

PROGRAMME SPECIFIC OUTCOMES, PROGRAMME OUTCOMES AND COURSE OUTCOMES

PG & DEPARTMENT OF COMPUTER SCIENCE

B.Sc (COMPUTER SCIENCE) EXTRA-CREDIT COURSES & VALUE-ADDED COURSES

PSOs	PROGRAMME SPECIFIC OUTCOMES	
PSO1	Able to work in the areas of programming, database, multimedia, web designing, networking and to acquire knowledge in various domain based electives.	
PSO2	Accomplish the ability to design and develop computer applications for real world problems.	
PSO3	Able to create platforms to become an entrepreneur and a relish for higher studies such as M.C.A., M.Sc., etc.,	
PSO4	Apply standard Computer science practices and strategies in real-time software project development.	
PSO5	An ability to apply mathematical methodologies to solve computation task, model, real world problem using appropriate data structure and suitable algorithm.	
B.Sc (COMPUTER SCIENCE)		
B.Sc (COMPUTER SCIENCE) / PROGRAMMES OUTCOMES		
POs	Description of POs	
PO1	Ability to apply knowledge of computing and mathematics to solve problems.	
PO2	Able to survive in today's interconnected world with the knowledge earned through critical thinking and fundamental core concepts.	
PO3	Become women entrepreneur such as web designer, database developer, programmer and multimedia designer.	
PO4	Providing hands-on –training in state- of- the art technologies to design and implement software applications for social, economic, health , safety and ethical issues.	
PO5	Have sufficient knowledge in hardware and software to meet the current industry requirements.	
B.Sc (COMPUTER SCIENCE)/ COURSE OUTCOMES		
	Description of COs	Bloom's Taxonomy / Cognitive Domain
Sub. Code: MUCSC1	FUNDAMENTALS OF DIGITAL COMPUTERS	

Sub. Code: MUCSC2		PROGRAMMING IN 'C'
CO1.	Recall and understand the fundamentals of C programming. To acquire the programming logic, use of program instruction, syntax and programming structure.	Knowledge (Level K1)
CO2.	To acquire the programming logic, use of program instruction, syntax and programming structure.	Comprehension (Level K2)
CO3.	Understand the concepts of decision making, branching and looping.	Knowledge (Level K1) Comprehension (Level K2)
CO4.	Implement different operations on arrays and functions to solve the problem.	Application (Level K3)
CO5.	Execute file operations to preserve data in physical disk.	Application (Level K3)
Sub. Code: MUCSL2		PROGRAMMING IN 'C' LAB
CO1.	Read and understand the execution of programs written in C language.	Knowledge (Level K1)
CO2.	Trace the execution of programs written in C language.	Comprehension (Level K2)
CO3.	Implement various concepts in C.	Application (Level K3)
CO4.	Implement programs with pointers and arrays, perform pointer arithmetic and use the pre-processor.	Application (Level K3)
CO5.	Write the C code for a given algorithm.	Analysis (Level K4) Synthesis (Level K5)
Sub. Code: MUCSA2		MATHEMATICS II (STATISTICS)
CO1.	Revise the formula of different Means, Median, Mode, Deviations, Correlation, Regression, Probability, Chi square test, Degree of Freedom, etc.	Knowledge (Level K1)
CO2.	Describe the formula of different Means, Median, Mode, Deviations, Correlation, Regression, Probability, Chi square test, Degree of Freedom, etc.	Comprehension (Level K2)
CO3.	Understand the concepts Central tendency, Dispersion, Correlation and regression, Probability and Sampling theory.	Comprehension (Level K2)
CO4.	Solve the problems by using formulas.	Comprehension (Level K2) Application (Level K3)
CO5.	Apply the suitable techniques of statistics to solve real time problems.	Application (Level K3)
Sub. Code: MUCSNA2		SBC II-NUMERICAL APTITUDE
CO1.	Recollect and describe the basic concepts of logical reasoning.	Knowledge (Level K1)

