KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)

Re-accredited by NAAC with 'A+' Grade (4th Cycle)

College of Excellence (UGC)

Coimbatore – 641 029

DEPARTMENT OF COMPUTER SCIENCE (PG)

COURSE OUTCOMES (CO)

M. SC. COMPUTER SCIENCE

**For the students admittedin the
Academic Year 2020-2021**

Programme Code: 09		Title: M.Sc. Computer Science		
Course Code: 20PCS101		Title: Core Paper :Data Structures using Python		
Batch	Semester	Hours / Week	Total Hours	Credits
2020-2021	I	5	75	4

Course Objectives
1. To Inculcate the Knowledge of various data structures and definitions.
2. To provide the use of data structure background for programming with Python.
3. To develop the proficiency for planning & organizing the data structures.

Course Outcomes (CO)

K1	CO1	Students will get the knowledge of data structures and its usage
K2	CO2	Distinguish the Various data structures
K3	CO3	Skills to describe the data structures appropriately for programming
K4	CO4	Apply appropriate algorithms and data structures for various applications

Programme Code: 09		M.Sc Computer Science		
Course Code: 20PCS102		Core Paper 2 : Wireless Networks		
Batch	Semester	Hours / Week	Total Hours	Credits
2020-2021	I	5	75	4

Course Objectives
1. To impart adequate knowledge of wireless communication.
2. To provide exposure of various kinds of wireless communications with its architecture and different types of wireless networks.
3. To Familiarize IEEE wireless standards, Wi-max and Video coding.

Course Outcomes (CO)

K1	CO1	Students will get the knowledge of wireless communication
K2	CO2	Knows the structures and standards of wireless communication
K3	CO3	Describe the components & operations of various wireless networks
K4	CO4	Access the standards and types of wireless networks

Programme Code: 09		M.Sc Computer Science		
Course Code:20PCS103		Core Paper 3 - Relational Database Management Systems		
Batch	Semester	Hours / Week	Total Hours	Credits
2020-2021	I	5	75	4

Course Objectives
1. To understand and apply the principles of data modelling using Entity Relationship and develop a good database design.
2. To understand the use of SQL and its syntax and apply Normalization.
3. To understand the concept of information retrieval.

Course Outcomes (CO)

K1	CO1	Student will master the basic concepts of Databases
K2	CO2	Student will have high level understanding of relational model and SQL.
K3	CO3	Student will be proficient in data Normalization
K4	CO4	Students will understand security concept and informational retrieval.

rogramme Code: 09		M.Sc Computer Science		
Course Code: 20PCS1CL		Core Practical 1: Data Structures using Python Lab		
Batch	Semester	Hours / Week	Total Hours	Credits
2020-2021	I	5	75	3

Course Objectives
1. To Inculcate the Knowledge of various data structures and definitions.
2. To provide the use of data structure background for programming.
3. To make a decision of appropriate data structure for programming.

Course Outcomes (CO)

K3	CO1	Distinguish the Various data structures
K3	CO2	Skills to describe the data structures appropriately for programming
K4	CO3	Apply appropriate algorithms and data structures for various applications
K5	CO4	Evaluate the Various Data Structures with various applications

Programme Code: 09		M.Sc Computer Science			
Course Code: 20PCS1CM		Core Practical 2 : RDBMS Lab			
Batch	Semester	Hours / Week		Total Hours	Credits
2020-2021	I	5		75	3

Course Objectives

1. To define schema and creation of Databases.

2. To write SQL Queries to retrieve information from Databases.

3. To use host language interface with Embedded SQL.

Course Outcomes (CO)

K3	CO1	Creation of Databases
K3	CO2	Retrieval of Information of Databases
K4	CO3	Use of Forms and Report writer packages
K5	CO4	Use of host language interface with Embedded SQL

