DEPARTMENT OF COMPUTER SCIENCE.

B.Sc. Computer Science

Program Educational Objectives:

1. To acquire a sound technical foundation in computer science and creatively apply computer related

technologies in practical problems.

2. To make the students to establish themselves as competent professionals.

3. To craft the graduates technically competent to pursue higher studies

4. To make students competent in programming languages.

5. To provide necessary mathematical and accounting knowledge to the Computer science students.

6. To know the software development process.

Program Outcomes:

1. Ability to apply the knowledge of Mathematics and Science to develop real time systems.

2. Ability to design and conduct Experiments / Practicals.

3. Ability to function on Multidisciplinary teams.

4. Ability to communicate effectively and engage in lifelong learning.

5. Students recognize the need for continuing Professional development, ethical and social issues and responsibilities.

Program Specific Outcomes:

1. Students enable to apply the fundamental concepts and methodologies of computer system

2. Students enable to write programs on their own to solve real world problems

3. Students use appropriate system design notations and apply system design Engineeringprocess and Technologies in order to design, plan and implement software system.

4. Students enable to establish themselves as the successful entrepreneur.

Programme   :   B.Sc. Computer Science

Course Title :   Core 1: Fundamentals of IT Course Code: 20UCS1C01

Course outcomes

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

CO Number	CO Statement	Knowledge Level
CO1	Know the basic components of computer and its functionality	K1
CO2	Know the concept of Windows operating systems	K1
CO3	Know the concept of networking and their techniques	K1
CO4	Know the basic concepts of Storage devices	K1

MAPPING WITH PROGRAMME OUTCOMES

COS	PO1	PO2	PO3	PO4	PO5	PSO1	PS0O2	PSO3	PS04
CO1	L	L	M	M	M	L	L	M	L
CO2	L	L	M	M	M	L	L	M	L
CO3	L	L	M	M	M	L	L	M	L
CO4	L	L	M	M	M	L	L	M	L

Course Title   :   Core 2 - Programming in C   Course Code: 20UCS1C02

Course outcomes

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

CO No.	CO Statement	Knowledge level
CO1	Know the logics of solving the problems	K1
CO2	Understand the concepts of C programming	K2

CO3	Analyze and discover bugs in the program	K4
CO4	Apply the concepts and develop programs to solve real-time problems	K3

MAPPING WITH PROGRAMME OUTCOMES

COS	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4
CO1	M	S	M	S	M	S	S	M	L
CO2	M	S	M	S	M	S	S	M	L
CO3	S	S	M	S	M	S	S	S	S
CO4	S	S	M	S	M	S	S	S	S

Course Title : Core practical 1 - Programming in Lab in C

Course Code: 20UCS1CP1

Course Outcomes

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

CO Number	CO Statement	Knowledge level
CO1	Understand the fundamental programming concepts	K2
CO2	Illustrate the programming technique to analyze software problems	K2
CO3	Apply the concepts to find solution for the problems	K3
CO4	Design and develop the simple application.	K4

MAPPING WITH PROGRAMME OUTCOMES

COS	PO1	PO2	PO3	PO4	PO5	PSO1	PS0O2	PSO3	PS04
CO1	M	S	M	M	M	S	M	L	L
CO2	M	S	M	S	M	S	M	L	L
CO3	S	S	M	S	M	S	M	M	L
CO4	S	S	M	S	M	S	M	M	L

Course Title   :   Core 3: Internet of Things Course Code: 20UCS2C03

Course outcomes

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

CO Number	CO Statement	Knowledge Level
CO1	Know the concepts of IoT	K1
CO2	Can work with Arduino Board	K2
CO3	Understand the various sensors	K2
CO4	Apply the tools in IoT	K3

MAPPING WITH PROGRAMME OUTCOMES

COS	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4
CO1	S	M	L	M	M	S	M	L	L
CO2	S	S	M	M	M	S	S	M	L
CO3	M	S	M	M	M	S	M	M	S
CO4	S	S	L	M	M	S	M	M	M

