



MCA Subject List AY 2018-19

Subject Code	Subject Name
<b>ODD Semester</b>	
18MCA11	OOPs Programming with C++
18MCA12	Unix and Shell Programming
18MCA13	Web Technologies
18MCA14	Software Engineering
18MCA15	Computer Organization
18MCA16	OOPs Programming with C++ laboratory
18MCA17	Unix Programming Laboratory
18MCA18	Web Technologies Laboratory.
<b>EVEN Semester</b>	
17MCA31	Computer Networks
17MCA32	Java Programming
17MCA33	Analysis and Design of Algorithms
17MCA34	Software Engineering
17MCA353	MIS and E-commerce
17MCA36	Computer Networks Laboratory
17MCA37	Java Programming Laboratory
17MCA38	Analysis and Design of Algorithms Laboratory
<b>ODD Semester</b>	
16MCA51	Object-oriented modeling and design patterns
16MCA52	Programming using c# &.net
16MCA53	Mobile applications
16MCA542	Cloud Computing
16MCA554	Software Project Management
16MCA56	Software design laboratory
16MCA57	.Net laboratory
16MCA58	Mini project mobile applications
16MCA59	Seminar
<b>EVEN Semester</b>	
18MCA21	Programming using JAVA
18MCA22	Data Structures using C++
18MCA23	Discrete Mathematical Structures and Statistics
18MCA24	Computer Networks
18MCA25	Operating Systems
18MCA26	JAVA Programming Lab
18MCA27	Data Structures Lab
18MCA28	Computer Networks Lab
18MCA29	Mini Project
<b>ODD Semester</b>	
17MCA41	Advanced Java Programming
17MCA42	Advanced Web Programming
17MCA43	Software Testing and Practices
17MCA442	Data Warehousing and Data Mining
17MCA451	Wireless Communication and Mobile Technology
17MCA46	Advance Java Programming Laboratory
17MCA47	Advanced Web Programming Laboratory
17MCA48	Software Testing Laboratory
17MCA49	Seminar
<b>EVEN Semester</b>	
16MCA61	Internship
16MCA62	Project Work



**MAHARAJA INSTITUTE OF TECHNOLOGY MYSORE**  
**BELAWADI, SRIRANGAPATNA TALUK, MANDYA-571477**  
**DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS**



**Course Outcome**

Subject: **OOPs with C++ Programming**

Subject Code: **18MCA11**

CO's	DESCRIPTION OF THE OUTCOMES
18MCA11.1	Understand the concept of object oriented programming and differentiate it with procedure oriented programming.
18MCA11.2	Apply C++ features such as class, objects, constructors, destructors, inheritance and templates in program design and implementation.
18MCA11.3	Analyze the characteristics of OOPS and build object oriented software using C++.
18MCA11.4	Assess the OOPs features like Virtual Functions, Polymorphism and Exception Handling with other programming languages.
18MCA11.5	Develop an application using the concepts of OOPS and associated concepts for complex problem.

CO No	PO No									
	1	2	3	4	5	6	7	8	9	10
18MCA11.1	3									
18MCA11.2	3		3	3	2					2
18MCA11.3		3	2	3	3					
18MCA11.4		3	3		3					
18MCA11.5			3		3					2
CO Average	3	3	2.75	3	2.75					2



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### Course Outcome

**Subject: UNIX And Shell Programming**

**Subject Code: 18MCA12**

CO's	DESCRIPTION OF THE OUTCOMES
18MCA12.1	Understand the Unix Architecture, Unix environment (Commands and its options), Shell Scripting, AWK scripting.
18MCA12.2	Apply the Unix commands and scripting language constructs for file processing.
18MCA12.3	Analyze the problem scenario and identify the commands and options required to solve the problem.
18MCA12.4	Evaluate the correctness of solution for a given problem written through shell scripts/AWK scripts.

CO No	PO No									
	1	2	3	4	5	6	7	8	9	10
18MCA12.1							2			
18MCA12.2	3		2							
18MCA12.3		3								
18MCA12.4			3							
CO Average	3	3	2.5				2			



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Date:

Course Outcome

Subject: Web Technologies

Subject Code: 18MCA13

CO's	DESCRIPTION OF THE OUTCOMES
18MCA13.1	Present the comprehension of the fundamentals of HTML, CSS, client side technologies such as javascript, JQuery etc .
18MCA13.2	Apply HTML5 syntax and semantics to compose forms and tables using CSS.
18MCA13.3	Apply Object Oriented concepts in JavaScript to build dynamic web pages.
18MCA13.4	Analyze the correctness of the scripts, code and protocols that ensures a qualitative web page.
18MCA13.5	Design a dynamic web portal by using HTML5 and client side scripting language for real world scenarios.

CO No	PO No									
	1	2	3	4	5	6	7	8	9	10
18MCA13.1							3	2		
18MCA13.2	3									
18MCA13.3	3									
18MCA13.4		3								
18MCA13.5			3							
CO Average	3	3	3				3	2		



### Course Outcome

**Subject: Software Engineering**

**Subject Code: 18MCA14**

CO's	DESCRIPTION OF THE OUTCOMES
<b>18MCA14.1</b>	Present the comprehension of the concepts of software engineering in preparing structured SRS document, identifying the suitable process model for a given problem.
<b>18MCA14.2</b>	Apply the knowledge about fundamental concepts of software engineering, process models, modern engineering tools used in software development.
<b>18MCA14.3</b>	Analyze the suitability of chosen model using different UML diagrams for a given problem.
<b>18MCA14.4</b>	Assess the errors in the designed model for free application using suitable testing techniques.