20PCS204

Programme Code: 09	M.Sc. Computer Science			
Course Code: 20PCS204	Core Paper 4 : Advanced Java Programming			
Batch	Semester	Hours / Week	Total Hours	Credits
2020-2021	II	4	60	4

Course Objectives

1. To understand the basic concepts of Object oriented programming.

2. To inculcate the concepts of networking and graphics offering a GUI environment.

3. To educate the concepts of database management and essentials of Servlets

Course Outcomes (CO)

K1	CO1	Ability to understand the applications in OOPS paradigm.
K2	CO2	Student can establish Client-Server network and enable Multithreaded applications
K3	CO3	Will Effectively use Applets , Event and Construction of Bean API , providing a GUI environment,
K4	CO4	Capable of better Backend Management, Can compose complex Applications with Swings and Servlet.

Programme Code: 09		M.Sc Computer Science			
Course Code: 20PCS205		Core Paper 5 : Data mining and Warehousing			
Batch	Semester	Hours / Week		Total Hours	Credits
2020-2021	II	4		60	4

Course Objectives

1. To inculcate the basics of Data Mining and Data Warehousing.

2. To recognize the various data mining and warehousing tools in the business environment/ state of the market.

3. To develop the proficiency for planning & applying the DM techniques.

Course Outcomes (CO)

K1	CO1	Understand the basics of DataMining & DataWarehousing.
K2	CO2	Identify the appropriate Data Mining techniques for problem solving
K3	CO3	Demonstration of various data mining techniques and ware housing tool
K4	CO4	Implement the methods and techniques to develop a small Project

Programme Code: 09		M.Sc Computer Science		
Course Code: 20PCS206		Core Paper 6 - .Net Framework		
Batch	Semester	Hours / Week	Total Hours	Credits
2020-2021	II	4	60	4

Course Objectives

1. To understand .Net framework features like portability and language interoperability concepts.
2. To understand the vb.Net and ASP.Net controls.
3. To understand how to work with database with the help of ADO.Net.

Course Outcomes (CO)

K1	CO1	Student will be able to understand .Net framework concepts.
K2	CO2	Student will be able to remember VB.Net controls windows application.
K3	CO3	Student will be able to analyse how to use a ASP.Net controls and web application.
K4	CO4	Student will be able to create or apply database driven Windows application and ASP.Net web applications.

Programme Code: 09		M.Sc Computer Science			
Course Code: 20PCS207		Core Paper 7 : Software Development and Quality Assurance			
Batch	Semester	Hours / Week	Total Hours		Credits
2020-2021	II	4	60		4

Course Objectives

1. To understand the concepts of software project and product life cycle.

2. To analyze software requirements, design and development of the project.

3. To equip testing and ensuring the software Quality Assurance.

Course Outcomes (CO)

K1	CO1	Students will be aware of project and product life cycle and its requirements.
K2	CO2	Thorough understanding in various key aspects which are involved in the process of project development.
K3	CO3	Gathering requirements enable the students to analyze them in order to achieve goal.
K4	CO4	Applying all the techniques and methods learned to improve the quality of the software.

Programme Code: 09		M.Sc Computer Science			
Course Code: 20PCS2CN		Core Practical 3 : Advanced Java Lab			
Batch	Semester	Hours / Week	Total Hours		Credits
2019-2020	II	5	75		3

Course Objectives

1. The course inculcates the fundamentals and dynamics of OOPs paradigm.

2. To demonstrate the the GUI and advanced functionalities enriching the development skill.

3. To simulate the industrial demands and expertise in the specified domain.

Course Outcomes (CO)

K3	CO1	Students will be capable to understand and apply the better usage of OOPs concept.
K3	CO2	Proficient in developing GUI environment and event handling
K4	CO3	Establishing networks with socket programming and Sessions
K5	CO4	Simulates applications with Swings and Servlets.

