-side aspects of web applications using Node.js and React.
EC 22-2	: Advance Web Development	CO209.1	Implement a Web Server in Node
		CO209.2	Apply TypeScript features such as decorators, generics, and modules for creating reusable and maintainable code
		CO209.3	Implement concepts and methods of Angular
		CO209.4	Implement Angular services, dependency injections and Asynchronous operations
		CO209.5	Develop website using Next.js
IT21L	IT21L: Practical	CO210.1	Demonstrate fundamental concepts of Java
		CO210.2	Design and implement classes and objects in Java, applying principles of inheritance, polymorphism, encapsulation, and
		CO210.3	Establish database connectivity using JDBC, execute SQL queries, handle result sets, and manage database transactions from Java applications
		CO210.4	Develop dynamic web applications using Java Servlets and JSP,
		CO210.5	Use spring MVC framework to build web application.

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