CO No	PO No									
	1	2	3	4	5	6	7	8	9	10
18MCA14.1	-	-	-	-	-	-	2	3	-	-
18MCA14.2	3	-	-	-	-	-	-	-	-	-
18MCA14.3	-	3	-	-	-	-	-	-	-	-
18MCA14.4	-	-	-	3	-	-	-	-	-	-
<b>CO Average</b>	<b>3</b>	<b>3</b>	<b>-</b>	<b>3</b>	<b>-</b>	<b>-</b>	<b>2</b>	<b>3</b>	<b>-</b>	<b>-</b>

### Course Outcome

**Subject: Fundamentals of Computer Organization**

**Subject Code: 18MCA15**

CO's	DESCRIPTION OF THE OUTCOMES
18MCA15.1	Understand the fundamentals on Basic Digital System, memory system and Computer System Organization.
18MCA15.2	Apply the concepts to get understand the basics of computer organization
18MCA15.3	Analyze number system, combinational logic circuits and assembly language programs. Design and construct logic circuits and assembly programs.
18MCA15.4	Evaluate the computer architectural design and their Logic circuits in digital system.
18MCA15.5	Invent new solutions to current day problems of computers

CO No	PO No									
	1	2	3	4	5	6	7	8	9	10
18MCA15.1	3									
18MCA15.2	3		3	3	2					2
18MCA15.3		3	2	3	3					
18MCA15.4		3	3		3					
18MCA15.5			3		3					2
CO Average	3	3	2.75	3	2.75					2



### Course Outcome

**Subject: C++ Laboratory**

**Subject Code: 18MCA16**

CO's	DESCRIPTION OF THE OUTCOMES
18MCA16.1	Understand the concept of object oriented programming and differentiate it with procedure oriented programming and present them.
18MCA16.2	Apply C++ features such as class, objects, constructors, destructors, inheritance and templates in program design and implementation.
18MCA16.3	Analyze the characteristics of OOPS and build object oriented software using C++.
18MCA16.4	Assess the OOPs features like Virtual Functions, Polymorphism and Exception Handling with other programming languages.
18MCA16.5	Develop an application using the concepts of OOPS and associated concepts for complex problem.

CO No	PO No									
	1	2	3	4	5	6	7	8	9	10
18MCA16.1	3									
18MCA16.2	3		3	3	2					2
18MCA16.3		3	2	3	3					
18MCA16.4		3	3		3					
18MCA16.5			3		3					2
CO Average	3	3	2.75	3	2.75					2



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### Course Outcome

Subject: UNIX and Shell Programming Laboratory

Subject Code: 18MCA17

CO's	DESCRIPTION OF THE OUTCOMES
18MCA17.1	Understand the Unix Architecture, Unix environment (Commands and its options), Process management, Shell Scripting and present the same.
18MCA17.2	Apply the Unix commands to extract, interpret data for further processing.
18MCA17.3	Analyze the problem scenario and identify the commands and options required to solve the problem and infer the results.
18MCA17.4	Evaluate the correctness of solution for an application problem written through shell scripts/AWK scripts.

CO No	PO No									
	1	2	3	4	5	6	7	8	9	10
18MCA17.1							2			
18MCA17.2	3		2	3	2					2
18MCA17.3		3	2	3	3					
18MCA17.4		2	3		3					
CO Average	3	2.5	2.33	3	2.67		2			2





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**Department of MCA**

**Date:**

**Course Outcome**

**Subject: Web Technologies**

**Subject Code: 18MCA18**

CO's	DESCRIPTION OF THE OUTCOMES
18MCA18.1	Apply HTML5 syntax and semantics to compose forms and tables using CSS.
18MCA18.2	Apply Object Oriented concepts in JavaScript to build dynamic web pages.
18MCA18.3	Analyze the correctness of the scripts, code and protocols that ensures a qualitative web page.
18MCA18.4	Design a dynamic web portal by using HTML5 and client side scripting language for real world scenarios.
18MCA18.5	Conduct experiments either individuals or in a team and present its corresponding outcomes and process the both orally and in a written form.

CO No	PO No									
	1	2	3	4	5	6	7	8	9	10
18MCA18.1	3									
18MCA18.2	3									
18MCA18.3		3								
18MCA18.4			3							
18MCA18.5				3	3					
CO Average	3	3	3	3	3					



Course Outcome

Subject: Programming using Java

Subject Code: 18MCA21

CO's	DESCRIPTION OF THE OUTCOMES
18MCA21.1	Understand the Core OOP concepts in Java, Java Networking and Applets
18MCA21.2	Apply the JAVA Object oriented concepts in writing java programs.
18MCA21.3	Analyze the given problem statement using Core java concepts.
18MCA21.4	Evaluate the suitability of classes, interfaces in the development of java console based application.
18MCA21.5	Develop the Java Application for a given scenario.

CO No	PO No									
	1	2	3	4	5	6	7	8	9	10
18MCA21.1										
18MCA21.2	3		3	3	2					2
18MCA21.3		2	2	3	3					
18MCA21.4		3	2		2					
18MCA21.5			3		3					2
CO Average	3	2.5	2.5	3	2.5					2





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Department of MCA

Date: 01/02/19

Course Outcome

Subject: DISCRETE MATHEMATICAL STRUCTURES

Subject Code: 18MCA23

CO's	DESCRIPTION OF THE OUTCOMES
18MCA23.1	Understand and use logical notation and mathematical fundamental concepts using sets, relations & functions, permutation and mathematical induction.
18MCA23.2	Construct logic gates and use the rules of inference for logical implication.
18MCA23.3	Explain the probability through Baye's theorem, concept of discrete and continuous probability distribution with mean and variance.
18MCA23.4	Apply permutation combination and statistical methods for correlation, regression and also for curve fitting.