Course Title   :   Core 4: Object Oriented Programming Course Code: 20UCS2C04

Course outcomes

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

CO Number	CO Statement	Knowledge Level
CO1	Understand the OOPS concepts.	K2
CO2	Learn data types and control structures in C++	K1
CO3	Demonstrate the Reusability by applying the types of Inheritance and know Polymorphism	K3
CO4	Demonstrate the use of pointers in virtual functions.	K3
CO5	Analyse the features of C++ including templates, exceptions and file handling.	K4

	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4
CO1	S	S	L	M	S	S	S	M	L
CO2	S	S	L	M	L	S	S	M	L
CO3	M	S	L	M	M	S	S	M	L
CO4	S	S	L	M	M	S	S	L	L
CO5	S	S	M	M	M	S	S	S	L

Course Title   :   Core practical – 2 Programming Lab in C++

Course Code: 20UCS2CP2

Course Outcomes

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

CO Number	CO Statement	Knowledge level
CO1	Developing programs for Mathematical problems	K3
CO2	Develop the programs to implement OOPS Concept	K4
CO3	Understand and implement File concepts	K1
CO4	Understand and implement Exception Handling features	K1

COS	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4
CO1	S	S	M	M	M	S	S	M	M
CO2	S	S	M	M	M	S	S	M	S
CO3	S	S	M	M	M	S	S	M	L
CO4	S	M	M	L	L	S	S	M	L

Course Title   :   Core 5: Database Management Systems Course Code: 20UCS3C05

COURSE OUTCOMES

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

CO Number	CO Statement	Knowledge Level
CO1	know and practice the data models and schemas in DBMS	K1
CO2	develop the database designs and apply normalization techniques to normalize the database	K4
CO3	use SQL to structure the database to handle data	K3
CO4	use PL/SQL to create, secure, populate, maintain, and query a database.	K3

MAPPING WITH PROGRAMME OUTCOMES

COS	PO1	PO2	PO3	PO4	PO5	PSO1	PS0O2	PSO3	PS04
CO1	S	M	S	M	S	S	M	M	M
CO2	S	S	L	M	S	S	M	S	S
CO3	S	S	S	M	S	S	S	S	M
CO4	S	S	M	L	S	S	S	S	S

Course Title   :   Core 6:Data Structures and Algorithms Course Code: 20UCS3C06

Course Outcome

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

CO Number	CO Statement	Knowledge Level
CO1	Know the characteristics of various data structure.	K1
CO2	Understand and develop applications using various data structures	K2
CO3	Apply appropriate internal sorting methods	K3
CO4	Analyze the concept of files and its various organization	K4

	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4
CO1	S	S	L	M	M	S	S	M	L
CO2	S	S	L	M	M	S	S	M	L
CO3	S	S	L	M	M	S	S	M	L
CO4	S	S	M	S	M	S	S	S	M

Course Title   :   Core 7: Java Programming Course Code: 20UCS3C07

Course Outcome

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

CO Number	CO Statement	Knowledge Level
CO1.	Understand the Packages and Multithreaded applications	K2
CO2.	Write Applet programs	K2
CO3.	apply AWT controls in the Applications	K3
CO4.	Demonstrate database applications using JDBC	K4

MAPPING WITH PROGRAMME OUTCOMES

COS	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4
CO1	S	S	M	M	M	S	M	M	M
CO2	S	S	M	M	M	S	S	M	L
CO3	S	M	M	M	M	S	M	M	M
CO4	S	S	L	M	M	S	M	M	M

Course title   : Core Practical 3 : JAVA PROGRAMMING LAB
Course Code: 20UCS3CP3
Course outcomes

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

CO Number	CO Statement	Knowledge Level
CO1	Develop program to implement packages and interfaces	K4
CO2	Apply the concepts in exception handling and multithreading	K3
CO3	Understand the window based applications using applet	K2
CO4	Develop the database program using JDBC	K4

MAPPING WITH PROGRAMME OUTCOMES

COS	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4
CO1	S	S	M	M	M	S	M	M	L
CO2	S	M	M	M	M	S	S	M	L
CO3	S	M	L	M	M	S	M	M	M
CO4	S	S	M	L	L	S	M	M	M

Course Title   :   Core Practical 4: RDBMS LAB Course Code: 20UCS3CP4

COURSE OUTCOME
On the successful completion of the course, students will be able to

