Attainment of Programme Outcome

B.SC COMPUTER SCIENCE

PO , PSO and CO Mapping

Name of the Course: C Programming

Blue Print of the question paper	Section	Unit I	Unit II	Unit III	Unit IV	Unit V
	Section A	2	2	2	2	2
	Section B Any FIVE	2	2	1	1	1
	Section C Either OR	2	2	2	2	2
	Section D Any THREE	1	1	1	1	1

SEMESTER- I			
Core – I	**C Programming**		
Course Code:21UCSC11	**Hrs / week : 4**	**Hrs / Semester: 60**	**Credits : 4**

Objectives:

- Understand the concepts of Structured programming language
- To understand the basic programming concepts.
- To develop programming skills using the C language.

Unit I:

Algorithms - Flow charts: Developing algorithms and flowcharts for solving simple problems. Introduction to C

C Fundamentals: The C Character Set - Identifiers and Keywords - Data Types –Constants– Variables and Arrays - Declarations - Expressions - Statements - Symbolic Constants.**Operators and Expressions:** Arithmetic Operators - Unary Operators - Relational and Logical Operators - Assignment Operators - The Conditional Operator - Library Functions

Self- learning: Bitwise Operations

Unit II:

Data Input and Output: Single Character Input-The getchar Function-Single Character Output- The putchar Function-Entering Input Data-More about the scanf function-Writing output data – The printf function- The scanf Function-More about the printf function -The gets and puts Functions.

Control Statements: Branching: The if-else Statement-Looping: The While Statement-More Looping: The do-while Statement-Still More Looping: The for Statement-Nested Control Structures-The switch Statement-The break Statement-The continue Statement-The comma Operator-The go to Statement.

Unit III:

Functions: Defining a Function-Accessing a Function-Function Prototypes- Passing Arguments to a Function- Recursion. Program Structure: Storage Classes- Automatic Variables- External (Global) Variables- Static Variables.

Arrays: Defining an Array-Processing an Array - Passing Arrays to Functions-Multidimensional Arrays - Arrays and Strings.

Self learning: Register Variables

Unit IV:

Pointers: Fundamentals-Pointer Declarations- Passing Pointers to Functions- Pointers and One- Dimensional Arrays-Dynamic Memory Allocation- Operations on Pointers-Pointers and Multidimensional Arrays -Arrays of pointers-Passing Functions to Other Functions

Structures and Unions: Defining a Structure - Processing a Structure - User Defined Data types (typedef) - Structures and Pointers - Passing Structures to Functions -Passing Structures to Functions-Unions.

Self-learning: command-line arguments

Unit V:

Opening and Closing a Data File - Creating a Data File - Processing a Data - Unformatted Data Files.

Self learning: Macros-The CPreprocessor.

Text Book:

1. Byron Gottfried, "*Programming with C"* . India : McGraw Hill Education Private Limited . ThirdrdEdition 2017 .
   Chapters: 2,3,4,6,7,8,9,10,11,12 and 13.

Books for Reference:

1. Ashok N. Kamthane, *Programming with ANSI and Turbo* .New Delhi :Pearson education. Third Edition 2008.
2. Venugopal K R and Sudeep R Prasad .*Mastering C*. India: Tata McGraw Hill. Second Edition, 2017.
3. E. Balagurusamy, ,*Programming in ANSI C.*India:McGraw Hill Education Private Limited, Eighth Edition 2019

4. computer-fundamental/algorithm-and-flowchart.htm
5. https://www.geeksforgeeks.org/an-introduction-to-flowcharts

Course Outcomes

CO No.	Upon completion of this course, students will	PSO	CL
CO-1	describe algorithm, flowchart, various operators and library functions of C language	1	Un
CO-2	compare and contrast loops	4	An
CO-3	understand the concept of storage classes and input /output statements and functions	1	Un
CO-4	implement different operations on arrays	2,6	Ap
CO-5	develop programs using pointers , structures and union	2,6	Ap
CO-6	describe the file operations	1,2	Un

21UCSC11 C Programming

	PO									PSO								
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	Avg	PSO-1	PSO-2	PSO-3	PSO-4	PSO-5	PSO-6	PSO-7	PSO-8	Avg
CO-1	3	3	3	3	3	2	3	2	**2.8**	3	3	3	3	3	2	2	1	**2.5**
CO-2	3	3	3	3	3	2	2	2	**2.6**	3	3	3	3	3	2	2	1	**2.5**
CO-3	3	3	3	3	3	2	1	2	**2.5**	3	3	3	3	3	2	2	1	**2.5**
CO-4	3	3	3	3	3	2	2	2	**2.6**	3	3	3	3	3	2	2	3	**2.8**
CO-5	3	3	3	3	3	2	2	2	**2.6**	3	3	3	3	3	2	2	3	**2.8**
CO-6	3	3	3	3	3	2	2	2	**2.6**	3	3	3	3	3	3	3	3	**3.0**
Aver	**3**	**3**	**3**	**3**	**3**	**2**	**2**	**2**		**3**	**3**	**3**	**3**	**3**	**2.2**	**2.2**	**2**	
PO Mean									**2.6**	PSO Mean								**2.7**
Strength of PO				Strong						Strength of PSO					Strong			