CO No	PO No									
	1	2	3	4	5	6	7	8	9	10
18MCA23.1	3	2					2			
18MCA23.2	3	2					2			
18MCA23.3	3	2					2			
18MCA23.4	3	2					2			
CO Average	3	2					2			

## Course Outcome

Subject: Computer Networks

Subject Code: 18MCA24

CO's	DESCRIPTION OF THE OUTCOMES
18MCA24.1	Present the comprehension of fundamentals of networking concepts such as layers, protocols, frame works / architecture, working principles of various layer protocols and associated concepts
18MCA24.2	Apply the appropriate algorithm for error control, flow control and reliable transmission of data over the network.
18MCA24.3	Analyze the performance of a network as affected through different network layers.

CO No	PO No									
	1	2	3	4	5	6	7	8	9	10
18MCA24.1	-	-	-	-	-	-	3	3	-	-
18MCA24.2	3	-	-	-	-	-	-	-	-	-
18MCA24.3	-	3	-	-	-	-	-	-	-	-
CO Average	3	3	-	-	-	-	3	3	-	-



## Course Outcome

**Subject: Computer Networks**

**Subject Code: 18MCA24**

CO's	DESCRIPTION OF THE OUTCOMES
18MCA24.1	Present the comprehension of fundamentals of networking concepts such as layers, protocols, frame works / architecture, working principles of various layer protocols and associated concepts
18MCA24.2	Apply the appropriate algorithm for error control, flow control and reliable transmission of data over the network.
18MCA24.3	Analyze the performance of a network as affected through different network layers.

CO No	PO No									
	1	2	3	4	5	6	7	8	9	10
18MCA24.1	-	-	-	-	-	-	3	3	-	-
18MCA24.2	3	-	-	-	-	-	-	-	-	-
18MCA24.3	-	3	-	-	-	-	-	-	-	-
CO Average	3	3	-	-	-	-	3	3	-	-



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**Course Outcome**

**Subject: Operating System**

**Subject Code: 18MCA25**

CO's	DESCRIPTION OF THE OUTCOMES
18MCA25.1	Understand the structure of OS and basic architectural components involved in OS design
18MCA25.2	Apply process scheduling techniques to formulate solutions for critical section problems
18MCA25.3	Analyze suitable techniques for handling deadlocks and effective memory management of system
18MCA25.4	Evaluate Linux OS case studies in terms of its performance on various aspects and environment.

CO No	PO No									
	1	2	3	4	5	6	7	8	9	10
18MCA25.1							2			
18MCA25.2	3									
18MCA25.3		3								
18MCA25.4			3							
CO Average	3	3	3				2			

## Course Outcome

Subject Java Programming Laboratory

Subject Code: 18MCA26

CO's	DESCRIPTION OF THE OUTCOMES
18MCA26.1	Apply the Core OOP concepts in Java, Java Networking and Applets in writing Java Programs.
18MCA26.2	Code, debug and demonstrate the working nature of java applications.
18MCA26.3	Analyze the given problem statement using Core java concepts.
18MCA26.4	Evaluate the suitability of classes, interfaces in the development of java console based application.
18MCA26.5	Design the learning's into real world problems solutions.

CO No	PONo									
	1	2	3	4	5	6	7	8	9	10
18MCA26.1										
18MCA26.2	3		3	3	2					2
18MCA26.3		3	2	3	3					
18MCA26.4		3	3	3	3					
18MCA26.5			2		2					2
CO Average	3	3	2.5	3	2.5					2



## Course Outcome

Subject: Data Structures Lab

Subject Code: 18MCA27

CO's	DESCRIPTION OF THE OUTCOMES
18MCA27.1	Understand the behavior of different data structures, arrays, stack, queue, list and tree with their applications in its entire spectrum.
18MCA27.2	Apply data structure concepts and programming knowledge to solve given problem under study.
18MCA27.3	Analyze the results of chosen data structures in terms of its effectiveness to solve the problem and infer the same.
18MCA27.4	Evaluate the correctness of the chosen type of structure in terms of their efficacy to solve complex application problem.
18MCA27.5	Create applications using data structures for complex problem.

CO No	PO No									
	1	2	3	4	5	6	7	8	9	10
18MCA27.1	3									
18MCA27.2	3		3	3	2					2
18MCA27.3		3	2	3	3					
18MCA27.4		3	3		3					
18MCA27.5			3		3					2
CO Average	3	3	2.75	3	2.75					2

## Course Outcome

Subject: Computer Networks Laboratory

Subject Code: 18MCA28

CO's	DESCRIPTION OF THE OUTCOMES
18MCA28.1	Apply suitable methodology for building familiar networks and associated algorithms with C/C++ and TCL scripting language.
18MCA28.2	Analyze given problem scenario, infer the correctness of the selected parameters based on efficacy of solution and document the same.
18MCA28.3	Design network topology with different protocols for better performance using NS2.
18MCA28.4	Conduct experiments either individually or in a team and present its corresponding outcomes and process both orally and in a written form.