CO Number	CO Statement	Knowledge Level
CO1	design and implement databases for given problem domain	K4

CO2	Know to write programs for exception handling and indexes	K1
CO3	Develop programming using DDL, DML Statements	K4
CO4	Work with the PL/SQL for windows Applications including procedures and cursors.	K4

COS	PO1	PO2	PO3	PO4	PO5	PSO1	PS0O2	PSO3	PS04
CO1	S	S	M	M	L	S	S	M	L
CO2	S	S	M	M	L	S	S	M	L
CO3	S	S	S	M	L	S	S	S	L
CO4	S	S	S	M	L	S	S	S	S

Course Title   : Core 8:.Net Technology   Course Code: 20UCS4C08

Course Outcome

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

CO Number	CO Statement	Knowledge Level
CO1.	Learn the fundamental concepts in C#	K1
CO2.	Develop the Windows Applications using controls	K4
CO3.	Work with ADO.Net and its Applications	K3
CO4.	Develop Web Applications	K4

COS	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4
CO1	S	M	M	L	M	S	M	M	L
CO2	S	M	M	M	M	S	S	M	L
CO3	S	S	M	M	M	S	S	M	L
CO4	S	S	M	L	M	S	S	S	M

Course Title : Core 9:Computer Organization Course Code: 20UCS4C09
Course Outcomes

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

CO Number	CO Statement	Knowledge level
CO1.	know the number systems and basic logic gates	K1
CO2.	understand the CPU, I/O and Memory organizations	K2
CO3	Understand the input/output Organization Methods	K2
CO4	Understand the concepts of memory and its storing techniques	K2

COS	PO1	PO2	PO3	PO4	PO5	PSO1	PS0O2	PSO3	PS04
CO1	S	M	L	M	M	S	L	M	L
CO2	M	M	M	M	M	S	L	M	M
CO3	M	M	M	M	M	S	L	M	L
CO4	M	M	L	M	M	S	L	M	M

Course Title : Core 10:Android Programming Course Code: 20UCS4C10
COURSE OUTCOMES

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

CO Number	CO Statement	Knowledge Level
CO1	understand the concept of android development platform, and configuring and creating android applications.	K2
CO2	create an activity, intents, different event handling methods and menus	K4
CO3	know working with views, view groups and content provider	K1
CO4	apply the concept of graphics and animation in developing android application	K3

COS	PO1	PO2	PO3	PO4	PO5	PSO1	PS0O2	PSO3	PS04
CO1	S	S	M	L	L	S	L	L	L
CO2	S	S	M	S	M	S	M	S	L
CO3	M	S	S	S	M	S	S	M	M
CO4	M	S	S	M	M	S	M	S	S

Course Title: PART - III Allied – 4   Course Code: 20UCS4AL4

Course Outcomes

On the successful completion of the course, students will be able to:

CO Number	CO Statement	Knowledge Level
CO1	Understands the Industrial concepts inventory management, queuing problems and replacement problems	K2
CO2	Apply the mathematical calculations in industrial and business problems	K3
CO3	Improve decision making	K4
CO4	Determine the optimum use of human and other resources	K4

MAPPING WITH PROGRAMME OUTCOMES

COS	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PS04
CO1	S	S	L	M	M	S	M	L	S
CO2	S	S	M	L	M	S	S	L	M
CO3	S	M	M	M	M	S	M	M	S
CO4	S	S	S	S	M	M	M	M	S

Course title: Core Practical –5.NETTECHNOLOGY LAB
Course Code: 20UCS4CP5
Course Outcome

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

CO Number	CO Statement	Knowledge level
CO1	understand the basic concepts of C# console applications	K2
CO2	have knowledge about Array and String Function in C# console	K1
CO3	understand basic concepts about C# windows application with programs	K2
CO4	Develop programs using ADO.Net	K4

WITH PROGRAMME OUTCOMES

COS	PO1	PO2	PO3	PO4	PO5	PSO1	PS0O2	PSO3	PS04
CO1	S	S	M	M	L	S	S	M	L
CO2	S	S	M	M	L	S	M	L	L

| CO3 | S | S | M | M | L | S | M | M | L |
| CO4 | S | S | M | S | M | M | M | M | S |

Course title: PART - III Core Practical – 6Android Programming Lab
Course Code: 20UCS4CP6
Course Outcome