Attainment of Course Outcomes of the BSc Computer Science Programme

Course Code	Name of the Course	Course Outcomes															
		Programme Outcomes (PO)								Programme Specific Outcomes (PSO)							
		PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PSO-1	PSO-2	PSO-3	PSO-4	PSO-5	PSO-6	PSO-7	PSO-8
21ULTA11	Part-I Tamil	2.8	2.5	2.6	3	2.8	2.5	2.3	3	2.6	2.8	2.8	2.8	2.8	3	2.8	2.6
21ULFB11	Part-I French	3	3	2.8	3	3	3	2.3	3	2.6	3	2.8	2.8	2.8	3	3	3
21UGEN11	Part-II General	2.5	2.5	2.5	2.5	2.5	2.5	2.6	2.5	2.5	2.5	2.5	2.5	2.6	2.5	2.6	2.5
21UCSC11	C Programming	3	2	3	2	3	3	2	3	3	3	2.8	2.7	3	2.3	2.2	2.2
21UCSA11	Mathematics for Computer	3	2	2	2	2	2.2	2	3	3	3	2	3	3	2	2	3
21ULTA21	Part-I Tamil	2.8	2.6	2.6	3	2.8	2.5	2.5	2.8	2.6	2.8	2.6	2.8	2.8	2.6	2.8	2.6
21ULFB21	Part-I French	2.8	3	3	3	3	3	2.3	3	3	3	3	2.8	3	3	2.8	3
21UGEN21	Part-II General	2.6	2.5	2.6	2.5	2.6	2.5	2.5	1	2.6	2.5	2.6	2.5	2.6	2.5	2.6	2.5
21UCSC21	C ++ Programming	3	2.2	3	2	3	2	2	3	3	3	2	3	3	3	2	3
21UCSA21	Digital Electronics	3	2.8	2	2	2	3	2	2.8	3	2	2	3	3	2	3	3
21ULTA31	Part-I Tamil	2.6	2.8	2.6	3	2.8	2.5	2.5	2.8	2.5	2.8	2.6	2.8	2.8	2.6	2.8	2.6
21ULFB31	Part-I French	2.8	3	2.8	3	3	3	2.7	3	2.7	3	3	2.8	3	3	2.8	3
21UGEN31	Part-II General	2.8	2.6	2.5	3	2.5	2.8	2.6	2.5	2.5	2.8	2.6	2.8	2.8	2.3	2.8	2.5
21UCSC31	JAVA Programming	3	3	3	3	3	2	2	3	3	3	2	3	3	3	2	3
21UCSA31	Data Structures	3	3	3	3	2	2	2	2	**3**	**3**	**2**	**3**	**3**	**3**	**2**	**3**
21UCSS31	Microprocessors	2	3	3	2	3	2	2	2.5	3	3	2	3	2.5	3	2	3
21UCSS32	E-Commerce	2	2.5	3	3	3	3	2	3	3	3	3	2	3	3	3	3
21UCSSS1	Computer Architecture	2.8	2	3	3	3	3	2	3	3	3	2	3	3	3	2	3
21ULTA41	Part-I Tamil	2.6	2.5	2.6	2.6	2.8	2.5	2.8	2.8	2.6	2.8	2.8	2.5	2.8	2.6	2.8	2.6
21ULFB41	Part-I French	3	2.8	3	3	3	3	2.3	3	2.8	2.8	3	3	3	3	3	3
21UGEN41	Part-II General English	2.8	3	2.6	3	2.6	2.8	2.8	2.6	2.6	2.8	2.6	2.8	3	2.6	2.8	2.6
21UCSC41	RDBMS with PHP and MySQL	2	3	3	3	2	2	2	3	3	2.7	2.7	3	2.7	3	2	3

21UCSA41	Big data Analytics	2.2	3	3	3	2.2	3	2.8	2	3	2.2	2.2	3	2.2	3	2	3
21UCSS42	Cyber Security	2.2	3	3	3	2.2	3	2.8	2	3	2.2	2.2	3	2.2	3	2	3
21UCSSS2	Web Technology	2	3	3	2	3	3	2	3	3	3	2	3	3	3	3	3
21UCMC51	Computer Oriented Numerical Methods	2	3	2	2	3	2	2	3	2	2	2	3	3	2	2	3
21UCSC51	Operating Systems	2	3	2	2	3	3	2	3	3	3	2	3	3	3	2	3
21UCSC52	Python Programming	3	3	3	2	3	3	2	3	3	3	2	3	3	3	2	3
21UCSE51	Data Mining	3	3	3	3	3	2	2	3	3	3	2	3	3	3	2	3
21UCSE52	Introduction to IoT	3	3	3	3	3	2	2	3	3	2	3	3	3	3	2	3
21UCSSS3	Mathematical Reasoning	2	2	2	2	3	2	2	3	2	2	2	3	3	2	2	2
21UCSC61	.NET Programming	3	3	3	3	3	2	2	3	3	3	2	3	3	3	2	3
21UCSC62	Software Engineering	2	3	3	3	3	3	2	3	3	3	2	3	3	2	3	3
21UCSC63	Computer Networks	2.8	2	3	3	3	3	2	3	3	3	2	3	3	3	2	3
21UCSE61	Cloud Computing	3	2	3	2	3	3	3	3	3	3	3	3	3	3	2	3
21UCSE62	Mobile Computing	3	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3
Average Correlation		**2.6**	**2.7**	**2.8**	**2.6**	**2.8**	**2.6**	**2.3**	**2.8**	**2.8**	**2.8**	**2.4**	**2.9**	**2.9**	**2.8**	**2.4**	**2.8**
Mean Overall Score		**2.7**	**The POs and PSOs are strongly correlated with the COs of the programme**														

Semester I			
Core – I	**C Programming**		
Course Code:21UCSC11	**Hrs / week : 4**	**Hrs / Semester: 60**	**Credits : 4**

Objectives:

- Understand the concepts of Structured programming language
- To understand the basic programming concepts.
- To develop programming skills using the C language.

Course outcome:

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	describe algorithm, flowchart, various operators and library functions of C language	1	Un
CO-2	compare and contrast loops	4	An
CO-3	understand the concept of storage classes and input /output statements and functions	1	Un
CO-4	implement different operations on arrays	2,6	Ap
CO-5	develop programs using pointers , structures and union	2,6	Ap
CO-6	describe the file operations	1,2	Un

21UCSC11 C Programming																		
	PO									**PSO**								
	PO-	**PO-**	**PO-**	**PO-**	**PO-**	**PO-**	**PO-**	**PO-**	**Avg**	**PSO-1**	**PSO-2**	**PSO-3**	**PSO-4**	**PSO-5**	**PSO-6**	**PSO-7**	**PSO-8**	**Avg**
CO-1	3	2	3	2	3	3	2	3	2.6	3	3	2	2	3	3	2	3	2.6
CO-2	3	2	3	2	3	3	2	3	2.6	3	3	3	2	3	2	2	2	2.5
CO-3	3	2	3	2	3	3	2	3	2.6	3	3	3	3	3	2	2	2	2.6
CO-4	3	2	3	2	3	3	2	3	2.6	3	3	3	3	3	2	2	2	2.6
CO-5	3	2	3	2	3	3	2	3	2.6	3	3	3	3	3	2	2	2	2.6
CO-6	3	2	3	2	3	3	2	3	2.6	3	3	3	3	3	3	3	2	2.9
Avera	**3**	**2**	**3**	**2**	**3**	**3**	**2**	**3**		**3**	**3**	**2.8**	**2.7**	**3**	**2.3**	**2.2**	**2.2**	
PO Mean									**2.6**	**PSO Mean**								**2.6**
Strength of PO				**Strong**						**Strength of PSO Correlation**				**Strong**				

SEMESTER- I			
Allied – I	**Mathematics for Computer Science**		
Course Code: 21UCSA11	**Hrs / week :3**	**Hrs / Semester: 45**	**Credits :3**

Objectives:

- To attain mathematical foundations this is very essential for the study of computer courses.
- To make the students capable of mathematically formulating certain practical problems.
- To understand the concept of central tendencies
- To learn about dispersions and regression
- To provide knowledge about graphs and its applications.