CO No	PO No									
	1	2	3	4	5	6	7	8	9	10
18MCA28.1	3									
18MCA28.2		3								
18MCA28.3			3		2					
18MCA28.4								3		
CO Average	3	3	3	3	2			3		



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Department of Master of Computer Applications

## Course Outcome

Subject: Mini Project

Subject Code: 18MCA29

CO's	DESCRIPTION OF THE OUTCOMES
18MCA29.1	Apply the technical knowledge gained from previous courses with the awareness of impact of technology on the society and their ethical responsibilities to identify suitable problem.
18MCA29.2	Analyze the use of appropriate tools to form team, segregate work and execute/implement project
18MCA29.3	Evaluate the findings of complex problems through critical thinking and decision making capabilities to propose project based solutions
18MCA29.4	Develop skills to disseminate technical and general information by means of oral as well as written presentation skills with professionalism.

CO No	PO No									
	1	2	3	4	5	6	7	8	9	10
18MCA29.1	3		2	3	1	2				
18MCA29.2		3			3					3
18MCA29.3				3						
18MCA29.4						2		3		3
CO Average	3	3	2	3	2	2		3		3

Department of Master of Computer Applications

Course Outcome

Subject: Computer Networks

Subject Code: 17MCA31

CO's	DESCRIPTION OF THE OUTCOMES
17MCA31.1	Understand the fundamentals of Networking Technologies and Network Management concepts such as layers, protocols, IP addressing, cabling, architecture and associated concepts.
17MCA31.2	Apply the principle concepts of networking for a given problem.
17MCA31.3	Analyze the suitability of protocols, networks stands, IP addressing, cabling networking and LAN for application problem.

CO No	PO No									
	1	2	3	4	5	6	7	8	9	10
17MCA31.1							2			
17MCA31.2	3									
17MCA31.3		3								
CO Average	3	3					2			

### Course Outcome

Subject: Java Programming

Subject Code: 17MCA32

CO's	DESCRIPTION OF THE OUTCOMES
17MCA32.1	Understand the Core OOP concepts in Java, Java Networking and Applets
17MCA32.2	Apply the JAVA Object oriented concepts in writing java programs.
17MCA32.3	Analyze the given problem statement using Core java concepts.
17MCA32.4	Evaluate the suitability of classes, interfaces in the development of java console based application.
17MCA32.5	Develop the Java Application for a given scenario.

CO No	PO No									
	1	2	3	4	5	6	7	8	9	10
17MCA32.1										
17MCA32.2	3		3	3	2					2
17MCA32.3		3	2	3	3					
17MCA32.4		3	2		3					
17MCA32.5			3		3					2
CO Average	3	3	2.5	3	2.75					2

## Course Outcome

Subject: Analysis and Design of Algorithms

Subject Code: 17MCA33

CO's	DESCRIPTION OF THE OUTCOMES
17MCA33.1	Present the comprehension fundamental steps for problems solving, of the performance of recursive and non recursive algorithms and use of asymptotic notations to measure the performance of algorithms.
17MCA33.2	Apply prior knowledge of mathematics and standard algorithm techniques to solve given problems.
17MCA33.3	Analyze the computational complexity of different algorithms and infer the results.
17MCA33.4	Design algorithms for different types of problems by using various design techniques.

CO No	PO No									
	1	2	3	4	5	6	7	8	9	10
17MCA33.1	-	-	-	-	-	-	3	3	-	-
17MCA33.2	3	-	-	-	-	-	-	-	-	-
17MCA33.3	-	3	-	-	-	-	-	-	-	-
17MCA33.4	-	-	3	-	-	-	-	-	-	-
CO Average	3	3	3	-	-	-	3	3	-	-





**Course Outcome**

**Subject: MIS and E-Commerce**

**Subject Code: 17MCA353**

CO's	DESCRIPTION OF THE OUTCOMES
17MCA353.1	Present the comprehend of leadership role of Management Information Systems in achieving business competitive advantage through informed decision-making and business applications & E-commerce initiatives.
17MCA353.2	Apply Management Information Systems knowledge and skills learned to facilitate the acquisition, development, deployment, and management of information systems.
17MCA353.3	Analyze business information needs to facilitate evaluation of strategic alternatives.
17MCA353.4	Assess communicate strategic alternatives in terms of their efficacy to facilitate decision-making.

CO No	PO No									
	1	2	3	4	5	6	7	8	9	10
17MCA353.1	2									
17MCA353.2	2			3						
17MCA353.3		3								
17MCA353.4		3						3		2
<b>CO Average</b>	<b>2</b>	<b>3</b>		<b>3</b>						<b>2</b>





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Department of Master of Computer Applications

### Course Outcome

Subject: Computer Networks Laboratory

Subject Code: 17MCA36

CO's	DESCRIPTION OF THE OUTCOMES
17MCA36.1	Understand the principles of networking and procedural adaptation of application software to simulate and present appropriately.
17MCA36.2	Apply analytically suitable methodology for building familiar networks and associated algorithms.
17MCA36.3	Analyze principle input parameters for given problem scenario, infer the correctness of the selected parameters based on efficacy of solution and document the same

CO No	PONo									
	1	2	3	4	5	6	7	8	9	10
17MCA36.1							2			
17MCA36.2	3	3			2					1
17MCA36.3	2	3		2						2
CO Average	2.5	3		2	2		2			1.5

## Course Outcome

Subject Java Programming Laboratory

Subject Code: 17MCA37

CO's	DESCRIPTION OF THE OUTCOMES
17MCA37.1	Apply the Core OOP concepts in Java, Java Networking and Applets in writing Java Programs.
17MCA37.2	Code, debug and demonstrate the working nature of java applications.
17MCA37.3	Analyze the given problem statement using Core java concepts.
17MCA37.4	Evaluate the suitability of classes, interfaces in the development of java console based application.
17MCA37.5	Design the learning's into real world problems solutions.