Programme Code: 09		M.Sc Computer Science		
Course Code: 20PCS2CO		Core Practical 4 : .NET Lab		
Batch	Semester	Hours / Week	Total Hours	Credits
2020-2021	II	5	75	3

Course Objectives

1. To educate the usage of .Net framework Environment.

2. To understand the usage of controls in .Net.

3. To create database application with ADO.Net.

Course Outcomes (CO)

K3	CO1	Effective use of .Net framework concepts.
K3	CO2	Develop a working knowledge of VB.Net controls
K4	CO3	Student will be able to build well formed web controls with validation
K5	CO4	Student will be able to create or apply database driven Windows application and ASP.Net web applications.

Programme Code: 09	M.Sc Computer Science			
Course Code: 20PCS308	Core Paper 8 : Web Technologies.			
Batch	Semester	Hours / Week	Total Hours	Credits
2020-2021	III	5	75	4

Course Objectives

1. To educate the benefits of proprietary and non proprietary softwares.

2. To inculcate the significance of freeware Web Technologies

3. To promote the web designing skills and data handling with Server side scripts.

Course Outcomes (CO)

K1	CO1	Will enhance their presentation skills in designing, recollecting Html tags.
K2	CO2	Students can escalate their web design and prune it to perfection with style sheets
K3	CO3	Can enhance data manipulation at client end will have sound knowledge in data validation and handling dynamic data with Php fundamentals
K4	CO4	Handling challenges at backend, performing validation at Server end with PHP-MySQL suite

Programme Code: 09	M.Sc. Computer Science			
Course Code: 20PCS309	Core Paper 9: Unix Programming			
Batch	Semester	Hours / Week	Total Hours	Credits
2020-2021	III	5	75	4

Course Objectives

1. To understand the basic set of commands and utilities in UNIX systems.

2. To provide a comprehensive introduction to Shell Programming.

3. To develop an essential skills required to write simple and complex Shell scripts to automate the applications

Course Outcomes (CO)

K1	CO1	Obtain a foundation for unix operating systems.
K2	CO2	Manifestation of various unix command and its usage.
K3	CO3	Make effective use of Unix shell scripting.
K4	CO4	Exposure to develop software using Unix/Linux systems.

Programme Code: 09		M.Sc Computer Science		
Course Code: 20PCS310		Core Paper 10: Big Data Analytics		
Batch	Semester	Hours / Week	Total Hours	Credits
2020-2021	III	5	75	4

Course Objectives

1. To introduce the basic concepts of big data.

2. To face the challenges of big data.

3. To teach students in applying skills and tools to manage and analyse big data

Course Outcomes (CO)

K1	CO1	Understand the concept and challenges of big data.
K2	CO2	Collect, manage, store, store, query and analyse various forms of big data.
K3	CO3	Gain hands-on experience on large-scale analytics tools to solve some open big data problems.
K4	CO4	Understand the big data tools like Hadoop,Hbase,NoSQL and Neo4J

Programme Code: 09		M.Sc Computer Science		
Course Code: 20PCS3CP		Core Practical 5 : Web Technologies Lab		
Batch	Semester	Hours / Week	Total Hours	Credits
2020-2021	III	5	75	3

Course Objectives

1. The course educates the advanced concepts in web designing with Open Source tools.

2. To demonstrate the development of web application and its validation.

3. To inculcate the significance of Server Scripts and simulating applications with backends.

Course Outcomes (CO)

K3	CO1	Posses better presentation and manipulating skills for developing a dynamic web page
K3	CO2	Validating the essentials in an application using JavaScript .
K4	CO3	Capable to develop Web application with Server script
K5	CO4	Performs better Data manipulation for web application using PHP-Mysql suite.