Course Outcomes:

CO.No	Upon completion of this course, students will be able to	PSOs	CL
CO-1	create an argument using logical notation and evaluate if it	1	Cr
CO-2	apply logical reasoning to solve a variety of problems.	4	Ap
CO-3	compute measures of central tendency	4	Ap
CO-4	calculate and compare dispersion , Skewness, kurtosis	4	An
CO-5	compute the shortest path	1	An
CO-6	model problems in computer science using graphs and	1	Ap

21UCSA11 Mathematics for Computer Science

	PO									PSO								
	PO-1	**PO-2**	**PO-3**	**PO-4**	**PO-5**	**PO-6**	**PO-7**	**PO-8**	**Avg**	**PSO-1**	**PSO-2**	**PSO-3**	**PSO-4**	**PSO-5**	**PSO-6**	**PSO-7**	**PSO-8**	**Avg**
CO-1	3	2	2	2	2	3	2	3	**2.4**	3	3	2	3	3	2	2	3	**2.6**
CO-2	3	2	2	2	2	2	2	3	**2.3**	3	3	2	3	3	2	2	3	**2.6**
CO-3	3	2	2	2	2	2	2	3	**2.3**	3	3	2	3	3	2	2	3	**2.6**
CO-4	3	2	2	2	2	2	2	3	**2.3**	3	3	2	3	3	2	2	3	**2.6**
CO-5	3	2	2	2	2	2	2	3	**2.3**	3	3	2	3	3	2	2	3	**2.6**
CO-6	3	2	2	2	2	2	2	3	**2.3**	3	3	2	3	3	2	2	3	**2.6**
Average	**3**	**2**	**2**	**2**	**2**	**2.2**	**2**	**3**		**3**	**3**	**2**	**3**	**3**	**2**	**2**	**3**	
PO Mean									**2.3**	**PSO Mean**								**2.6**
Strength of PO Correlation				**Medium**						**Strength of PSO Correlation**				**Strong**				

SEMESTER- II			
Core II	**C++ Programming**		
Course Code: 21UCSC21	**Hrs / week : 4**	**Hrs / Semester: 60**	**Credits : 4**

Objectives:

- Understand the basic concepts of object oriented programming language
- To develop programming skills using the C++ Programming language.

Course outcome:

CO No.	Upon completion of this course, students will be able to	PSO Addressed	CL
CO-1	know about object-oriented features.	1	Un
CO-2	develop program using inline ,friend function , overloading constructor and destructor	4	Ap
CO-3	develop the array of objects and demonstrate operator overloading	2,6	Un
CO-4	categorize various inheritance methods	1	An
CO-5	understand pointer operations	1	Un
CO-6	understand virtual function and file operations	1	Un

21UCSC21 C ++ Programming																	
	PO									**PSO**							
	PO -1	**PO -2**	**PO -3**	**PO -4**	**PO -5**	**PO -6**	**PO -7**	**PO -8**	**Avg**	**PSO-1**	**PSO -2**	**PSO -3**	**PSO -4**	**PSO -5**	**PSO -6**	**PSO -7**	**PSO -8**	**Avg**
CO-1	3	3	3	2	3	2	2	3	**2.6**	3	3	2	3	3	3	2	3	**2.8**
CO-2	3	2	3	2	3	2	2	3	**2.5**	3	3	2	3	3	3	2	3	**2.8**
CO-3	3	2	3	2	3	2	2	3	**2.5**	3	3	2	3	3	3	2	3	**2.8**
CO-4	3	2	3	2	3	2	2	3	**2.5**	3	3	2	3	3	3	2	3	**2.8**
CO-5	3	2	3	2	3	2	2	3	**2.5**	3	3	2	3	3	3	2	3	**2.8**
CO-6	3	2	3	2	3	2	2	3	**2.5**	3	3	2	3	3	3	2	3	**2.8**
Average	**3**	**2.2**	**3**	**2**	**3**	**2**	**2**	**3**		**3**	**3**	**2**	**3**	**3**	**3**	**2**	**3**	
PO Mean									**2.5**	**PSO Mean**								**2.8**
Strength of PO Correlation				**Strong**						**Strength of PSO Correlation**					**Strong**			

SEMESTER II			
Allied II	**Digital Electronics**		
Course Code: 21UCSA21	**Hrs / week : 3**	**Hrs /Semester:45**	**Credits : 3**

Objectives:

- To Understand the basic concepts used in the design and analysis of digital systems
- To study various Boolean Functions
- To study about number systems
- To Construct digital circuits
- Acquire knowledge in Boolean functions and MSI and LSI logic circuits.

Course Outcome:

CO No.	Upon completion of this course, students will be able to	PSO Addressed	CL
CO-1	understand various number systems and boolean functions.	1	Un
CO-2	apply various methods to simplify boolean function.	4	Ap
CO-3	construct digital circuits for boolean functions with logic gates.	4	Cr
CO-4	design combinational circuits with logic gates.	4	Cr
CO-5	define sequential logic circuits.	1	Re
CO-6	analyse the operation of various flip-flops.	1	An

21UCSA21 Digital Electronics																		
	PO									**PSO**								
	PO-1	**PO-2**	**PO-3**	**PO-4**	**PO-5**	**PO-6**	**PO-7**	**PO-8**	**Avg**	**PSO-1**	**PSO-2**	**PSO-3**	**PSO-4**	**PSO-5**	**PSO-6**	**PSO-7**	**PSO-8**	**Avg**
CO-1	3	2	2	2	2	3	2	2	**2.3**	3	2	2	3	3	2	3	3	**2.6**
CO-2	3	3	2	2	2	3	2	3	**2.5**	3	2	2	3	3	2	3	3	**2.6**
CO-3	3	3	2	2	2	3	2	3	**2.5**	3	2	2	3	3	2	3	3	**2.6**
CO-4	3	3	2	2	2	3	2	3	**2.5**	3	2	2	3	3	2	3	3	**2.6**
CO-5	3	3	2	2	2	3	2	3	**2.5**	3	2	2	3	3	2	3	3	**2.6**
CO-6	3	3	2	2	2	3	2	3	**2.5**	3	2	2	3	3	2	3	3	**2.6**
Average	**3**	**2.8**	**2**	**2**	**2**	**3**	**2**	**2.8**		**3**	**2**	**2**	**3**	**3**	**2**	**3**	**3**	
PO Mean									**2.5**	**PSO Mean**								**2.6**
Strength of PO Correlation				**Strong**						**Strength of PSO Correlation**					**Strong**			

SEMESTER III			
Core – III	**Java Programming**		
Course Code: 21UCSC31	**Hrs / week : 4**	**Hrs /Semester:60**	**Credits : 4**

Objectives:

- To understand the basic concepts of platform independent Object Oriented Language.
- To demonstrate skills in writing programs using exception handling techniques and Multithreading
- To understand streams and efficient user interface design techniques and the concept Applets.

