

## **M.Sc. Computer Science Syllabus 2021 Onwards**

### **COURSE OUTCOMES**

#### **SEMESTER - I**

**COURSE CODE:P21CST11**

**SUBJECT: JAVA PROGRAMMING**

#### **COURSE OUTCOMES:**

On successful completion of the course, the student will be able to

CO1: Define the Applet fundamentals, GUI applications and AWT components. K1

CO2: Discuss about Networking in java and Java database connectivity. K2

CO3: Understand the concept of Servlets. K2

CO4: Understand the concepts JSP and HTTP. K3

CO5: Discuss about the Web programming on client side and server side. K4

**COURSE CODE:P21CST12**

**SUBJECT:DATA STRUCTURES AND ALGORITHMS**

#### **COURSE OUTCOMES:**

On successful completion of the course, the student will be able to

CO1: Describe the dynamic structures—trees and graphs and discuss the application of these structures in finding simplified solutions K1

CO2: Describe hash and priority queues and its application K2

CO3: Implement binary search tree, balanced tree and multi-way indexed tree K2

CO4: Solve problems using dynamic programming and apply traversal techniques of trees and graphs K3

CO5: Analyze and solve problems using backtracking and branch-and-bound technique. K4

**COURSE CODE:P21CST13    SUBJECT:DISCRETE MATHEMATICALSTRUCTURES**

#### **COURSE OUTCOMES:**

On successful completion of the course, the student will be able to

CO1:Impart knowledge on mathematical logic and theory of inference K1

CO2:Understand the concept of sets, relations, functions and mapping. K2

CO3: Understand the concepts of Automata Theory, Regular expressions, NFA and Turing Machine K3

CO4: Understand the concept of Probability theory. K2

CO5: Understand the graph theory concepts and applications in computer science. K4

**COURSE CODE:P21CST14**

**SUBJECT:COMPILER DESIGN**

**COURSE OUTCOMES:**

On successful completion of the course, the student will be able to

CO1: Describe the basics of Compiler Structure K3

CO2: Analyze the functioning of Lexical Analyzer and implementation using Finite Automata. K2

CO3: Understand the role of Context Free Grammar and Parsing Techniques K1

CO4: Analyze the working methodology of LR Parsers and Representation of Intermediate Code Generation Phase K4

CO5: Discuss about the Data Structures used by Compiler, various Code Optimization Sources and apply the techniques K4

**SEMESTER –II**

**COURSE CODE:P21CST21**

**SUBJECT:PYTHON PROGRAMMING**

**COURSE OUTCOMES:**

On successful completion of the course, the student will be able to

CO1:Describe the basic concepts of python programming, Functions and control structures K2

CO2:Understand Strings, Mutable and immutable objects.

K3 CO3:Understand Recursion and Files and exception. K2

CO4:Discuss classes, objects, polymorphism, encapsulation and inheritance. K3

CO5:Apply python for collecting information from twitter, sharing data using sockets, managing database, and mobile application for android. K4

**COURSE CODE:P21CST22**

**SUBJECT:CRYPTOGRAPHY AND NETWORK SECURITY**

**COURSE OUTCOMES:**

On successful completion of the course, the student will be able to

CO1: Understand the Number Theory K1

CO2: Understand the basics of Cryptography K2  
CO3: Understand Hash Functions and Cryptography K3  
CO4: Understand Security Procedure and System Security K3  
CO5: Understand the various Security Services K4

**COURSE CODE:P21CST23**

**SUBJECT:DISTRIBUTED OPERATING SYSTEM**

**COURSE OUTCOMES:**

On successful completion of the course, the student will be able to

CO1: Understand the Operating System Structure and its Services K1  
CO2: Understand the efficient Scheduling of Multiple Process Execution. K2  
CO3: Understand the efficient allocation of available memory among multiple processes K3  
CO4: Understand the Device Management System K3  
CO5: Compare and Contrast the features of Windows and LINUX operating Systems in terms of their services. K4

**COURSE CODE:P21CST24**

**SUBJECT:NoSQL DATABASES**

**COURSE OUTCOMES:**

On successful completion of the course, the student will be able to

CO1: Acquire a deep knowledge on relational Database, Structured Query Language and Data Modeling K1  
CO2: Acquire the Knowledge on MongoDB query language K2  
CO3: Comprehend the principles of NoSQL K2  
CO4: Differentiate NoSQL key value database and Document database K2  
CO5: Know the concept of Column database and Understand the data modeling techniques K2

**SEMESTER-III**

**COURSE CODE:P21CST31**

**SUBJECT:DIGITAL IMAGE PROCESSING**

**COURSE OUTCOMES:**

On successful completion of the course, the student will be able to

CO1: To impart the knowledge about image processing techniques and understand the concept of image analysis, storage formats of image K1

CO2: To analyze the attitude of image processing arithmetic operations and image transformation techniques. K2

CO3: Discuss about the image need for image enhancement and use of image restoration. K3

CO4: To understand the concept to fit image compression models, measures and algorithms. K3