Programme Code: 09		M.Sc. Computer Science		
Course Code: 20PCS3CQ		Core Practical 6 : Unix Programming Lab		
Batch 2020-2021	Semester III	Hours / Week 5	Total Hours 75	Credits 3

Course Objectives

1. Execute the basic set of commands and utilities in Linux/UNIX systems.

2. To write shell scripts to solve regular exercises.

3. To implement some standard Linux/Unix utilities and can able to develop some software applications

Course Outcomes (CO)

K3	CO1	Make effective use of Unix utilities, and scripting languages
K3	CO2	Apply shell scripts to develop a small types of applications
K4	CO3	Exposure to develop a software using Unix/Linux systems
K5	CO4	Execution of simple programs and shell script with various applications

Programme Code: 09	M.Sc. Computer Science			
Course Code: 20PCS411	Core Paper 11 : Internet of Things			
Batch	Semester	Hours / Week	Total Hours	Credits
2020-2021	IV	5	75	4

Course Objectives

1. To understand Smart Objects and IoT Architectures

2. To learn about various IOT - related protocols

3. To develop IoT infrastructure for popular applications

Course Outcomes (CO)

K1	CO1	Students will get the knowledge of IoT
K2	CO2	Understand the IoT Protocols & IoT Access Technologies
K3	CO3	Describe Design & Development of IoT
K4	CO4	Know IoT supporting services

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Programme Code: 09	M.Sc Computer Science			
Course Code: 20PCS4CR	Core Practical 7 : Internet of Things Lab			
Batch	Semester	Hours / Week	Total Hours	Credits
2020-2021	IV	5	75	3

Course Objectives

1. To understand IoT techniques.
2. To introduce IoT Application using IDEs
3. To know how to Implement IoT.

Course Outcomes (CO)

K3	CO1	Effective use of IoT
K3	CO2	Ability to use different IDEs for IoT implementation.
K4	CO3	Student can able to implement IoT Applications
K5	CO4	Student can able to embed IoT Applications

Programme Code: 09	MSc. Computer Science			
Course Code: 20PCS4Z1	Project Work and Viva-Voce			
Batch	Semester	Hours / Week	Total Hours	Credits
2020-2021	IV	15	225	5

Course Objectives

1   To develop real time applications.
2   To implement the concepts of Software Project Management.
3   To teach students in applying skills and tools to manage and develop a solution.

Course Outcomes (CO)

K1	CO1	Understand the concept and challenges of market.
K2	CO2	Collect, manage ,plan and develop a real time application.
K3	CO3	Gain hands-on experience on different project models.
K4	CO4	Helps to understand the complexity and maintaining quality.

Programme Code: 09		M.Sc Computer Science		
Course Code:		Elective Paper : Network Security and Cryptography		
Batch 2020-2021	Semester	Hours / Week	Total Hours	Credits 4

Course Objectives

1. To familiarize basic concepts of cryptography and algorithms.

2. To know about various security issues.

3. To understand the process of implementing the cryptographic algorithms.

Course Outcomes (CO)

K1	CO1	Understanding fundamental concepts of network security.
K2	CO2	Knowing how the encryption and decryption are done.
K3	CO3	Familiarize various kinds of viruses and related threats.
K4	CO4	Implementing various cryptography algorithms.

Programme Code: 09		M.Sc Computer Science		
Course Code:		Elective Paper : Bio Inspired Computing		
Batch 2020-2021	Semester	Hours / Week	Total Hours	Credits 4

Course Objectives

1. To Inculcate the basics of Bio-Inspired algorithms
2. To provide exposure of various kinds of Heuristic and Meta-heuristics algorithms
3. To develop the proficiency for planning & implementing the various Bio-Inspired algorithms.