Course Outcomes:

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	knowledge of the structure and model of the Java programming language	1,2	Re
CO-2	develop reusable programs using the concepts of inheritance, polymorphism, interfaces and packages.	2	An
CO-3	apply the concepts of Multithreading and Exception handling to develop efficient and error free codes.	2	Un
CO-4	design event driven GUI .	6	Ap
CO-5	Develop web related applications	8	Ap
CO-6	Develop applications using JDBC	6,8	Ap

21UCSC31 Java Programming																			
	PO									**PSO**									
	PO-1	**PO-2**	**PO-3**	**PO-4**	**PO-5**	**PO-6**	**PO-7**	**PO-8**	**Avg**	**PSO-1**	**PSO-2**	**PSO-3**	**PSO-4**	**PSO-5**	**PSO-6**	**PSO-7**	**PSO-8**	**Avg**
CO-1	3	3	3	3	3	2	2	3	**2.8**	3	3	2	3	3	3	2	3	**2.8**
CO-2	3	3	3	3	3	2	2	3	**2.8**	3	3	2	3	3	3	2	3	**2.8**
CO-3	3	3	3	3	3	2	2	3	**2.8**	3	3	2	3	3	3	2	3	**2.8**
CO-4	3	3	3	3	3	2	2	3	**2.8**	3	3	2	3	3	3	2	3	**2.8**
CO-5	3	3	3	3	3	2	2	3	**2.8**	3	3	2	3	3	3	2	3	**2.8**
CO-6	3	3	3	3	3	2	2	3	**2.8**	3	3	2	3	3	3	2	3	**2.8**
Average	**3**	**3**	**3**	**3**	**3**	**2**	**2**	**3**		**3**	**3**	**2**	**3**	**3**	**3**	**2**	**3**	
PO Mean									**2.8**	**PSO Mean**								**2.8**
Strength of PO				**Strong**						**Strength of PSO Correlation**					**Strong**			

SEMESTER III			
Allied – III	**Data Structures**		
Course Code: 21UCSA31	**Hrs / week : 3**	**Hrs /Semester:45**	**Credits : 3**

Objectives:

- To understand the concepts of basic data structures such as stack, Queues and Linked list.
- To make the students understand the basic algorithms for searching and sorting.
- To represent real world problems using different data structures and solve them using best algorithms

Course Outcomes:

CO No.	**Upon completion of this course, students will be able to**	**PSO addressed**	**CL**
CO-1	compare various search methods	4	An
CO-2	implement hashing methods	4	Ap
CO-3	discuss applications of stack	1	Un
CO-4	create an expression tree for an expression and evaluate it.	2	Cr
CO-5	implement heap concepts	4	Ap
CO-6	compare and contrast sorting methods	4	An

21UCSA31 Data Structures																			
	PO									**PSO**									
	PO-1	**PO-2**	**PO-3**	**PO-4**	**PO-5**	**PO-6**	**PO-7**	**PO-8**	**Avg**	**PSO-1**	**PSO-2**	**PSO-3**	**PSO-4**	**PSO-5**	**PSO-6**	**PSO-7**	**PSO-8**	**Avg**
CO-1	3	3	3	3	2	2	2	2	**2.5**	3	3	2	3	3	3	2	3	**2.8**
CO-2	3	3	3	3	2	2	2	2	**2.5**	3	3	2	3	3	3	2	3	**2.8**
CO-3	3	3	3	3	2	2	2	2	**2.5**	3	3	2	3	3	3	2	3	**2.8**
CO-4	3	3	3	3	2	2	2	2	**2.5**	3	3	2	3	3	3	2	3	**2.8**
CO-5	3	3	3	3	2	2	2	2	**2.5**	3	3	2	3	3	3	2	3	**2.8**
CO-6	3	3	3	3	2	2	2	2	**2.5**	3	3	2	3	3	3	2	3	**2.8**
Average	**3**	**3**	**3**	**3**	**2**	**2**	**2**	**2**		**3**	**3**	**2**	**3**	**3**	**3**	**2**	**3**	
PO Mean									**2.5**	**PSO Mean**								**2.8**
Strength of PO Correlation				**Strong**						**Strength of PSO Correlation**					**Strong**			

SEMESTER- III			
Skill Based Elective	**Microprocessors**		
Course Code: 21UCSS31	**Hrs / week : 2**	**Hrs / Semester: 30**	**Credits : 2**

Objectives:

- To acquire fundamental knowledge on hardware and software concepts of microcomputer and microprocessors architecture and design.
- To provide assembly language programming Techniques.

Course Outcome:

CO	Upon completion of this course, students will be able to	PSO	CL
CO-1	explain basic components and structure of Microprocessor and	1	Un
CO-2	describe 8085 Microprocessor and Memory Interfacing.	1	Un
CO-3	classify the various 8085 Microprocessor instruction set.	1	Un
CO-4	develop Assembly language Programs for various arithmetic	2	Ap
CO-5	develop Assembly language Programs for time delays	1	Ap
CO-6	. understand stack and subroutine operations in 8085	2	Un

21UCSS31 Microprocessors

	PO									PSO								
	PO-1	**PO-2**	**PO-3**	**PO-4**	**PO-5**	**PO-6**	**PO-7**	**PO-8**	**Avg**	**PSO-1**	**PSO-2**	**PSO-3**	**PSO-4**	**PSO-5**	**PSO-6**	**PSO-7**	**PSO-8**	**Avg**
CO-1	2	3	3	2	3	2	2	2	**2.4**	3	3	2	3	2	3	2	3	**2.6**
CO-2	2	3	3	2	3	2	2	2	**2.4**	3	3	2	3	2	3	2	3	**2.6**
CO-3	2	3	3	2	3	2	2	2	**2.4**	3	3	2	3	2	3	2	3	**2.6**
CO-4	2	3	3	2	3	2	2	3	**2.5**	3	3	2	3	3	3	2	3	**2.8**
CO-5	2	3	3	2	3	2	2	3	**2.5**	3	3	2	3	3	3	2	3	**2.8**
CO-6	2	3	3	2	3	2	2	3	**2.5**	3	3	2	3	3	3	2	3	**2.8**
Average	**2**	**3**	**3**	**2**	**3**	**2**	**2**	**2.5**		**3**	**3**	**2**	**3**	**2.5**	**3**	**2**	**3**	
PO Mean									**2.5**	**PSO Mean**								**2.7**
Strength of PO Correlation				**Strong**						**Strength of PSO Correlation**					**Strong**			

SEMESTER- III			
Skill Based Elective 2	**E- Commerce**		
Course Code: 21UCSS32	**Hrs / week :2**	**Hrs / Semester: 30**	**Credits: 2**

Objectives:

- To understand and ascertain the importance E-Commerce
- Acquire knowledge about E-marketing and E-advertising
- To Identify the key security threats in the E-commerce environment.

