Course: Major
Database Technologies

Semester I	Credits: 2	Subject Code: SMAJCDT123553	Lectures: 30

Course Outcomes:

At the end of this course, the learner will be able to
- CO1: Define NoSQL databases and its emergence.
- CO2: Understand NoSQL database characteristics.
- CO3: Apply NoSQL specific Data Modeling according to its different types.
- CO4: Analyze what database technologies to use, based on their application needs.

Course: Elective
Advanced Artificial Intelligence

Semester: I	Credits:4	Subject Code:SMAJEAAI123556	Lectures: 60

Course Outcomes:

At the end of this course, the learner will be able to:
- CO1- Understand the informed and uninformed problem types and apply search strategies to solve them.
- CO2- Differentiate between biological neuron, artificial neuron, the application areas of neural networks, and building blocks of Neural Networks
- CO3-Apply difficult real-life problems in a state space representation to solve them using AI techniques like searching and game playing
- CO4- Formulate valid solutions for problems involving uncertain inputs or outcomes by using decision making techniques
- CO5- Categorize the machine learning algorithms as supervised learning and unsupervised learning and apply and analyze the various algorithms of supervised and unsupervised learning
- CO6-Demonstrate and enrich knowledge to select and apply AI tools to synthesize information and develop models within constraints of application area.

Course: Elective
Web Services

Semester: I	Credits: 4	Subject Code: SMAJEWS123557	Lectures: 60

Course Outcomes:

At the end of this course, the learner will be able to:
- CO1- Understand Web Services technologies and implementation model for SOA
- CO2- Explore Web Service benefits and challenges.
- CO3-Understand the details of web services technologies like WSDL, UDDI, SOAP
- CO4- Learn how to implement and deploy web service client and server
- CO5- Understand architecture of RESTful system.
- CO6- Design the RESTful system using JAX-RS APIs

Course:Major
Computer Science Practical-Design and Analysis of Algorithms

Semester I	Credits: 2	Subject Code: SMAJCCSP123554	Lectures: 60

Objectives:

At the end of this course, the learner will be able to:

- CO1- Evaluate various algorithm design strategies used for solving different problems using JAVA.
- CO2-Implement range of advanced algorithms including greedy, dynamic programming, backtracking and branch and bound techniques
- CO3-Compare and contrast various algorithms with respect to their complexities.
- CO4- Apply the knowledge of different strategy to write efficient algorithms for building an efficient software.

Course:Major
Computer Science Practical-MongoDB and SCALA

Semester I	Credits: 2	Subject Code: SMAJCCSP123555	Lectures: 60

Course Outcomes:

At the end of this course, the learner will be able to:

- CO1 – Understand syntax of SCALA programming language with different object-oriented features
- CO2 – Applyfunctional programming with SCALA
- CO3 – Learn to design database schema using Advanced Queries and CRUD operations of MongoDB database
- CO4 - Use MongoDB Aggregation framework.

Course: Major
Design and Analysis of Algorithms

Semester: I	Credits: 4	Subject Code:SMAJCDAA123551	Lectures: 60

Course Outcomes:

At the end of the course, the learner will be able to:

- CO1-Understand the correctness of algorithms using inductive proofs and analyze running times of algorithm using asymptotic analysis.
- CO2-Explore and apply various algorithm design strategies (divide-and-conquer, transform-and-conquer for solving different problems.
- CO3-Understand advanced design strategies like greedy, dynamic programming, backtracking and branch-bound techniques and applying it for solving problems.
- CO4-Compare and contrast various algorithms with respect to their complexities.
- CO5-Compare between different data structures and choose an appropriate data structure for a design situation.
- CO6-Describe the classes P, NP, and NP Complete and be able to prove that a certain problem is NP-Complete.

Course: Major
Paradigm of Programming Languages

Semester: I	Credits: 4	Subject Code: SMAJCPPL123552	Lectures: 60

Course Outcomes:

At the end of this course, the learner will be able to:

- CO1-Learn major programming paradigms and techniques involved in design and implementation of modern programming languages.
- CO2-Design and develop programs using the Scala programming language.
- CO3-Analyze methodologies, design/implementation issuesinvolved with variable allocation and binding with respect to various programming languages.
- CO4-Understand the evolution of data types and subroutines.
- CO5- Understand the concept of object orientation.
- CO6 -Understand the concept of concurrent programming.

Course: RM
Research Methodology

Semester: I	Credits: 4	Subject Code: SRMRM123558	Lectures: 60

Course Outcomes:

At the end of the course, the learner will be able to:

- CO1- Understand basic concepts in research methodology in Computer science.
- CO2- Select an appropriate research design.
- CO3- Learn probability and apply it for real life problems in Computer Science.
- CO4- Understand the basis of descriptive statistics measures and hypotheses.
- CO5- Select the right statistical technique to be used with the research method
- CO6- Take up and implement a research project/ study. Collect the data, edit it properly and analyse it accordingly. Interpret the results obtained on the basis of statistics with respect to the claims made. Write a report for the same.