Course Outcomes (CO)

K1	CO1	Obtain a foundation for Bio-Inspired algorithms
K2	CO2	Distinguish nature based algorithms and bio inspired algorithms
K3	CO3	Most real-world optimization problems can be recognized
K4	CO4	Apply relevant Bio-Inspired problem solving methodologies for optimization

Programme Code: 09	M.Sc Computer Science			
Course Code:	Elective Paper : Advanced Computing			
Batch 2020-2021	Semester	Hours / Week	Total Hours	Credits 4

Course Objectives
1. To Inculcate the basics of Grid Computing Architecture and Framework
2. To provide exposure to Cluster Computing Middlewares
3. To understand the concepts of Cloud Computing and its Applications

Course Outcomes (CO)

K1	CO1	Obtain a foundation for Grid Computing Concepts and Architecture
K2	CO2	Exposure to various toolkits used in Grid
K3	CO3	Proficient in single system image
K4	CO4	Apply Cloud in various Real-time Applications

Programme Code: 09	M.Sc Computer Science			
Course Code:	Elective Paper : Green Computing			
Batch 2020-2021	Semester	Hours / Week	Total Hours	Credits 4

Course Objectives
1. To introduce students the concepts of Green computing
2. To understand the concept of green Enterprise architecture and how to minimize e-waste.
3. To teach students in applying skills to manage the Environmentally Responsible Business

   Strategies (ERBS).

Course Outcomes (CO)

K1	CO1	Understand how to build environmentally responsible business policies, practices and metrics.
K2	CO2	Understand the concepts of green assets and modelling, green enterprise architecture, green information system.
K3	CO3	Understand the concepts of Grid framework and green data centre.
K4	CO4	Apply Green IT strategies and applications to a home, Hospital, packaging industry and telecom sector.

Programme Code: 09		M.Sc Computer Science		
Course Code:		Elective paper : Artificial Intelligence and Machine Learning		
Batch 2020-2021	Semester	Hours / Week	Total Hours	Credits 4

Course Objectives
1. To familiarize AI problems and AI techniques.
2. To learn various search techniques and knowledge representations.
3. To inculcate expert system concepts and applying them to solve the problems.

Course Outcomes (CO)

K1	CO1	Understanding basic concepts Artificial Intelligence, AI problems and its techniques.
K2	CO2	Analyze state space search, problem characteristics and knowledge representations.
K3	CO3	Students can able to differentiate between different types of learning.
K4	CO4	Students can solve the problem by acquiring knowledge of supervised and unsupervised learning.

Programme Code: 09		M.Sc Computer Science		
Course Code:		Elective Paper : Computational Intelligence		
Batch 2020-2021	Semester	Hours / Week	Total Hours	Credits 4

Course Objectives
1. To understand the fundamental of neural networks.
2. To understand the concepts of machine intelligence applications of fuzzy logic.
3. To understand the basics of an evolutionary computing paradigm known as genetic algorithms and its application to engineering optimization problems.

Course Outcomes (CO)

K1	CO1	Student will be able to understand concepts of neural networks, neuro-modeling, several neural network paradigms and its applications.
K2	CO2	Student will be able to remember fuzzy sets, knowledge representation using fuzzy rules.
K3	CO3	Student will be able study approximate reasoning, fuzzy inference systems, and fuzzy logic control and other machine intelligence applications of fuzzy logic
K4	CO4	Student will be able know genetic algorithms and its application to engineering optimization problems

Programme Code: 09		M.Sc Computer Science		
Course Code:		Elective Paper : Information Security		
Batch	Semester	Hours / Week	Total Hours	Credits
2020-2021				4

Course Objectives

1. The course is intended to preach the common goals of security.

2. To educate the Legal issues of Information Security and its cons.

3. To inculcate the Security Technologies and its methods of implementation.

Course Outcomes (CO)

K1	CO1	Understanding the fundamental and history of Information Security, its legal and professional issues.
K2	CO2	Aware of Intrusion Detection tools and Biometric controls in market.
K3	CO3	Capable to handle sensitive real time security technologies and establishing VPNs
K4	CO4	Students are able to implement information security projects and its technical aspects.

Programme Code: 09		M.Sc Computer Science		
Course Code:		Elective Paper : Robotics		
Batch	Semester	Hours / Week	Total Hours	Credits
2020-2021				4

Course Objectives

1. To introduce the functional elements of Robotics.
2. To educate on various path planning techniques.
3. To understand the application of robotics in real life.
4. To introduce robotic safety standards.