Course Outcome:

CO	Upon completion of this course, students will be	PSO	CL
CO-1	Explain what is E-Commerce	6	Un
CO-2	Compare different business models of E-commerce	6	An
CO-3	Differentiate E-marketing versus traditional marketing	4	Ap
CO-4	Facilitate online marketing	5	Ap
CO-5	Implement E-advertising	5,8	Cr
CO-6	Devise security for E-Commerce	3	Cr

21UCSS32 E-Commerce																			
	PO									**PSO**									
	PO-1	**PO-2**	**PO-3**	**PO-4**	**PO-5**	**PO-6**	**PO-7**	**PO-8**	**Avg**	**PSO-1**	**PSO-2**	**PSO-3**	**PSO-4**	**PSO-5**	**PSO-6**	**PSO-7**	**PSO-8**	**Avg**
CO-1	2	2	3	3	3	3	2	3	**2.6**	3	3	3	2	3	3	3	3	**2.9**
CO-2	2	2	3	3	3	3	2	3	**2.6**	3	3	3	2	3	3	3	3	**2.9**
CO-3	2	2	3	3	3	3	2	3	**2.6**	3	3	3	2	3	3	3	3	**2.9**
CO-4	2	3	3	3	3	3	2	3	**2.8**	3	3	3	2	3	3	3	3	**2.9**
CO-5	2	3	3	3	3	3	2	3	**2.8**	3	3	3	2	3	3	3	3	**2.9**
CO-6	2	3	3	3	3	3	2	3	**2.8**	3	3	3	2	3	3	3	3	**2.9**
Average	**2**	**2.5**	**3**	**3**	**3**	**3**	**2**	**3**		**3**	**3**	**3**	**2**	**3**	**3**	**3**	**3**	
PO Mean									**2.7**	**PSO Mean**								**2.9**
Strength of PO			**Strong**							**Strength of PSO**						**Strong**		

SEMESTER- III	
Self Study 1 Computer Architecture	
Course Code:21UCSSS1 (Compulsory)	**Credits : 2**

Objectives:

- To study basic computer organization.
- To understand the basic Arithmetic operations algorithms.
- To understand the memory organization.

Course Outcomes:

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	discuss the organization of basic computer	1	Un
CO-2	explain various types of instructions.	1	Un
CO-3	explain general register organization and stack	1	Un
CO-4	explain algorithms for arithmetic operations of various integer number systems	1	Un
CO-5	explain algorithms for arithmetic operations of floating number systems	1,4	Un
CO-6	discuss memory hierarchy with different types of memories.	1,2	Un

21UCSSS1 Computer Architecture

	PO									PSO								
	PO-1	**PO-2**	**PO-3**	**PO-4**	**PO-5**	**PO-6**	**PO-7**	**PO-8**	**Avg**	**PSO-1**	**PSO-2**	**PSO-3**	**PSO-4**	**PSO-5**	**PSO-6**	**PSO-7**	**PSO-8**	**Avg**
CO-1	2	3	3	2	3	2	2	2	**2.4**	3	3	2	3	3	3	2	2	**2.6**
CO-2	2	3	3	2	3	2	2	2	**2.4**	3	3	2	3	3	3	2	2	**2.6**
CO-3	2	3	3	2	3	2	2	2	**2.4**	3	3	2	3	3	3	2	2	**2.6**
CO-4	2	3	3	2	3	2	2	3	**2.5**	3	3	2	3	3	3	2	2	**2.6**
CO-5	2	3	3	2	3	2	2	3	**2.5**	3	3	2	3	3	3	2	2	**2.6**
CO-6	2	3	3	2	3	2	2	3	**2.5**	3	3	2	3	3	3	2	2	**2.6**
Average	**2**	**3**	**3**	**2**	**3**	**2**	**2**	**2.5**		**3**	**3**	**2**	**3**	**3**	**3**	**2**	**2**	
PO Mean									**2.5**	**PSO Mean**								**2.6**
Strength of PO Correlation				**Strong**						**Strength of PSO Correlation**					**Strong**			

SEMESTER IV			
CORE IV	**RDBMS with PHP and MySQL**		
Course Code: 21UCSC41	**Hrs / week : 4**	**Hrs /Semester:60**	**Credits : 4**

Objectives

- To understand the basic elements of a relational database management system
- To identify the data models for relevant problems
- To design entity relationship and convert entity relationship diagrams into RDBMS and formulate SQL queries on the respect data
- To create dynamic web pages and websites.
- To connect webpages with database.

Course Outcomes:

CO No.	Upon completion of this course, students will be able to	PSO Mapped	CL
CO-1	explain the DBMS	1	Un
CO-2	describe Data models	2	Un
CO-3	explain the variable usage in PHP	1	Un
CO-4	creating forms with conditional statements	1	Cr
CO-5	describe about arrays, files, cookies and functions.	2	Un
CO-6	create an application using php and mysql	4	Cr

21UCSC41 RDBMS with PHP and MySQL																		
	PO									**PSO**								
	PO-1	**PO-2**	**PO-3**	**PO-4**	**PO-5**	**PO-6**	**PO-7**	**PO-8**	**Avg**	**PSO-1**	**PSO-2**	**PSO-3**	**PSO-4**	**PSO-5**	**PSO-6**	**PSO-7**	**PSO-8**	**Avg**
CO-1	2	3	3	3	2	2	2	3	**2.5**	3	2	2	3	2	3	2	3	**2.5**
CO-2	2	3	3	3	2	2	2	3	**2.5**	3	2	2	3	2	3	2	3	**2.5**
CO-3	2	3	3	3	2	2	2	3	**2.5**	3	3	3	3	3	3	2	3	**2.9**
CO-4	2	3	3	3	2	2	2	3	**2.5**	3	3	3	3	3	3	2	3	**2.9**
CO-5	2	3	3	3	2	2	2	3	**2.5**	3	3	3	3	3	3	2	3	**2.9**
CO-6	2	3	3	3	2	2	2	3	**2.5**	3	3	3	3	3	3	2	3	**2.9**
Average	**2**	**3**	**3**	**3**	**2**	**2**	**2**	**3**		**3**	**2.7**	**2.7**	**3**	**2.7**	**3**	**2**	**3**	
PO Mean									**2.5**	**PSO Mean**								**2.8**
Strength of PO Correlation			**Strong**							**Strength of PSO Correlation**				**Strong**				