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

CO Number	CO Statement	Knowledge level
CO1	Learn the basic concepts of Android Programming	K1
CO2	know how to create various user interfaces with Toast messages and simple applications	K2
CO3	Develop programs using API controls	K3
CO4	knows working with SQLite database	K2

WITH PROGRAMME OUTCOMES

COS	PO1	PO2	PO3	PO4	PO5	PSO1	PS0O2	PSO3	PS04
CO1	S	S	M	M	L	S	M	M	L
CO2	M	S	M	M	L	S	M	M	L
CO3	S	S	M	M	S	S	S	M	S
CO4	S	S	L	M	S	L	S	M	S

Course Title :   Core 11: **Operating System   Course Code: 20UCS5C11**
COURSE OUTCOMES
On the successful completion of the course, students will be able to

CO Number	CO Statement	Knowledge Level
CO1	know the usage of various operating systems	K1
CO2	Understand the functions of process management and file management to know the various file operations and how these files are processed	K2
CO3	Understand the concept and difference between storage management and disk management	K2
CO4	Apply the knowledge of the Windows2000 and Windows XP for utilizing other operating systems .	K3

COS	PO1	PO2	PO3	PO4	PO5	PSO1	PS0O2	PSO3	PS04

CO1	L	L	L	L	L	S	L	L	L
CO2	S	L	M	M	L	S	L	M	L
CO3	M	L	M	M	L	S	L	M	L
CO4	M	L	M	M	L	S	L	M	M

Course Title: **Core 12**: **Web Technology**   **Course Code: 20UCS5C12**

Course Outcomes

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

CO Number	CO Statement	Knowledge level
CO1.	Know the basic concepts of HTML	K1
CO2.	Understanding form designing using HTML with CSS	K2
CO3	Apply various controls in PHP	K3
CO4	Develop Web Applications	K4

COS	PO1	PO2	PO3	PO4	PO5	PSO1	PS0O2	PSO3	PS04
CO1	M	S	M	M	M	S	L	L	L
CO2	M	S	S	S	M	M	L	S	M
CO3	S	S	S	S	M	M	S	S	M
CO4	S	S	S	S	S	M	S	S	S

Course title: Core 13 :Object Oriented Modeling & Design With UML And SOAD
Course Code: 20UCS5C13
 Course Outcomes

On completion of this Course, the student will be able to

CO Number	CO Statement	Knowledge level
CO1	Learn design, document the requirements through usecase, state, and class driven approach.	K1
CO2	Analyze and modeling the structural and behavioral concepts of the system.	K4
CO3	Transform the SOAD conceptual model into various scenarios and applications.	K2
CO4	Understand the Cloud Technologies using SOA by REST and	K2

	SOAP	

MAPPING WITH PROGRAMME OUTCOMES

COS	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4
CO1	S	S	L	M	L	S	M	S	L
CO2	S	S	M	M	L	S	M	S	L
CO3	M	M	L	M	L	M	S	M	L
CO4	M	L	L	M	L	S	M	L	L

Course title: **Core Practical 7: Web Technology Lab   Course Code: 20UCS5CP7**

Course Outcomes

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

CO Number	CO Statement	Knowledge level
CO1	Know the concepts of XML	K1
CO2	Apply various controls of PHP	K3
CO3	Connect PHP with MYSQL	K4
CO4	Ability to work with Web Applications	K4

MAPPING WITH PROGRAMME OUTCOMES

COS	PO1	PO2	PO3	PO4	PO5	PSO1	PS0O2	PSO3	PS04
CO1	L	S	M	S	M	M	S	S	M
CO2	M	S	S	S	M	M	S	S	M
CO3	M	S	S	S	M	M	S	S	S
CO4	S	S	S	S	S	M	S	S	S

Course Title   :   Core 14: Software Engineering Course Code: 20UCS6C14

COURSE OUTCOMES
On the successful completion of the course, students will be able to

