KARPAGAM INSTITUTE OF TECHNOLOGY,COIMBATORE – 105.

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

REGULATIONS 2021

SEMESTERIII

Course Code / Course Name: CS3352/FOUNDATIONSOFDATASCIENCE

Year / Branch: II /CSE

CO No.	Course Outcomes (COs)	Learning Level
CO1	Define the data science process	K2
CO2	Understand different types of data description for datascience process	K2
CO3	Make use of knowledge on relationships between data	K3
CO4	Use the Python Libraries for Data Wrangling	K3
CO5	Apply visualization Libraries in Python to interpret and explore data	K3

Course Code / Course Name: CS3301/DATA STRUCTURES

Year / Branch: II /CSE

CO No.	Course Outcomes (COs)	Learning Level
CO1	Define linear and non-linear data structures.	K2
CO2	Illustrate linear and non–linear data structure operations.	K2
CO3	Use appropriate linear/non–linear data structure operations for solving a given problem.	K3
CO4	Apply appropriate graph algorithms for graph applications.	K3
CO5	Analyze the various searching and sorting algorithms.	K4

Course Code / Course Name: CS3311/ DATA STRUCTURES LABORATORY

Year / Branch: II /CSE

CO No.	Course Outcomes (COs)	Learning Level
CO1	Implement Linear data structure algorithms.	K2
CO2	Implement applications using Stacks and Linked lists	K2
CO3	Implement Binary Search tree and AVL tree operations	K2
CO4	Implement graph algorithms.	K2
CO5	Analyze the various searching and sorting algorithms.	K4

Course Code / Course Name: CS3381/ OBJECT ORIENTED PROGRAMMING LABORATORY

Year / Branch: II /CSE

CO No.	Course Outcomes (COs)	Learning Level
CO1	Design and develop java programs using objectoriented programming concepts	K4
CO2	Develop simple applications using object oriented concepts such as package, exceptions	K3
CO3	Illustrate multithreading, and generics concepts	K2
CO4	Create GUIs and event driven programming applications for real world problems	K3
CO5	Construct and deploy web applications using Java	K3

Course Code / Course Name: CS3361/ DATA SCIENCE LABORATORY

Year / Branch: II /CSE

CO No.	Course Outcomes (COs)	Learning Level
CO1	Make use of the python libraries for data science	K3
CO2	Make use of the basic Statistical and Probability measures for data science.	K3
CO3	Perform descriptive analytics on the benchmark data sets.	K3
CO4	Perform correlation and regression analytics on standard data sets	K3
CO5	Present and interpret data using visualization packages in Python.	K2

Course Code / Course Name: CS3391/ OBJECT ORIENTED PROGRAMMING

Year / Branch: II /CSE

CO No.	Course Outcomes (COs)	Learning Level
CO1	Apply the concepts of classes and objects to solve simple problems	K3
CO2	Develop programs using inheritance, packages and interfaces	K3
CO3	Make use of exception handling mechanisms and multithreaded model to solve real world problems	K3
CO4	Build Java applications with I/O packages, string classes, Collections and generics concepts	K3
CO5	Integrate the concepts of event handling and JavaFX components and controls for developing GUI based applications	K3

SEMESTER IV

Course Code / Course Name: CS3491/ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

Year / Branch: II /CSE

CO No.	Course Outcomes (COs)	Learning Level
CO1	Use appropriate search algorithms for problem solving	K3
CO2	Apply reasoning under uncertainty	K3
CO3	Build supervised learning models	K3
CO4	Build ensembling and unsupervised models	K3
CO5	Build deep learning neural network models	K2

Course Code / Course Name: **CS3401/ALGORITHMS**

Year / Branch: II /CSE

CO No.	Course Outcomes (COs)	Learning Level
CO1	Analyze the efficiency f algorithms using various frameworks	K4
CO2	Apply graph algorithms to solve problems and analyze their efficiency.	K3
CO3	Make use of algorithm design techniques like divide and conquer, dynamic programming and greedy techniques to solve problems	K3
CO4	Use the state space tree method for solving problems.	K3
CO5	Solveproblemsusingapproximationalgorithmsandrandomizedalgorithms	K3

Course Code / Course Name: **CS3492/DATABASEMANAGEMENTSYSTEMS**

Year / Branch: II /CSE

CO No.	Course Outcomes (COs)	Learning Level
CO1	Construct SQL Queries using relational algebra	K3
CO2	Design database using ER model and normalize the database	K4
CO3	Construct queries to handle transaction processing and maintain consistency of the database	K3
CO4	Compare and contrast various indexing strategies and apply the knowledge to tune the performance of the database	K2
CO5	Appraise how advanced databases differ from Relational Databases and find a suitable database for the given requirement	K3