SEMESTER IV			
Allied – IV	**Big Data Analytics**		
Course Code: 21UCSA41	**Hrs / week : 3**	**Hrs /Semester:45**	**Credits : 3**

Objectives:

- To make the students understand Big Data Analytics
- To understand the various algorithms in Big Data Analytics

Course Outcomes:

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand the concept of Big Data	1	Un
CO-2	describe Big data Analytics	4	Un
CO-3	explain Big Data Analytics Process	4	Un
CO-4	understand Machine Learning	6	Un
CO-5	understand artificial Intelligence	6	Un
CO-6	explain the Applications of Big Data	5,8	Ap

21UCSA41 Big Data Analytics																		
	PO									**PSO**								
	PO-1	**PO-2**	**PO-3**	**PO-4**	**PO-5**	**PO-6**	**PO-7**	**PO-8**	**Avg**	**PSO-1**	**PSO-2**	**PSO-3**	**PSO-4**	**PSO-5**	**PSO-6**	**PSO-7**	**PSO-8**	**Avg**
CO-1	2	3	3	3	2	3	2	2	**2.5**	3	2	2	3	2	3	2	3	**2.5**
CO-2	2	3	3	3	2	3	3	2	**2.6**	3	2	2	3	2	3	2	3	**2.5**
CO-3	2	3	3	3	2	3	3	2	**2.6**	3	2	2	3	2	3	2	3	**2.5**
CO-4	2	3	3	3	2	3	3	2	**2.6**	3	2	2	3	2	3	2	3	**2.5**
CO-5	2	3	3	3	2	3	3	2	**2.6**	3	2	2	3	2	3	2	3	**2.5**
CO-6	3	3	3	3	3	3	3	2	**2.9**	3	3	3	3	3	3	2	3	**2.9**
Average	**2.2**	**3**	**3**	**3**	**2.2**	**3**	**2.8**	**2**		**3**	**2.2**	**2.2**	**3**	**2.2**	**3**	**2**	**3**	
PO Mean									**2.6**	**PSO Mean**								**2.6**
Strength of PO Correlation			**Strong**							**Strength of PSO Correlation**			**Strong**					

SEMESTER- IV			
Skill Based Elective 2	**Cyber Security**		
Course Code: 21UCSS42	**Hrs / week :2**	**Hrs / Semester: 30**	**Credits: 2**

Objectives:

- To understand the basic concepts of Cyber Ethics, Virtues and Values
- To design and develop a security architecture for society.
- To learn about how to maintain the Confidentiality, Integrity and Availability of a data

Course Outcome:

CO.No.	Upon completion of this course, students will be	PSO	CL
CO-1	identify how security issues in cyberspace raise ethical concerns	3	Un
CO-2	adapting Artificial Intelligence Ethics	6,8	Cr
CO-3	acquire the knowledge of Cyber laws, regulations in information Society	3	Un
CO-4	identify and explore the different types of Cyber Crimes	8	Un
CO-5	appraise the Cyber offences	5	Ev
CO-6	assess Cyber Bullying and digital literacy for protecting children from bullying.	8	Ap

21UCSS42 Cyber Security

	PO									PSO								
	PO-1	**PO-2**	**PO-3**	**PO-4**	**PO-5**	**PO-6**	**PO-7**	**PO-8**	**Avg**	**PSO-1**	**PSO-2**	**PSO-3**	**PSO-4**	**PSO-5**	**PSO-6**	**PSO-7**	**PSO-8**	**Avg**
CO-1	2	3	3	3	3	3	3	3	**2.9**	3	2	3	3	2	3	2	3	**2.6**
CO-2	2	3	3	3	3	3	3	3	**2.9**	3	2	3	3	2	3	2	3	**2.6**
CO-3	2	3	3	3	3	3	3	3	**2.9**	3	2	3	3	2	3	2	3	**2.6**
CO-4	2	3	3	3	3	3	3	3	**2.9**	3	2	3	3	2	3	2	3	**2.6**
CO-5	2	3	3	3	3	3	3	3	**2.9**	3	2	3	3	2	3	2	3	**2.6**
CO-6	2	3	3	3	3	3	3	3	**2.9**	3	2	3	3	2	3	2	3	**2.6**
Average	**2.2**	**3**	**3**	**3**	**2.2**	**3**	**2.8**	**2**		**3**	**2.2**	**2.2**	**3**	**2.2**	**3**	**2**	**3**	
PO Mean									**2.9**	**PSO Mean**								**2.6**
Strength of PO Correlation			**Strong**							**Strength of PSO Correlation**			**Strong**					

SEMESTER IV	
Self Study (optional)	**Web Technology**
Course Code: 21UCSSS2	**Credits :2**

Objectives:

- Understand the principles of creating an effective Web page.
- Learn the language of the web:HTML and CSS
- Develop basic programming skills using javaScript.
- Be able to embed social media content into webpages

Course Outcomes:

CO No.	Upon completion of this course, students will be able to	PSO Mapped	CL
CO-1	understand Internet standard and Internet protocols	1	Un
CO-2	demonstrate JavaScript	6	Ap
CO-3	develop dynamic web pages using JavaScript (client side programming).	5	Ap
CO-4	design interactive web pages using DHTML	5	Ap
CO-5	discuss how XML DTDs differ from XML schemas	1	An
CO-6	design a simple website	6	Ap