		Analysis (Level K4)
Sub. Code: MUCSC5 DATA STRUCTURES		
CO1.	Recognize fundamental concepts of Data structures, space complexity and time complexity.	Knowledge (Level K1)
CO2.	Understand linear data structures such as stacks, queues, linked list and non linear data structures such as trees and Graphs.	Knowledge (Level K1) Comprehension (Level K2)
CO3.	Apply appropriate data structure for a given application.	Application (Level K3)
CO4.	Implement different searching and sorting techniques.	Application (Level K3)
CO5.	Analyze efficient algorithms by acquiring knowledge about time and space complexities of the algorithms.	Analysis (Level K4) Synthesis (Level K5)
Sub. Code: MUCSL3 C++ WITH DATA STRUCTURES LAB		
CO1.	Understand Object oriented features and C++ concepts.	Comprehension (Level K2)
CO2.	Apply Object oriented features and C++ concepts.	Application (Level K3)
CO3.	Practice to solve the real world problems.	Application (Level K3)
CO4.	Apply to solve the real world problems.	Application (Level K3)
CO5.	Experiment various data structure concepts using C++.	Analysis (Level K4)
Sub. Code: MUCSA3 MATHEMATICS-III COMPUTER BASED OPTIMIZATION TECHNIQUES		
CO1.	Recall the concept of Operation Research.	Comprehension (Level K2)
CO2.	Describe the concept of Operation Research.	Comprehension (Level K2)
CO3.	Apply transportation and assignment problem to allocate resources.	Application (Level K3)
CO4.	Acquire the knowledge about game theory.	Analysis (Level K4)
CO5.	Validate network scheduling by PERT and CPM.	Synthesis (Level K5)
Sub. Code: MUCSHR3 SBC III- HUMAN RIGHTS		
CO1.	Know the basic rights and freedoms, regardless of their political, economical and cultural systems.	Knowledge (Level K1)
CO2.	Understand the importance and historical growth of the Human Rights.	Knowledge (Level K1)
CO3.	Describe historical growth of the Human Rights.	Comprehension (Level K2)
CO4.	Demonstrate the awareness of international context of human rights.	Comprehension (Level K2) Application (Level K3)

CO3.	Design principles using ER models and Normalization approach.	Comprehension (Level K2) Application (Level K3)
CO4.	Apply principles using ER models and Normalization approach.	Application (Level K3)
CO5.	Interpret SQL interface of a RDBMS package to create, secure, maintain and query a database and PL/SQL programming using Triggers and Cursors.	Analysis (Level K4)
Sub. Code: MUCSL7 .NET PROGRAMMING LAB		
CO1.	Understand the database connectivity with application programming.	Analysis (Level K4)
CO2.	Demonstrate the database connectivity with application programming.	Analysis (Level K4)
CO3.	Design and execute different kinds of tasks in real time application.	Analysis (Level K4)
CO4.	Apply different kinds of tasks in real time application.	Analysis (Level K4)
CO5.	Validate the results for the given input data.	Synthesis (Level K5)
Sub. Code: MUCSL8 RELATIONAL DATABASE MANAGEMENT SYSTEM LAB		
CO1.	Apply constraints in tables.	Analysis (Level K4)
CO2.	Figure out the need and use of database in application development.	Application (Level K3)
CO3.	Apply the uses of database in application development.	Application (Level K3)
CO4.	Describe the concepts of triggers and cursors.	Synthesis (Level K5)
CO5.	Evaluate the concepts of triggers and cursors.	Synthesis (Level K5)
Sub. Code: MUCSE1 COMPUTER GRAPHICS AND MULTIMEDIA		
CO1.	Recollect the basic concept of Graphical techniques.	Knowledge (Level K1)
CO2.	Describe about the basic concept of Graphical techniques.	Knowledge (Level K1)
CO3.	Get the idea about transformations.	Comprehension (Level K2)
CO4.	Implement various Clipping algorithms.	Application (Level K3)
CO5.	Demonstrate Omni various data types of Multimedia.	Analysis (Level K4)
Sub. Code: MUCSE2 INFORMATION SECURITY		
CO1.	Get an idea about information Security basis, Security Investigation, Security Analysis, Security models and Security Physical Design	Knowledge (Level K1)
CO2.	Understand Security Investigation and Security Analysis,	Knowledge (Level K1)