CO5: Understand the role of image segmentation, various color models and color image transformation K4

**COURSE CODE:P21CST32**

**SUBJECT:CLOUD COMPUTING**

**COURSE OUTCOMES:**

On successful completion of the course, the student will be able to

CO1: Describe the Cloud Architecture and Model. K1

CO2: Analyze the basics and applications of Virtualization. K3

CO3: Understand the different Cloud Infrastructure. K2

CO4: Understand different programming model. K4

CO5: Discuss the Cloud Security Challenges and Risks. K4

**COURSE CODE:P21CST33**

**SUBJECT:ARTIFICIAL INTELLIGENCE AND MACHINE  
LEARNING ALGORITHMS**

**COURSE OUTCOMES:**

On successful completion of the course, the student will be able to

CO1: Understand the problem domain, problem formulation and introducing intelligent agents K1

CO2: Analyze the functioning of various searching methodologies in AI K2

CO3: Introduction to Machine Learning K3

CO4: Understand Regression Models K3

CO5: Understand Advanced Machine Learning Algorithms K4

**COURSE CODE:P21CST34**

**SUBJECT:INTERNET OF THINGS**

**COURSE OUTCOMES:**

On successful completion of the course, the student will be able to

- CO1: Understand the definition and significance of the Internet of Things. K1
- CO2 : Discuss the architecture, operation, and business benefits of an IoT solution. K2
- CO3: Examine the potential business opportunities that IoT can uncover. K3
- CO4: Explore the relationship between IoT, cloud computing, and big data. K3
- CO5: Identify how IoT differs from traditional data collection systems K4

#### **SEMESTER-IV**

**COURSE CODE:P21CSE411 CHOICE- I OBJECT ORIENTED ANALYSIS AND DESIGN**

**COURSE OUTCOMES:**

On successful completion of the course, the student will be able to

- CO1: Describe the basics of Object Oriented concepts K1
- CO2: Analyze the function in g methodologies provided by Boochand Jacobson; Introduction on unified approach. K2
- CO3: IllustrationofUMLdiagramsaplicabletovariousphasesofsoftwaredevelopment. K3
- CO4: Study on Relationship between various objects in the application and various ways of their reorientations K3
- CO5: Import knowledge on packaging classes, distributing them among layers & introducing the object-oriented databases. K4

**COURSE CODE:P21CSE412 CHOICE – II COMPUTATIONAL LINGUISTICS**

**COURSE OUTCOMES:**

On successful completion of the course, the student will be able to

- CO1: Develop Tamil Computing Tools. K2, K5
- CO2: Analyse sentences using Shallow Parser. K5
- CO3: Extract Syntactic information using Deep Parser. K4
- CO4: Apply Machine Translation. K3
- CO5: Develop Tamil Corpus. K4,K5

**COURSE CODE:P21CSE413 CHOICE – III CLIENT SERVER COMPUTING**

**COURSE OUTCOMES:**

On successful completion of the course, the student will be able to

- CO1: Comprehend the basic concepts of the client-server model. K1
- CO2: Understand how Client-Server systems work K2
- CO3: Differentiate between two-tier and three-tier architectures. K3
- CO4: Improve the performance and reliability of Client Server based systems. K3
- CO5: Identify security and ethical issues in Client Server Computing K4

**COURSE CODE:P21CSE421**

**CHOICE –I BIG DATA ANALYTICS**

**COURSE OUTCOMES:**

On successful completion of the course, the student will be able to

- CO1: Describe the basics of Big Data, Types of Data and Data Warehouse Environment K1
- CO2: Understand the Data Analytics, Evolution, Importance, Tools, Technology and Data Science K3
- CO3: Analyze the technologies and comparison of No SQL, RDMS, Hadoop, and YARN K2
- CO4: Analyze the working methodology of Map Reduce and Hive Query Language K4
- CO5: Implement the Machine Learning Algorithms K4

**COURSE CODE:P21CSE422**

**CHOICE – II SOFT COMPUTING**

**COURSE OUTCOMES:**

On successful completion of the course, the student will be able to

- CO1: Introduce the basic concepts and techniques of Soft Computing K2
- CO2: Differentiate Biological and Artificial Neural Network and Explain the types of Neural Networks K3
- CO3: Analyze various fuzzy models in developing fuzzy inference systems to be appropriate with specific real time problems K4
- CO4: Use genetic algorithms to combinatorial optimization problems K1
- CO5: Discuss the Optimization techniques Swam Intelligence and Antcolony optimization K4

**COURSE CODE:P21CSE423**

**CHOICE – III WIRELESS SENSOR NETWORKS**

**COURSE OUTCOMES:**

On successful completion of the course, the student will be able to

CO1: Discuss about Networked wireless sensor devices, design challenges and topology K1

CO2: Analyze the Localization, synchronization issues and approaches K2

CO3: Understand the wireless characteristics, MAC protocols and contention free protocols K2

CO4: Construct topology for connectivity, coverage and routing techniques. K3

CO5: Discuss about the data centric routing and Reliability and congestion control K4