21UCSSS2 Web Technology																		
	PO									**PSO**								
	PO-1	**PO-2**	**PO-3**	**PO-4**	**PO-5**	**PO-6**	**PO-7**	**PO-8**	**Avg**	**PSO-1**	**PSO-2**	**PSO-3**	**PSO-4**	**PSO-5**	**PSO-6**	**PSO-7**	**PSO-8**	**Avg**
CO-1	2	3	3	2	3	3	2	3	**2.6**	3	3	2	3	3	3	3	3	**2.9**
CO-2	2	3	3	2	3	3	2	3	**2.6**	3	3	2	3	3	3	3	3	**2.9**
CO-3	2	3	3	2	3	3	2	3	**2.6**	3	3	2	3	3	3	3	3	**2.9**
CO-4	2	3	3	2	3	3	2	3	**2.6**	3	3	2	3	3	3	3	3	**2.9**
CO-5	2	3	3	2	3	3	2	3	**2.6**	3	3	2	3	3	3	3	3	**2.9**
CO-6	2	3	3	2	3	3	2	3	**2.6**	3	3	2	3	3	3	3	3	**2.9**
Average	**2**	**3**	**3**	**2**	**3**	**3**	**2**	**3**		**3**	**3**	**2**	**3**	**3**	**3**	**3**	**3**	
PO Mean									**2.6**	**PSO Mean**								**2.9**
Strength of PO Correlation				**Strong**						**Strength of PSO Correlation**					**Strong**			

Semester-V			
Common Core VII Computer Oriented Numerical Methods			
CourseCode: 21UCMC51	**Hrs/Week: 6**	**Hrs/Sem: 90**	**Credits : 5**

Objectives:

- To understand different methods of solution of the equations and compare them.
- To understand and apply different methods to find the value of definite integrals.
- To Understand the MATLAB environment.
- To introduce students to the use of a high-level programming language, MATLAB.
- Being able to do simple calculations using MATLAB

Course Outcome:

CO. No.	Upon completion of this course, students will be able to	PSO Addressed	CL
CO-1	recognize and apply appropriate principles and concepts relevant to Numerical Analysis.	6	Ap
CO-2	discover the most appropriate estimate for the missing data.	4	Cr
CO-3	analyze the errors obtained in the numerical solutions of problems.	4	An
CO-4	demonstrate the method of interpolation and find the solution for the data.	6	Un
CO-5	analyze and visualize data	4	An
CO-6	create and control simple plot and user-interface graphics objects in MATLAB	2,8	Cr

21UCMC51 Computer Oriented NumericalMethods

	PO									PSO								
	PO-1	**PO-2**	**PO-3**	**PO-4**	**PO-5**	**PO-6**	**PO-7**	**PO-8**	**Avg**	**PSO-1**	**PSO-2**	**PSO-3**	**PSO-4**	**PSO-5**	**PSO-6**	**PSO-7**	**PSO-8**	**Avg**
CO-1	2	3	2	2	3	2	2	3	**2.4**	2	2	2	3	3	2	2	3	**2.4**
CO-2	2	3	2	2	3	2	2	3	**2.4**	2	2	2	3	3	2	2	3	**2.4**
CO-3	2	3	2	2	3	2	2	3	**2.4**	2	2	2	3	3	2	2	3	**2.4**
CO-4	2	3	2	2	3	2	2	3	**2.4**	2	2	2	3	3	2	2	3	**2.4**
CO-5	2	3	2	2	3	2	2	3	**2.4**	2	2	2	3	3	2	2	3	**2.4**
CO-6	2	3	2	2	3	2	2	3	**2.4**	2	2	2	3	3	2	2	3	**2.4**
Average	**2**	**3**	**2**	**2**	**3**	**2**	**2**	**3**		**2**	**2**	**2**	**3**	**3**	**2**	**2**	**3**	
PO Mean									**2.4**	**PSO Mean**								**2.4**
Strength of PO				**Medium**						**Strength of PSO**						**Medium**		

SEMESTER- V			
Core VIII	**Operating Systems**		
Course Code: 21UCSC51	**Hrs / week :4**	**Hrs / Semester: 60**	**Credits :4**

Objectives:

- To acquire the fundamental knowledge of the operating system architecture and components and to know the various operations performed by the operating system.
- Understand the basic working process of an operating system.
- Understand the importance of process and scheduling.
- Understand the issues in synchronization and memory management.
- Know about open source operating system Linux

Course Outcome:

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	define Operating System Structure and the various operations , process of operating system	1	Re
CO-2	analyze the Various Scheduling Algorithms of Process Management	4	An
CO-3	explain the concept of Deadlock.	4	Re
CO-4	implement the various allocation methods of Memory Management	5	Ap
CO-5	discuss about open source software	6	Un
CO-6	compare Linux with other operating systems	6	An

21UCSC51 Operating Systems																			
	PO									**PSO**									
	PO-1	**PO-2**	**PO-3**	**PO-4**	**PO-5**	**PO-6**	**PO-7**	**PO-8**	**Avg**	**PSO-1**	**PSO-2**	**PSO-3**	**PSO-4**	**PSO-5**	**PSO-6**	**PSO-7**	**PSO-8**	**Avg**
CO-1	2	3	2	2	3	3	2	3	**2.5**	3	3	2	3	3	3	2	3	**2.8**
CO-2	2	3	2	2	3	3	2	3	**2.5**	3	3	2	3	3	3	2	3	**2.8**
CO-3	2	3	2	2	3	3	2	3	**2.5**	3	3	2	3	3	3	2	3	**2.8**
CO-4	2	3	2	2	3	3	2	3	**2.5**	3	3	2	3	3	3	2	3	**2.8**
CO-5	2	3	2	2	3	3	2	3	**2.5**	3	3	2	3	3	3	2	3	**2.8**
CO-6	2	3	2	2	3	3	2	3	**2.5**	3	3	2	3	3	3	2	3	**2.8**
Aver	**2**	**3**	**2**	**2**	**3**	**3**	**2**	**3**		**3**	**3**	**2**	**3**	**3**	**3**	**2**	**3**	
PO Mean									**2.5**	**PSO Mean**								**2.8**
Strength of PO				**Strong**						**Strength of PSO**						**Strong**		

SEMESTER- V			
Core IX	**Python Programming**		
Course Code: 21UCSC52	**Hrs / week :4**	**Hrs / Semester: 60**	**Credits :4**

Objectives

- To understand about python
- To learn about various objects list, tuples and dictionaries
- To obtain knowledge about pattern matching
- To use recursion to solve problems
- To understand files and use them for reading and writing.