CO No	PO No									
	1	2	3	4	5	6	7	8	9	10
17MCA37.1										
17MCA37.2	3		3	3	2					2
17MCA37.3		3	2	3	3					
17MCA37.4		3	3		3					
17MCA37.5			3		3					2
CO Average	3	3	2.75	3	2.75					2

## Course Outcome

Subject: Algorithms Laboratory

Subject Code: 17MCA38

CO's	DESCRIPTION OF THE OUTCOMES
17MCA38.1	Apply the appropriate design techniques (brute-force, greedy, dynamic programming, etc.) on various problems.
17MCA38.2	Analyze the time based performance of algorithms using language features like Time() function in C/C++.
17MCA38.3	Design an application to solve real world problem using an appropriate algorithm using C/C++.
17MCA38.4	Conduct experiments either individually or in a team and <b>present</b> its corresponding outcomes and process both orally and in a written form.

CO No	PO No									
	1	2	3	4	5	6	7	8	9	10
17MCA38.1	3	-	-	-	-	-	-	-	-	-
17MCA38.2	-	3	2	-	-	-	-	-	-	-
17MCA38.3	-	-	3	-	-	-	-	-	-	-
17MCA38.4	-	-	-	3	3	-	-	-	-	-
CO Average	3	3	2.5	3	3	-	-	3	-	-

### Course Outcome

Subject: Advanced Java Programming

Subject Code: 17MCA41

CO's	DESCRIPTION OF THE OUTCOMES
17MCA41.1	Comprehend the concept of Servlets , JSP, JDBC Architecture, Database interactions and EJBs.
17MCA41.2	Apply the usage of Servlets, JSP, Java beans, JDBC concepts in the development of Java Web and Enterprise Applications.
17MCA41.3	Analyze the usage of Servlets, JSP, Java beans and JDBC in Web application development.
17MCA41.4	Evaluate the suitability of Servlets, JSP, Java beans and JDBC concepts in the development of an efficient application.
17MCA41.5	Create the Java Database web application using Servlets, JSP, Java beans and JDBC concepts.

CO No	PONo									
	1	2	3	4	5	6	7	8	9	10
17MCA41.1										
17MCA41.2	3		3	3	2					2
17MCA41.3		3	2	3	3					2
17MCA41.4		3	3		3					
17MCA41.5			3		3					2
CO Average	3	3	2.75	3	2.75					2

Department of Master of Computer Applications

Date:

Course Outcome

Subject: Advanced Web Programming

Subject Code: 17MCA42

CO's	DESCRIPTION OF THE OUTCOMES
17MCA42.1	Present the comprehension of the basic knowledge of Client side and server side scripting languages such as JQuery Ruby on Rails, PHP.
17MCA42.2	Apply the JQuery syntax and semantics to compose simple programs.
17MCA42.3	Apply PHP and Ruby syntax and semantics to design dynamic web portals.
17MCA42.4	Analyze the correctness of the scripts, code and protocols that ensures a qualitative web page.
17MCA42.5	Design a dynamic web portal by using client side and server side scripting language for real world scenarios.

CO No	PO No									
	1	2	3	4	5	6	7	8	9	10
17MCA42.1							3	3		
17MCA42.2	3									
17MCA42.3	3									
17MCA42.4		3								
17MCA42.5			3							
CO Average	3	3	3				3	3		

## Course Outcome

Subject: Software Testing and Practices

Subject Code: 17MCA43

CO's	DESCRIPTION OF THE OUTCOMES
17MCA43.1	Present the comprehend of basic concepts of software testing like decision tables, BVA, ECT, Structural testing, basis path, test coverage and associated concepts and present the same.
17MCA43.2	Apply BVA and ECT methods for functional testing.
17MCA43.3	Analyze the DD paths for structural testing and infer the results.
17MCA43.4	Evaluate the correctness of Basis Path and Test coverage
17MCA43.5	Design test cases for a given problem and document the same suitably.

CO No	PO No									
	1	2	3	4	5	6	7	8	9	10
17MCA43.1	2	-	-	-	-	-	-	-	-	-
17MCA43.2	-	3	-	-	-	-	-	-	-	-
17MCA43.3	-	2	-	-	-	-	-	-	-	-
17MCA43.4	-	-	-	2	-	-	-	-	-	-
17MCA43.5	-	-	3	-	-	-	-	-	-	-
CO Average	2	2.5	3	2	-	-	-	-	-	-



**Course Outcome**

**Subject: Data Warehousing & Data Mining**

**Subject Code: 17MCA442**

CO's	DESCRIPTION OF THE OUTCOMES
17MCA442.1	Present the comprehend of concepts and techniques of data mining and the data warehouse; apply the techniques to solve the real world problems.
17MCA442.2	Apply data mining techniques to generate optimal results.
17MCA442.3	Analyze association, classification and clustering techniques.
17MCA442.4	Evaluate the effectiveness of data mining algorithms/techniques for different data.