CO Number	CO Statement	Knowledge Level
CO1	Apply software engineering techniques.	K3

CO2	Develop, maintain and evaluate software systems.	K4
CO3	Identify efficient, reliable, robust and cost-effective software solutions.	K1
CO4	Develop independent research and analysis and work with the software team	K4

MAPPING WITH PROGRAMME OUTCOMES

COS	PO1	PO2	PO3	PO4	PO5	PSO1	PS0O2	PSO3	PS04
CO1	S	M	S	M	L	S	M	M	L
CO2	S	S	M	M	M	S	S	M	S
CO3	S	S	M	M	M	S	S	S	M
CO4	S	M	L	S	M	S	M	S	S

Course Title   :   Core 15: Python Programming Course Code: 20UCS6C15
Course Outcomes

On completion of this Course, the student will be able to

CO Number	CO Statement	Knowledge Level
CO1	knows the various data types and control structures	K1
CO2	Apply the concepts of NumPy and Pandas	K3
CO3	Develop the Python program using Matplotlib	K4
CO4	Develop Sci-kit applications	K4

MAPPING WITH PROGRAMME OUTCOMES

COS	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4
CO1	S	M	L	M	M	S	M	M	L
CO2	S	M	L	M	L	S	S	M	L
CO3	S	M	M	M	M	S	M	M	M
CO4	S	M	M	M	M	S	M	M	M

Course title: CORE 16:COMPUTER NETWORKS AND CYBER SECURITY
Course Code: 20UCS6C16
Course Outcomes
On completion of this Course, the student will be able to

CO Number	CO Statement	Knowledge Level

CO1.	Understand the various topologies and the importance of layers	K2
CO2.	Explore Analog and Digital Transmissions and Switching techniques	K4
CO3.	Apply the concepts of Routing and Congestion	K3
CO4.	Apply the concepts of Network Security	K3
CO5.	Know about Cyber Crimes and Cyber laws	K1

	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4
CO1	S	M	L	S	M	M	M	M	L
CO2	S	S	L	M	M	S	M	M	M
CO3	S	S	L	M	M	S	M	M	M
CO4	S	S	M	S	S	S	M	M	L
CO5	M	L	S	M	S	S	M	M	L

Course title:**Python Programming Lab**   **Course Code: 20UCS6CP8**
   Course outcomes

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

CO Number	CO Statement	Knowledge Level
CO1	Understand the essentials of python programming	K2
CO2	Develop the simple applications using numpy and pandas	K4
CO3	Apply to create different types of charts using matplotlib	K3
CO4	Build simple applications using sci-kit learn	K4

MAPPING WITH PROGRAMME OUTCOMES

COS	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4
CO1	S	M	S	M	M	S	M	M	M
CO2	S	S	S	M	M	S	M	M	L
CO3	S	M	M	M	M	S	M	M	M
CO4	S	M	M	L	L	S	M	M	M

Course Title : Management Information System Course Code: 20UCS5EC1

Course Title : Artificial Intelligence and Soft Computing Course Code: 20UCS5EA1

COURSE OUTCOMES:

On completion of this Course, the student will be able to

CO Number	CO Statement	Knowledge Level
CO1	Know the various characteristics of AI and Soft Computing	K1
CO2	Analyze the strength and weakness of AI approaches to knowledge representation, heuristic searching techniques and applications of AI.	K4
CO3	Choose the appropriate representation and appropriate reasoning algorithm, for the chosen AI problem/domain and assess the Soft Computing Components.	K2
CO4	Classify the Fuzzy logic control systems	K3

MAPPING WITH PROGRAMME OUTCOMES

COS	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4
CO1	S	S	L	M	M	S	M	M	M
CO2	S	M	L	M	L	S	S	M	M
CO3	S	M	M	M	L	S	M	M	M
CO4	M	M	M	M	M	S	M	M	S

Course Title : Distributed Computing System Course Code: 20UCS5EB1

COURSE OUTCOMES

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

CO Number	CO Statement	Knowledge Level
CO1	Assimilate the workability of distributed systems	K1
CO2	Understand the basic communication fundamentals of distributed systems	K2
CO3	Analyze the knowledge of data centric consistency models and Security management in distributed systems	K4
CO4	Use the distributed environment in web based systems.	K3