CO5.	Evaluate the software through various testing methods.	Synthesis (Level K5)
Sub. Code: MUCSPR PROJECT WORK		
CO1.	Understand the problem.	Comprehension (Level K2)
CO2.	Implement & execute the real time application.	Application(Level K3)
CO3.	Apply& execute the real time application.	Application(Level K3)
CO4.	Analyze various testing methods.	Analysis (Level K4)
CO5.	Verify the expected results in real time applications.	Synthesis (Level K5)
Sub. Code: MUCSE3 DIGITAL IMAGE PROCESSING		
CO1.	Recollect the various types of data in Multimedia.	Knowledge (Level K1)
CO2.	Understand the fundamental elements of DIP and representation of an image in multi-dimensional aspects.	Knowledge (Level K1) Comprehension (Level K2)
CO3.	Apply arithmetic and logical operations for image enhancement process.	Application (Level K3)
CO4.	Interpret the knowledge on compression techniques for security of an image.	Analysis (Level K4)
CO5.	Verify various deduction mechanisms in image segmentation.	Synthesis(Level K5)
Sub. Code: MUCSSS6 SBC VI - SOFT SKILLS		
CO1.	Describe the reading, writing, listening and communication skills.	Knowledge (Level K1)
CO2.	Discuss the reading, writing, listening and communication skills.	Comprehension (Level K2)
CO3.	Dramatize the day today activities with the help of soft skills.	Application (Level K3)
CO4.	Acquiring the necessary employability skills	Application (Level K3)
CO5.	Analyze and improve the skills for employability.	Analysis (Level K4)
Sub. Code: MUCSN2 NME II - COMPUTER FOR DIGITAL ERA		
CO1.	Describe about computer and apply the computing technology in their day to day life.	Knowledge (Level K1)
CO2.	Get an idea about computer and apply the computing technology in their day to day life.	Application (Level K3)
CO3.	To Know digital India initiatives to their surroundings.	Application (Level K3)
CO4.	Create awareness regarding digital India initiatives to their surroundings.	Application (Level K3)
CO5.	Apply digital India initiatives to their surroundings.	Application (Level K3)

PROGRAMME SPECIFIC OUTCOMES, PROGRAMME OUTCOMES AND COURSE OUTCOMES

PG & DEPARTMENT OF COMPUTER SCIENCE

M.Sc (COMPUTER SCIENCE) - COURSE

M.Sc (COMPUTER SCIENCE)

M.Sc (COMPUTER SCIENCE)/ PROGRAMMES SPECIFIC OUTCOMES

PSOs	PROGRAMME SPECIFIC OUTCOMES
PSO1	Apply standard Computer science practices and strategies in real-time software project development using open-source programming environment or commercial environment to deliver quality product for the organization success.
PSO2	Design and develop computer programs/computer-based systems in the areas related to algorithms, networking, web design, Grid and cloud computing.
PSO3	Able to pursue research in Data mining, Image processing and Networking areas and implement his work in MATAB and .Net environment.
PSO4	Ability to develop, design, implement computer programs and use knowledge in various domains to identify research gaps and hence to provide solutions to new ideas and innovations.
PSO5	Apply the acquired knowledge to develop software and innovative solutions by adopting emerging technologies.

M.Sc (COMPUTER SCIENCE)

M.Sc (COMPUTER SCIENCE)/ PROGRAMMES OUTCOMES

POs	Description of POs
PO1	Communicate computer science concepts, designs, and solutions effectively and professionally.
PO2	Apply knowledge of computing to produce effective designs and solutions for specific problems.
PO3	Identify, analyze, and synthesize scholarly literature relating to the field of computer science.
PO4	Use software development tools, software systems, and modern computing platforms.
PO5	Attend SET/NET exams with confidence

M.Sc (COMPUTER SCIENCE)/ COURSE OUTCOMES		
	Description of COs	Bloom's Taxonomy / Cognitive Domain
Sub. Code: MPCSC1 Mathematical Foundation of Computer Science		
CO1.	Recognize mathematical logics to solve computational problems.	Comprehension (Level K2)
CO2.	Examine the concepts of sets, relations and functions.	Application(Level K3)
CO3.	Formulate problems and solve recurrence relations.	Application(Level K3) Analysis (Level K4)
CO4.	Develop solutions for real world problems using graph theory.	Synthesis (Level K5)
CO5.	Evaluate the real world problems using graph theory.	Evaluation (Level K6)
Sub. Code: MPCSC2 Advanced java Programming		
CO1.	Understand the logics of applets, AWT event handling, Servlet and RMI.	Comprehension (Level K2)
CO2.	Write Servlets to access database using Java Data Base Connectivity (JDBC).	Application(Level K3)
CO3.	Applications of database using Java Data Base Connectivity (JDBC).	Application(Level K3)
CO4.	Demonstrate capabilities of server using the concept of Servlet.	Analysis(Level K4)
CO5.	Validate remote methods in an application using Remote Method Invocation (RMI.)	Synthesis(Level K5)
Sub. Code: MPCSC3 Advanced Operating System		
CO1.	Understand the concepts of distributed operating system.	Comprehension (Level K2)
CO2.	Describe the concepts of distributed operating system.	Comprehension (Level K2)
CO3.	Apply the concepts of synchronization and handle Deadlocks.	Application(Level K3)
CO4.	Examine the functionalities of distributed resource management.	Analysis(Level K4)
CO5.	Evaluate various operating systems such as multiprocessor operating system and database operating system.	Synthesis(Level K5)
Sub. Code: MPCSL1 Advanced Java Programming Lab		
CO1.	Execute interactive web pages using HTML and JavaScript.	Application(Level K3)
CO2.	Apply interactive web pages using HTML and JavaScript.	Application(Level K3)
CO3.	Acquire knowledge about Servlet and RMI.	Analysis(Level K4)