CO No	PO No									
	1	2	3	4	5	6	7	8	9	10
17MCA442.1	2									
17MCA442.2	3									
17MCA442.3		3	2							
17MCA442.4		3								
<b>CO Average</b>	<b>2.5</b>	<b>3</b>	<b>2</b>							



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**DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS**



**Course Outcome**

**Subject: Wireless Communication and Mobile Technology**

**Subject Code: 17MCA451**

CO's	DESCRIPTION OF THE OUTCOMES
17MCA451.1	Understand the classification of devices, system Architecture ,Wireless Medium Access control and CDMA based communication and its Applications
17MCA451.2	Apply the Data synchronizations ,Server and Management Application Languages (XML, Java, J2ME, JavaCard, Mobile Operating Systems).
17MCA451.3	Analyze the working mobile IP, working of data Dissemination and broadcasting systems
17MCA451.4	Design and evaluate the concepts of network layer, transport layer in mobile technologies
17MCA451.5	Solve the problem of Data synchronizations, Server Management

CO No	PO No									
	1	2	3	4	5	6	7	8	9	10
17MCA451.1	3									
17MCA451.2	3		3	3	2					2
17MCA451.3		3	2	3	3					
17MCA451.4		3	3		3					
17MCA451.5			3		3					2
CO Average	3	3	2.75	3	2.75					2



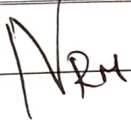
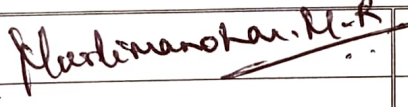

Course Outcome

Subject: Advanced Java Programming Laboratory

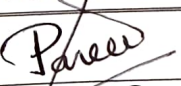
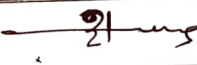

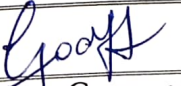
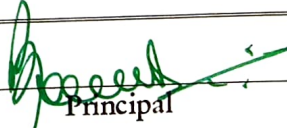
Subject Code: 17MCA46

CO's	DESCRIPTION OF THE OUTCOMES
17MCA46.1	Apply the fundamental concepts of Servlets , JSP, JDBC Architecture, Database interactions and EJBs.
17MCA46.2	Code, debug and demonstrate the working nature of Servlets, JSP, Java beans, JDBC concepts in the development of Java Web and Enterprise Applications.
17MCA46.3	Identify the given problem and design the Java Web application using advanced Java concepts.
17MCA46.4	Evaluate the suitability of Servlets, JSP, Java beans and JDBC concepts in the development of an efficient application.
17MCA46.5	Create the Java Database web application using Servlets, JSP, Java beans and JDBC concepts.

CO No	PONo									
	1	2	3	4	5	6	7	8	9	10
17MCA46.1										
17MCA46.2	3		3	3	2					2
17MCA46.3		3	2	3	3					2
17MCA46.4		3	3	3	3					
17MCA46.5			3		3					2
CO Average	3	3	2.75	3	2.75					2

	 Faculty	 Course Coordinator
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Approval of the COs and their mapping with POs was given

 Criterion 2 Coordinator	 NBA coordinator	 HOD
 Convener		 Principal

Department of Master of Computer Applications

Date:

Course Outcome

Subject: Advanced Web Programming Laboratory

Subject Code: 17MCA47

CO's	DESCRIPTION OF THE OUTCOMES
17MCA47.1	Apply the JQuery syntax and semantics to compose simple programs.
17MCA47.2	Apply PHP and Ruby syntax and semantics to design dynamic web portals.
17MCA47.3	Analyze the correctness of the scripts, code and protocols that ensures a qualitative web page.
17MCA47.4	Design a dynamic web portal by using client side and server side scripting language for real world scenarios.
17MCA47.5	Conduct experiments either individuals or in a team and present its corresponding outcomes and process the both orally and in a written form.

CO No	PO No									
	1	2	3	4	5	6	7	8	9	10
17MCA47.1	3									
17MCA47.2	3									
17MCA47.3		3								
17MCA47.4			3							
17MCA47.5				3	3					
CO Average	3	3	3	3	3					

## Course Outcome

Subject: Software Testing Laboratory

Subject Code: 17MCA48

CO's	DESCRIPTION OF THE OUTCOMES
17MCA48.1	Implement decision tables for triangle problem
17MCA48.2	Simulate BVA and ECT methods for functional testing
17MCA48.3	Design of test cases

CO No	PO No									
	1	2	3	4	5	6	7	8	9	10
17MCA48.1	-	-	-	3	-	-	-	-	-	-
17MCA48.2	-	2	-	-	-	-	-	-	-	-
17MCA48.3	-	-	3	-	-	-	-	-	-	-
CO Average	-	2	3	3	-	-	-	-	-	-

## Department of Master of Computer Applications

### Course Outcome

Subject: SEMINAR

Subject Code: 17MCA49

CO's	DESCRIPTION OF THE OUTCOMES
17MCA49.1	Identify associated topic of relevance , write technical document and give oral presentations related to the topic using suitable presentation tools to help convey the topic in focus
17MCA49.2	Develop ability to comprehend multi disciplinary computer application technological concepts within ethical, environment and social contests and uplift professional potential
17MCA49.3	Manage time and verbal interaction and continuously develop the ability to address the queries through supporting explanations in public and professional dialogue

CO No	PO No									
	1	2	3	4	5	6	7	8	9	10
17MCA49.1	2	-	-	-	-	-	-	2	-	-
17MCA49.2	-	-	3	-	-	3	-	-	-	-
17MCA49.3	-	-	-	-	-	2	2	-	-	-
CO Average	2	-	3	-	-	2.5	2	2	-	-



**Course Outcome**

**Subject: Object Oriented Modeling & Design Patterns**

**Subject Code: 16MCA51**

<b>CO's</b>	<b>DESCRIPTION OF THE OUTCOMES</b>
16MCA51.1	Present the comprehend of object oriented concepts and apply UML notations to model objects of applications.
16MCA51.2	Apply the fundamentals of object oriented concepts to differentiate between various object relationships and associations.
16MCA51.3	Analyze the structural and behavioral models and hence a software system.
16MCA51.4	Estimate performance and design a reuse plan through domain and application analysis.
16MCA51.5	Evaluate the design patterns and its variants and assess the effectiveness in solving recurring programming problems.