Course Outcomes (CO)

K1	CO1	Successful student will be able to understand Robotics concepts.
K2	CO2	Successful student will be able to remember Robotics Path and motion controls.
K3	CO3	Successful student will be able to analyse how to use sensors in robotics.
K4	CO4	Successful student will be able to create or apply robotic models in real time.

Programme Code: 09		M.Sc . Computer Science		
Course Code:		Elective Paper : Digital Image Processing		
Batch 2020-2021	Semester	Hours / Week	Total Hours	Credits 4

Course Objectives
1. To be exposed with the basic concepts of image processing.
2. To understand image enhancement techniques through filtering techniques.
3. To understand color models.
4. To be exposed with image segmentation and compression techniques

Course Outcomes (CO)

K1	CO1	Understanding about the fundamental of digital image processing
K2	CO2	Knowing about image enhancements and various filtering mechanisms
K3	CO3	Familiarizing the concepts of transformation, restoration and color models
K4	CO4	Implementing the concepts of image segmentation and compression.

Non Major Elective Papers

Programme Code: 09		M.Sc Computer Science		
Course Code:		Non-Major Elective Paper : Management Information Systems		
Batch 2020-2021	Semester	Hours / Week	Total Hours	Credits 4

Course Objectives
1. Students will identify the core concepts of Management Information Systems
2. To examine the concepts of business and information.
3. To design and implement the manufacturing sector

Course Outcomes (CO)

K1	CO1	Student will learn the principles and fundamentals of business management
K2	CO2	Demonstrate knowledge of the Information concepts
K3	CO3	Student will able to configure and develop a Management Information Systems
K4	CO4	Analyses the various streams of manufacturing sector

Programme Code: 09		M.Sc. Computer Science		
Course Code:		Non-Major Elective Paper : Bio Informatics		
Batch 2020-2021	Semester	Hours / Week	Total Hours	Credits 4

Course Objectives

1. To enable the student to know about all biological databases, perl programming.
2. To understand different structure and functions.
3. To learn the different modeling techniques & sequence analysis.

Course Outcomes (CO)

K1	CO1	Student will learn the principles and fundamentals of sequence analysis
K2	CO2	Demonstrate knowledge of the biological concepts and datadbases
K3	CO3	Student will able to configure the elements of perl programming
K4	CO4	Analyses the structural biology and molecular modelling

Programme Code: 09		M.Sc Computer Science		
Course Code:		Non-Major Elective Paper : Business Intelligence		
Batch 2020-2021	Semester	Hours / Week	Total Hours	Credits 4

Course Objectives

1. To be exposed with the basic rudiments of business intelligence system
2. To understand the modeling aspects behind Business Intelligence
3. To understand business intelligence life cycle and the techniques used .
4. To be exposed with different data analysis tools and technique

Course Outcomes (CO)

K1	CO1	Understanding fundamental concepts within Business Intelligence,
K2	CO2	Knowing how decision analysis and decision processes are carried out in businesses
K3	CO3	Familiarize concepts, theories and methods within data warehousing
K4	CO4	Implementing the relationship of data warehouses to production and operational systems,

Extra Departmental Course

Programme Code: 09		M.Sc. Computer Science		
Course Code:		EDC Paper : Internet and Web Designing Lab		
Batch	Semester	Hours / Week	Total Hours	Credits
2020-2021	III	2	30	2

Course Objectives

1. To educate the benefits of the Internet.
2. To promote web designing skills using html tags.
3. Students can understand usage of CSS in web designing.

Course Outcomes (CO)

K1	CO1	Understand the concepts of Internet and Internet Addresses and DNS.
K2	CO2	To enhance the usage of E-Mail.
K3	CO3	Understand how to create a website with HTML tags like table tag, frame tag and hyperlink
K4	CO4	Can apply their knowledge to create dynamic website using html and CSS.