CO4.	To connect java program with external database using JDBC.	Synthesis(Level K5)
CO5.	Evaluate with external database using JDBC.	Synthesis(Level K5)
Sub. Code: MPCSL2 Web Technology Lab		
CO1.	Create web pages using HTML and CSS.	Application(Level K3)
CO2.	Describe web pages using HTML and CSS.	Application(Level K3)
CO3.	Apply JavaScript for interactive web pages.	Application(Level K3)
CO4.	Validate server side scripting using JSP.	Synthesis(Level K5)
CO5.	Evaluate server side scripting using JSP.	Synthesis(Level K5)
Sub. Code: MPCSE1 Design and Analysis of Algorithm		
CO1.	Get the idea of working principles of different algorithms.	Comprehension (Level K2)
CO2.	Understand the concept of various searching and sorting algorithms.	Application(Level K3)
CO3.	Apply the concept of various searching and sorting algorithms.	Application(Level K3)
CO4.	Analyze various design and analysis techniques such as greedy algorithms, dynamic programming, back tracking and branch & bound.	Analysis(Level K4)
CO5.	Evaluate time complexity using Asymptotic Notation.	Synthesis(Level K5)
Sub. Code: MPCSC4 Cryptography and Network Security		
CO1.	Describe cryptography and network security concepts and its application.	Comprehension (Level K2)
CO2.	Get the idea about encryption standards.	Comprehension (Level K2)
CO3.	Examine various cryptography algorithms.	Application(Level K3)
CO4.	Validate the authentication using digital signature and authentication protocols.	Synthesis(Level K5)
CO5.	Evaluate the authentication using digital signature and authentication protocols.	Synthesis(Level K5)
Sub. Code: MPCSC5 Data Mining		
CO1.	Understand the basic Concepts of data mining and data warehousing.	Comprehension (Level K2)
CO2.	Analyze various data mining techniques like classifications, clustering, association rule mining, prediction and related algorithm.	Analysis(Level K4)
CO3.	Choose appropriate data mining techniques to carry out simple data mining tasks.	Application(Level K3)
CO4.	Analyse data mining techniques to carry out simple data mining tasks.	Analysis(Level K4)

CO5.	Develop data mining algorithms to store heterogeneous data.	Synthesis(Level K5)
Sub. Code: MPCSC6 Python Programming		
CO1.	Get the basic knowledge about Python Programming.	Comprehension (Level K2)
CO2.	Apply essential programming concepts like strings, operators, conditional statements, functions, files and exception handling of Python in simple programs.	Application(Level K3)
CO3.	Analyze various concepts of Python.	Analysis (Level K4)
CO4.	Create applications using core concepts of Python.	Synthesis (Level K5)
CO5.	Evaluate applications using core concepts of Python.	Evaluation (Level K6)
Sub. Code: MPCSL3 Python Programming Lab		
CO1.	Implement various operators of Python.	Application(Level K3)
CO2.	Applications of various operators of Python.	Application(Level K3)
CO3.	Review the Python programs with variables, loop, functions and operators.	Analysis(Level K4)
CO4.	Analyze the Python programs with variables, loop, functions and operators.	Analysis(Level K4)
CO5.	Develop application with Python core concepts.	Synthesis(Level K5)
Sub. Code: MPCSL4 .Net Programming Lab		
CO1.	Develop simple VB.NET program using forms.	Application(Level K3)
CO2.	Apply simple VB.NET program using forms.	Application(Level K3)
CO3.	Execute VB.NET application with various controls.	Analysis(Level K4)
CO4.	Update database using SQL server.	Synthesis(Level K5)
CO5.	Evaluate database using SQL server.	Synthesis(Level K5)
Sub. Code: MPCSE2 Principles of Compiler Design		
CO1.	Examine the basic function of compiler and interpreter	Comprehension (Level K2)
CO2.	Understand the core concepts of phases of compiler	Comprehension (Level K2)
CO3.	Apply Context Free Grammar for simplify the expression using different kinds of parsers	Application(Level K3)
CO4.	Interpret the code generation and optimization process	Analysis(Level K4)
CO5.	Evaluate the code generation and optimization process	Synthesis(Level K5)
Sub. Code: MPCSC7 Big Data Analytics		

CO4.	Analyze various testing methods.	Analysis (Level K4)
CO5.	Verify the expected results in real time applications.	Synthesis(Level K5)