<b>CO No</b>	<b>PO No</b>									
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
16MCA51.1	3									
16MCA51.2	2									
16MCA51.3		3		2						
16MCA51.4				3						
16MCA51.5				3						3
<b>CO Average</b>	<b>2.5</b>	<b>3</b>		<b>2.6</b>						<b>3</b>



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 Department of Master of Computer Applications



Date: / /

**Course Outcome**

**Subject: PROGRAMMING USING C#&.NET**

**Subject Code: 16MCA52**

CO's	DESCRIPTION OF THE OUTCOMES
16MCA52.1	Present the comprehension of the .Net Framework architecture and its components.
16MCA52.2	Apply OOPs concepts to develop console applications, using C# programming language.
16MCA52.3	Apply the knowledge of ADO.net, MySQL, ASP.NET for creating different applications.
16MCA52.4	Analyze the use of .Net Components depending on the problem statement.
16MCA52.5	Create web based and Windows based application with Database connectivity using ASP.NET, ADO.NET

CO No	PO No									
	1	2	3	4	5	6	7	8	9	10
16MCA52.1							3	3		
16MCA52.2	3									
16MCA52.3	3									
16MCA52.4		3								
16MCA52.5			3							
CO Average	3	3	3				3	3		

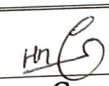
Course Outcome

Subject: Mobile Applications Development

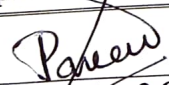
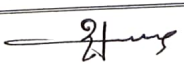

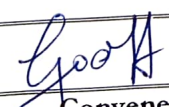
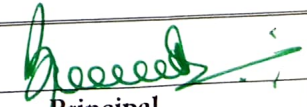
Subject Code: 16MCA53

CO's	DESCRIPTION OF THE OUTCOMES
16MCA53.1	Understand the fundamental concepts of mobile applications and all associated concepts within the purview mobile applications.
16MCA53.2	Apply the principles of mobile applications to device programs suitable for known mobile operating systems.
16MCA53.3	Analyze the correctness of the programs in terms of their efficacy to function in the existing OS.
16MCA53.4	Evaluate the system specification of the operating system and device suitable program for the same using various architecture and algorithms.
16MCA53.5	Create the mobile applications to meet the dynamic requirement of security and functioning considering optimal usage of resources.

CO No	PO No									
	1	2	3	4	5	6	7	8	9	10
16MCA53.1	3									
16MCA53.2	3		3	3	2					2
16MCA53.3		3	2	3	3					
16MCA53.4		3	3		3					
16MCA53.5			3		3					2
CO Average	3	3	2.75	3	2.75					2

		
Faculty		Course Coordinator

Approval of the COs and their mapping with POs was given

		
Criterion 2 Coordinator	NBA Coordinator	HOD
		
Convener		Principal



Course Outcome

Subject: Cloud Computing

Subject Code: 16MCA542

CO's	DESCRIPTION OF THE OUTCOMES
16MCA542.1	Present the comprehend of fundamental concepts of cloud <b>computing</b> such as paradigms, virtualization and service models.
16MCA542.2	Apply the principles of computing paradigms like parallel and <b>distributed</b> computing for given problem under study.
16MCA542.3	Analyze the correctness of the chosen model in terms of its <b>potential</b> to solve an application problem.
16MCA542.4	Evaluate the suitability of different deployment and service <b>models</b> for an application problem.
16MCA542.5	Evaluate ethical and potential security issues related to <b>cloud environment</b> .

CO No	PO No									
	1	2	3	4	5	6	7	8	9	10
16MCA542.1	2	-	-	-	-	-	-	-	-	-
16MCA542.2	-	2	-	-	-	-	-	-	-	-
16MCA542.3	-	3	-	-	-	-	-	-	-	-
16MCA542.4	-	-	-	2	-	-	-	-	-	-
16MCA542.5	-	-	-	2	-	-	-	-	-	-
CO Average	2	2.5	-	2	-	-	-	-	-	-



## Course Outcome

Subject: Software Project Management

Subject Code: 16MCA554

CO's	DESCRIPTION OF THE OUTCOMES
16MCA554.1	Understand the practices and methods of successful software project management
16MCA554.2	Apply the Cost-benefit Analysis for selecting the project
16MCA554.3	Apply PERT and CPM techniques for project Activity planning.
16MCA554.4	Analyze the scheduling of project activities using different graphical notations, and identify and categorize the Risks involved in the project.
16MCA554.5	Identify and categorize the Risks involved in the project and assess its impact and recommend the suitable solutions to manage the risks.