SEMESTER IV

Course Code / Course Name:
CS3481/DATABASEMANAGEMENTSYSTEMSLABORATORY

Year / Branch: II /CSE

CO No.	Course Outcomes (COs)	Learning Level
CO1	Create databases with different types of key constraints.	K3
CO2	Construct simple and complex SQL queries using DML and DCL commands.	K3
CO3	Use advanced features such as stored procedures and triggers and incorporate in GUI based application development.	K3
CO4	Create an XML database and validate with meta-data (XML schema).	K3
CO5	Create and manipulate data using NOSQL database.	K3

Course Code / Course Name: CS3451/INTRODUCTION TO OPERATING SYSTEMS

Year / Branch: II /CSE

CO No.	Course Outcomes (COs)	Learning Level
CO1	Analyze various scheduling algorithms and process synchronization.	K4
CO2	Explain deadlock prevention and avoidance algorithms.	K2
CO3	Compare and contrast various memory management schemes.	K2
CO4	Explain the functionality of file systems, I/O systems and Virtualization	K2
CO5	Compare iOS and Android Operating Systems.	K2

Course Code / Course Name: CS3461/OPERATINGSYSTEMSLABORATORY

Year / Branch: II /CSE

CO No.	Course Outcomes (COs)	Learning Level
CO1	Define and implement UNIX Commands.	K2
CO2	Compare the performance of various CPU Scheduling Algorithms.	K2
CO3	Compare and contrast various Memory Allocation Methods.	K2
CO4	Define File Organization and File Allocation Strategies.	K2
CO5	Implement various Disk Scheduling Algorithms.	K2

Course Code / Course Name: CS3452/THEORY OF COMPUTATION

Year / Branch: II /CSE

CO No.	Course Outcomes (COs)	Learning Level
CO1	Construct automata theory using Finite Automata	K3
CO2	Write regular expressions for any pattern	K2

CO3	Design context free grammar and Pushdown Automata	K4
CO4	Design Turing machine for computational functions	K4
CO5	Differentiate between decidable and undecidable problems	K2

SEMESTER V

Course Code / Course Name: CS3591/COMPUTER NETWORKS

Year / Branch: III /CSE

CO No.	Course Outcomes (COs)	Learning Level
C301.1	Interpret the basic layers and its functions in computer networks.	K2
C301.2	Understand the basics of how data flows from one node to another.	K2
C301.3	Apply routing algorithms.	K3
C301.4	Describe protocols for various functions in the network.	K2
C301.5	Explain the working of various application layer protocols.	K2

Course Code / Course Name: CS3501 / COMPILER DESIGN

CO No.	Course Outcomes (COs)	Learning Level
C302.1	Understand the techniques in different phases of a compiler.	K2
C302.2	Construct a lexical analyser for a sample language and learn to use the LEX tool.	K3
C302.3	Apply different parsing algorithms to develop a parser and learn to use YACC tool	K3
C302.4	Understand semantics rules (SDT), intermediate code generation and run-time environment.	K2
C302.5	Implement code generation and apply code optimization techniques.	K3

Course Code / Course Name: CB3491 / CRYPTOGRAPHY AND CYBER SECURITY

CO No.	Course Outcomes (COs)	Learning Level
C303.1	Understand the fundamentals of networks security, security architecture, threats and vulnerabilities	K2
C303.2	Apply the different cryptographic operations of symmetric cryptographic algorithms	K3
C303.3	Apply the different cryptographic operations of public key cryptography	K3
C303.4	Apply the various Authentication schemes to simulate different applications.	K3
C303.5	Understand various cyber crimes and cyber security.	K2

Course Code / Course Name: CS3551 / DISTRIBUTED COMPUTING

CO No.	Course Outcomes (COs)	Learning Level
C304.1	Explain the foundations of distributed systems	K2
C304.2	Solve synchronization and state consistency problems	K3
C304.3	Use resource sharing techniques in distributed systems	K3
C304.4	Apply working model of consensus and reliability of distributed systems	K3
C304.5	Explain the fundamentals of cloud computing	K2

SEMESTER VI

Course Code / Course Name: CCS356/ Object Oriented Software Engineering

CO No.	Course Outcomes (COs)	Knowledge Level
C308.1	Compare various Software Development Lifecycle Models	**K2**
C308.2	Experiment with project management approaches as well as cost and schedule estimation strategies.	**K3**
C308.3	Plan formal analysis on specifications.	**K3**
C308.4	Use UML diagrams for analysis and design.	**K3**
C308.5	Construct and design using architectural styles and design patterns, and test the system	**K3**

Course Code / Course Name: CS3691 / Embedded Systems and IoT

CO No.	Course Outcomes (COs)	Knowledge Level
C309.1	Explain the architecture of embedded processors.	**K2**
C309.2	Write embedded C programs.	**K2**
C309.3	Develop simple embedded applications.	**K3**
C309.4	Compare the communication models in IOT	**K3**
C309.5	Construct IoT applications using Arduino/ Raspberry Pi / open platform.	**K3**