Course: Elective
Cloud Computing

Semester: I	Credits: 4	Subject Code: SMAJCCC223556	Lectures: 60

Course Outcomes:

- CO1: Articulate the main concepts, key technologies, strengths, limitations of cloud computing and the possible applications for state-of-the-art cloud computing.
- CO2: Identify the architecture and infrastructure of cloud computing, including cloud delivery and deployment models.
- CO3: Compare the advantages and disadvantages of various cloud computing platforms.
- CO4: Identify security and privacy issues in cloud computing.
- CO5: Demonstrate the use of commercial cloud computing platforms such as Web Services, Windows Azure, and Google App Engine.
- CO6: Implement cloud computing concepts on commercial cloud computing platforms.

Course: Major Elective
Dot Net Programming

Semester: II	Credits: 4	Subject Code:SMAJCDNP223557	Lectures: 60

Course Outcomes:

At the end of the course, the learner will be able to:

- CO1-Understand the fundamentals of DOTNET framework and C# programming languages.
- CO2-Design and develop web-based .NET applications using VB.NET.
- CO3- Represent Object-Oriented principles applied in ASP.NET
- CO4- Evaluate appropriate data storage and data access strategy based on type, size of the data and need for data security.
- CO5-Analyze the problem statement and choose appropriate features / technologies to provide solutions and communicate observations.
- CO6- Identify different approaches for building service-oriented applications as well as create and use libraries for solving real life problems.

Course: Major
Advanced Operating System

Semester: II	Credits:4	Subject Code: SMAJCAOS223551	Lectures: 60

Course Outcomes:

At the end of this course, the learner will be able:

- CO1-To learn Advanced Operating Systems Concepts using Unix/Linux and buffer allocation
- CO2-To Apply Shared Data access and Files concepts
- CO3-To describe the system call interface to the Unix/Linux system.
- CO4-To gained insight into hardware-software interactions for compute and I/O and have practical skills in system tracing and performance analysis
- CO5-To Build the program to demonstrate concept of process and memory management
- CO6-To understanding the unique design requirements of different applications onoperating systems such as memory management and signal

Course:Major
Computer Science Practical-Advanced Operating System

Semester II	Credits:2	Subject Code: SMAJCCSP223554	Lectures: 60

Course Outcome:

At the end of this course, the learner will be able to:

- CO1- Learn Advanced Operating Systems Concepts using Unix/Linux and Windows as representative examples.
- CO2- Use File and Directory I/O using operating system concepts.
- CO3-Apply the concepts underlying in the design and implementation of Operating Systems.
- CO4 -Demonstrate the concept of Virtualization in operating systems.

Course: Major
Computer Science Practical-Mobile Technologies

Semester: II	Credits: 2	Subject Code: SMAJCCSP223555	Lectures: 60

Course Outcomes:

At the end of the course, the learner will be able to:

- CO1-Gain knowledge of Android Studio and Cross Platform Integrated Development Environment
- CO2-Design and develop user interfaces for the Android platform
- CO3-Design and develop advanced Android programming
- CO4-Apply Java programming concepts to develop different Android applications

Course: Major
Mobile Technologies

Semester II	Credits: 4	Subject Code: SMAJCMC223552	Lectures: 60

Course Outcomes:

At the end of this course, the learner will be able to

- CO1: Understand the Fundamentals of Mobile Computing and Mobile OS
- CO2: Explore the mobile technologies like PhoneGap and IOS
- CO3: Learn the fundamentals of Android OS
- CO4: Write the basic Android programming
- CO5: Learn the advanced Android programming
- CO6: Create and Design Mobile Apps using Android OS

Course:Major
Software Project Management

Semester II	Credits: 2	Subject Code: SMAJCSPM223553	Lectures: 30

Course Outcome:

At the end of this course, the learner will be able to:

- CO1 - Understand and apply the skills required to ensure successful medium and large-scale software projects.
- CO2 - Examine and Analyze Requirements Elicitation, Project Management, Verification and Validation and Management of Large Software Engineering Projects.
- CO 3 - Learn the different time and cost management techniques to help estimate the project progress.
- CO4 - Apply different techniques in monitoring and control of projects and work in teams to evaluate the different modes of communication among people.

Course: OJT
On Job Training

Semester II	Credits:4	Subject Code: SOJTCS223559	Lectures: 120 hrs

Course Outcomes:

At the end of this course, the learner will be able to:

- CO1: Enhance the knowledge related to various tools and technologies used in industry
- CO2: Improve the ability to solve complex problems independently and creatively
- CO3: Effectively utilize critical thinking and analytical skills in tackling real world challenges.
- CO4: Effectively communicate and collaborate skills through interaction with team members and mentors.
- CO5: Get an experience in working on projects or related working within industry.
- CO6: Develop the ability to document the process, design, implementation and testing in specific industry domain relevant to the internship.