CO No	PO No									
	1	2	3	4	5	6	7	8	9	10
16MCA554.1						2				
16MCA554.2	3		3	3	2					2
16MCA554.3		3	2	3	3					
16MCA554.4		3	2		3					
16MCA554.5			3		2					2
CO Average	3	3	2.5	3	2.75	2				2



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**Course Outcome**

**Subject: Software Design Lab**

**Subject Code: 16MCA56**

<b>CO's</b>	<b>DESCRIPTION OF THE OUTCOMES</b>
16MCA56.1	Present the comprehend of fundamental principles of Object-Oriented analysis, design, development and programming
16MCA56.2	Demonstrate and represent the UML model elements, to enable visual representation of the system being developed
16MCA56.3	Implement object oriented design model with the help of modern tool, Rational software Architect.
16MCA56.4	Evaluate various design patterns for applicability, reasonableness, and relation to other design criteria.

<b>CO No</b>	<b>PO No</b>									
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
16MCA56.1	3									
16MCA56.2				3						
16MCA56.3					3					
16MCA56.4				2						3
<b>CO Average</b>	<b>3</b>			<b>2.5</b>	<b>3</b>					<b>3</b>

Course Outcome

Date: / /

Subject: NET LABORATORY

Subject Code: 16MCA57

CO's	DESCRIPTION OF THE OUTCOMES
16MCA57.1	Apply OOPs concepts using C# programming language to develop console applications.
16MCA57.2	Apply the knowledge of ADO.net, MySQL, ASP.NET for creating different applications.
16MCA57.3	Analyze the use of .Net Components depending on the problem statement.
16MCA57.4	Create a web based and Windows based application with Database connectivity using ASP.NET, ADO.NET
16MCA57.5	Conduct experiments either individuals or in a team and present its corresponding outcomes and process the both orally and in a written form.

CO No	PO No									
	1	2	3	4	5	6	7	8	9	10
16MCA57.1	3									
16MCA57.2	3									
16MCA57.3		3								
16MCA57.4			3							
16MCA57.5				3	3					
CO Average	3	3	3	3	3					

### Course Outcome

Subject: **Mobile Applications Laboratory**

Subject Code: 16MCA58

CO's	DESCRIPTION OF THE OUTCOMES
16MCA58.1	Understand the fundamental concepts of mobile applications and all associated concepts within the purview mobile applications and present the same.
16MCA58.2	Apply the principles of mobile applications to device programs suitable for known mobile operating systems.
16MCA58.3	Analyze the correctness of the programs in terms of their efficacy to function in the existing OS and infer the findings.
16MCA58.4	Evaluate the system specification of the operating system and device suitable program for the same using various architecture and algorithms.
16MCA58.5	Create the mobile applications to meet the dynamic requirement of security and functioning considering optimal usage of resources.

CO No	PO No									
	1	2	3	4	5	6	7	8	9	10
16MCA58.1	3									
16MCA58.2	3		3	3	2					2
16MCA58.3		3	2	3	3					
16MCA58.4		3	3		3					
16MCA58.5			3		3					2
CO Average	3	3	2.75	3	2.75					2



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**Course Outcome**

**Subject: SEMINAR**

**Subject Code: 16MCA59**

CO's	DESCRIPTION OF THE OUTCOMES
16MCA59.1	Identify associated topic of relevance , write technical document and give oral presentations related to the topic using suitable presentation tools to help convey the topic in focus
16MCA59.2	Develop ability to comprehend multi disciplinary computer application technological concepts within ethical, environment and social contests and uplift professional potential
16MCA59.3	Manage time and verbal interaction and continuously develop the ability to address the queries through supporting explanations in public and professional dialogue

CO No	PO No									
	1	2	3	4	5	6	7	8	9	10
16MCA59.1	2	-	-	-	-	-	-	2	-	-
16MCA59.2	-	-	3	-	-	3	-	-	-	-
16MCA59.3	-	-	-	-	-	2	2	-	-	-
CO Average	2	-	3	-	-	2.5	2	2	-	-



**Course Outcome**

**Subject: Internship**

**Subject Code: 16MCA61**

CO's	DESCRIPTION OF THE OUTCOMES
16MCA61.1	Comprehend the key concerns, practices, standard operating procedures protocols & new concepts of the particular company/industry in which they have worked.
16MCA61.2	Apply hands on experience, communication, interpersonal & other critical skills to integrate theory & practice in multidisciplinary area.
16MCA61.3	Manage time, analyze the skills which are transferable to new contexts & identify which appropriate technology could be used to solve given problem.

CO No	PO No									
	1	2	3	4	5	6	7	8	9	10
16MCA61.1		2		2						
16MCA61.2					3			3	2	3
16MCA61.3		3							2	3
<b>CO Average</b>		<b>2.5</b>		<b>2</b>	<b>3</b>			<b>3</b>	<b>2</b>	<b>3</b>



Course Outcomes

Subject: Project Work

Subject Code: 16MCA62

CO's	DESCRIPTION OF THE OUTCOMES
16MCA62.1	Apply the technical and knowledge gained from previous courses with the awareness of impact of technology on the society and their responsibilities to identify suitable problem.
16MCA62.2	Analyze the use of appropriate tools, segregate work and execute / implement project.
16MCA62.3	Evaluate the findings of complex problems through critical thinking and decision making capabilities to propose project based solutions.
16MCA62.4	Develop skills to disseminate technical and general information by means of oral as well as written presentation skills with professionalism.

CO No	PO No									
	1	2	3	4	5	6	7	8	9	10
16MCA62.1	3									
16MCA62.2		3	3		3					3
16MCA62.3				2						
16MCA62.4								3		
<b>CO Average</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>2</b>	<b>3</b>			<b>3</b>		<b>3</b>