COS	PO1	PO2	PO3	PO4	PO5	PSO1	PS0O2	PSO3	PS04
CO1	L	L	S	S	S	L	L	L	L
CO2	M	L	M	M	S	S	L	L	L
CO3	M	M	M	M	S	S	M	M	L
CO4	M	M	M	M	M	S	M	M	S

COURSE OUTCOMES:

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

CO Number	CO Statement	Knowledge Level
CO1	Use Various design tools	K1
CO2	Apply the concept of DSS,EIS,KMS and GIS	K2
CO3	Analyse the issues of Vulnerability, Computer Crimes and ethics in IT	K4
CO4	Know the Concepts of E-Governance Techniques	K2

MAPPING WITH PROGRAMME OUTCOMES

COS	PO1	PO2	PO3	PO4	PO5	PSO1	PS0O2	PSO3	PS04
CO1	L	L	S	S	S	L	L	L	L
CO2	M	L	M	M	S	S	L	L	L
CO3	M	M	M	M	S	S	M	M	L
CO4	M	M	M	M	M	S	M	M	S

Course Title   :   TCP / IP Protocol Suit Course Code: 20UCS4ED1
COURSE OUTCOMES:

On completion of this Course, the student will be able to

CO Number	CO Statement	Knowledge Level
CO1	Know the concepts of data communication	**K1**
CO2	Understand ISO - OSI model and TCP/IP model.	**K2**
CO3	Apply the IP addressing and subnetting / supernetting schemes.	**K3**
CO4	Analyze various routing algorithms and protocols	**K4**

	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4
CO1	M	M	L	S	M	S	L	M	L
CO2	M	M	L	M	M	S	L	L	L
CO3	S	S	M	M	M	M	L	M	M
CO4	S	S	M	S	S	M	L	M	M

Course Title   :   Data mining and Warehousing Course Code: 20UCS6EA2
Course Outcomes

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

CO Number	CO Statement	Knowledge level
CO1	Know the concepts of data mining applications	K1
CO2	Apply the association rules for mining the data	K3
CO3	Design and deploy appropriate Classification techniques	K4
CO4	Understanding various algorithms in Data Mining	K2

MAPPING WITH PROGRAMME OUTCOMES

COS	PO1	PO2	PO3	PO4	PO5	PSO1	PS0O2	PSO3	PS04
CO1	M	M	M	S	M	S	L	L	L
CO2	M	S	M	S	M	S	S	M	L
CO3	S	S	M	S	M	S	S	M	S
CO4	S	S	M	S	M	S	S	M	S

Course Title : Multimedia Applications Course Code: 20UCS6EB2
Outcomes:

On completion of this Course, the student will be able to

CO Number	CO Statement	Knowledge level
CO1	Use basic tools of Photoshop.	**K1**
CO2	Analyze various file formats for audio, video and text media	**K4**
CO3	Understand basic methods of Flash Animation	**K2**
CO4	Develop interactive multimedia applications	**K3**

COS	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4
CO1	L	S	M	S	M	M	S	M	S
CO2	L	S	M	S	L	L	M	M	L
CO3	L	S	M	S	S	M	M	S	L
CO4	L	S	M	S	S	S	M	S	S

Course Title : **Software Project Management   Course Code: 20UCS6EC2**
Course Outcomes:

On completion of this Course, the student will be able to

Course Outcome:

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

CO Number	CO Statement	Knowledge Level
CO1.	Know the concept of project management and planning	K1
CO2.	Analyze and implement methods to plan and control project, have a control over risks.	K4
CO3.	Apply the required steps for the decision making.	K3
CO4.	Understand the process of Managing the People and member of software engineering team	K2

COS	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4
CO1	S	S	M	M	M	S	S	M	M
CO2	S	S	M	M	M	S	S	M	M
CO3	S	S	M	L	L	S	M	M	L
CO4	S	S	M	L	L	S	M	M	L

Course Title   :   Data Science using R   Course Code: 20UCS6ED2
Course Outcomes:

On completion of this Course, the student will be able to

CO Number	CO Statement	Knowledge level
CO1	To know the Basic Concepts of R Programming	K1
CO2	Analyze Concept of R Data Interfaces	K4
CO3	Apply the required steps for the time Series Analysis	K3
CO4	Understands various charts and graphs	K1

COS	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4
CO1	S	M	M	M	S	S	S	M	M
CO2	S	M	M	M	S	S	S	M	S
CO3	S	M	M	M	S	S	S	M	S
CO4	S	M	M	M	S	S	S	M	M

Course Title : Elective 1: WEB PROGRAMMING   Course Code: 20UCM5EL1
Course Outcomes:

On completion of this Course, the student will be able to

CO Number	CO Statement	Knowledge level
CO1	Know the basic concepts of HTML	K1
CO2	Know the various HTML properties	K1
CO3	Understanding the form designing using HTML	K2
CO4	Know the concepts of XML applications	K1

K1 - Remember;   K2 - Understand;   K3 - Apply;   K4 - Analyze

COS	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	L	L	L	L	L	S	S	M	M	L
CO2	L	S	M	L	L	S	S	M	M	L
CO3	L	S	M	S	L	S	S	M	S	L
CO4	L	S	L	S	M	S	S	S	S	M

S – Strong;   M – Medium;   L - Low

Course Title : Elective 3: Practical - Web Programming and "C"
Course Code: 20UMA6EP1
Course outcomes

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

CO Number	CO Statement	Knowledge level
CO1	Understand the fundamental programming concepts	K2
CO3	Apply the concepts to find solution for the problems	K3
CO4	Design and develop the simple application.	K4
CO4	Know the basic concepts of HTML	K1

K1 - Remember;   K2 - Understand;   K3 - Apply;   K4 - Analyze

COS	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M	L	M	M	L	L	M	M	M	L
CO2	M	L	M	S	L	M	M	S	M	L
CO3	M	L	M	S	L	M	M	S	S	M
CO4	M	L	M	M	L	M	M	M	M	M

S – Strong;   M – Medium;   L - Low

Course Title : Elective 2: Introduction to 'C' Course Code: 20UMA6EL2
Course outcomes

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

CO Number	CO Statement	Knowledge level
CO1	Understand the concepts of C programming	K2
CO2	Know the concepts of Operators and Expression	K1
CO3	Understand the various Decision making and branching techniques	K2
CO4	Know the Concepts of arrays and structures	K1

K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze

COS	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	L	L	S	L	L	M	M	L	M	M
CO2	L	L	S	L	L	M	M	L	M	M
CO3	L	M	S	M	L	M	M	M	S	S
CO4	L	M	S	M	L	M	M	L	M	M

S – Strong;   M – Medium;   L - Low

Course Title : Elective: Practical: Computer Applications in Business Lab Course Code: 20UCO5EP1

Course Outcomes:

CO No.	CO Statement	Knowledge level
CO1	Create file,edit,save,cut,copy, paste and Print documents in the MS-word	K1
CO2	Preparation of Payroll and Invoice in MS-Excel	K3
CO3	Store, retrieve and sort data in tables in MS-Access.	K3
CO4	Create graphic to a presentation and slide shows for the Subject related topics in MS-PowerPoint.	K3
CO5	Learning the basic Internet concepts like E-mail creation and Ordering a product through Online.	K2

COS	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4
CO1	S	M	S	M	M	S	M	S	M
CO2	S	M	M	S	M	M	S	S	M
CO3	M	S	M	S	M	S	S	S	M
CO4	S	M	S	M	M	S	M	S	M

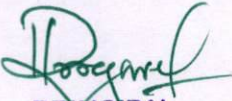**Course Title :**   **PART - IV NME – 1   JAVA PROGRAMMING   Course Code:**
20UEC3NM1

Course Outcome

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

CO1.	know the concepts of Java Programming	K1&K2
CO2.	write programs for simple applications	K3&K4

K1 – Remember; K2– understand; K3 – Apply; K4 - Analyze

	PO1	PO2	PO3	PO4	PO5		PSO1	PSO2	PSO3	PSO4
CO1	M	S	M	M	M		M	S	L	M
CO2	M	S	M	M	M		M	S	L	M