Course Outcome:

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	explain what is python and how to execute python programs	2	Un
CO-2	distinguish various python objects	1	An
CO-3	apply decision and repetition structures in program design.	2	An
CO-4	demonstrate the use of Python lists and dictionaries	1	Ap
CO-5	demonstrate how to read and write files Programs in Python	2	Ap
CO-6	develop Python programs using files.	5	Ap

21UCSC52 Python Programming																		
	PO									**PSO**								
	PO-1	**PO-2**	**PO-3**	**PO-4**	**PO-5**	**PO-6**	**PO-7**	**PO-8**	**Avg**	**PSO-1**	**PSO-2**	**PSO-3**	**PSO-4**	**PSO-5**	**PSO-6**	**PSO-7**	**PSO-8**	**Avg**
CO-1	3	3	3	2	3	3	2	3	**2.8**	3	3	2	3	3	3	2	3	**2.8**
CO-2	3	3	3	2	3	3	2	3	**2.8**	3	3	2	3	3	3	2	3	**2.8**
CO-3	3	3	3	2	3	3	2	3	**2.8**	3	3	2	3	3	3	2	3	**2.8**
CO-4	3	3	3	2	3	3	2	3	**2.8**	3	3	2	3	3	3	2	3	**2.8**
CO-5	3	3	3	2	3	3	2	3	**2.8**	3	3	2	3	3	3	2	3	**2.8**
CO-6	3	3	3	2	3	3	2	3	**2.8**	3	3	2	3	3	3	2	3	**2.8**
Ave	**3**	**3**	**3**	**2**	**3**	**3**	**2**	**3**		**3**	**3**	**2**	**3**	**3**	**3**	**2**	**3**	
PO Mean									**2.8**	**PSO Mean**								**2.8**
Strength of PO				**Strong**						**Strength of PSO**						**Strong**		

SEMESTER- V			
Core – Elective I	**Data Mining**		**D**
Course Code: 21UCSE51	**Hrs / week :4**	**Hrs / Semester: 60**	**Credits :4**

Objectives:

- To understand the basic techniques of data Mining
- To introduce research applications of data mining
- To develop skills of web data mining

Course Outcome:

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	implement Apriori algorithm	2	Ap
CO-2	compare different classification methods	4	An
CO-3	implement cluster analysis	6	Ap
CO-4	demonstrate the usage of various search engines	3	An
C0-5	discuss about data warehousing	6	Re
CO-6	compare and contrast OLAP AND OLTP	8	An

21UCSC52 Python Programming																			
	PO									**PSO**									
	PO-1	**PO-2**	**PO-3**	**PO-4**	**PO-5**	**PO-6**	**PO-7**	**PO-8**	**Avg**	**PSO-1**	**PSO-2**	**PSO-3**	**PSO-4**	**PSO-5**	**PSO-6**	**PSO-7**	**PSO-8**	**Avg**
CO-1	3	3	3	3	3	2	2	3	**2.8**	3	3	2	3	3	3	2	3	**2.8**
CO-2	3	3	3	3	3	2	2	3	**2.8**	3	3	2	3	3	3	2	3	**2.8**
CO-3	3	3	3	3	3	2	2	3	**2.8**	3	3	2	3	3	3	2	3	**2.8**
CO-4	3	3	3	3	3	2	2	3	**2.8**	3	3	2	3	3	3	2	3	**2.8**
CO-5	3	3	3	3	3	2	2	3	**2.8**	3	3	2	3	3	3	2	3	**2.8**
CO-6	3	3	3	3	3	2	2	3	**2.8**	3	3	2	3	3	3	2	3	**2.8**
Aver	**3**	**3**	**3**	**3**	**3**	**2**	**2**	**3**		**3**	**3**	**2**	**3**	**3**	**3**	**2**	**3**	
PO Mean									**2.8**	**PSO Mean**								**2.8**
Strength of PO				**Strong**						**Strength of PSO**						**Strong**		

SEMESTER- V			
Core – Elective I	**Introduction to IoT**		**D**
Course Code: 21UCSE52	**Hrs / week :4**	**Hrs / Semester: 60**	**Credits :4**

Objectives:

- To understand the building blocks of the Internet of Things and characteristics.
- To understand the application areas of IoT ·
- To realize the revolution of Internet in Mobile Devices, Cloud & Sensor Networks ·
- To design some IoT based prototype

Course Outcome:

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand and recall the characteristics and enabling technologies of IoT	8	Re
CO-2	analyse the appropriate transport protocols, addressing and identification techniques suitable for IoT Domain	6	An
CO-3	explore the apt cloud services and cloud service providers for IoT based Smart services	8	Ap
C0-4	discuss about challenges and obstacles of IoT	8	An
CO-5	compare and contrast fog and cloud computing	4	An
CO-6	describe IoT based Application to Monitor Water Quality	3	Un

21UCSE52 Introduction to IoT																		
	PO									**PSO**								
	PO-1	**PO-2**	**PO-3**	**PO-4**	**PO-5**	**PO-6**	**PO-7**	**PO-8**	**Avg**	**PSO-1**	**PSO-2**	**PSO-3**	**PSO-4**	**PSO-5**	**PSO-6**	**PSO-7**	**PSO-8**	**Avg**
CO-1	3	3	3	3	3	2	2	3	**2.8**	3	2	3	3	3	3	2	3	**2.8**
CO-2	3	3	3	3	3	2	2	3	**2.8**	3	2	3	3	3	3	2	3	**2.8**
CO-3	3	3	3	3	3	2	2	3	**2.8**	3	2	3	3	3	3	2	3	**2.8**
CO-4	3	3	3	3	3	2	2	3	**2.8**	3	2	3	3	3	3	2	3	**2.8**
CO-5	3	3	3	3	3	2	2	3	**2.8**	3	2	3	3	3	3	2	3	**2.8**
CO-6	3	3	3	3	3	2	2	3	**2.8**	3	2	3	3	3	3	2	3	**2.8**
Average	**3**	**3**	**3**	**3**	**3**	**2**	**2**	**3**		**3**	**2**	**3**	**3**	**3**	**3**	**2**	**3**	
PO Mean									**2.8**	**PSO Mean**								**2.8**
Strength of PO			**Strong**							**Strength of PSO Correlation**					**Strong**			

SEMESTER- V	
Self Study Course III **Mathematical Reasoning**	**D**
Course Code: 21UCSSS3 (Optional)	**Credits :2**

Objectives:

- Learn to build new mathematical knowledge through problem solving.
- Learn to use a combination of appropriate algebraic, graphical, and numerical methods to form conjectures about, and to solve, problems.
- Gain the ability to recognize inappropriate assumptions and solutions.

Course Outcome:

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	simplify various expressions	4	Ev
CO-2	determine Averages of various calculations	6	Ap
CO-3	evaluate Partnership in enterprises	3	Ev
CO-4	analyse Percentage computation	6	An
CO-5	evaluate profit and loss.	6	Ev
CO-6	apply Simple interest and Compound interest Calculation	5	Ap

21UCSSS3 Mathematical Reasoning																			
	PO									**PSO**									
	PO-1	**PO-2**	**PO-3**	**PO-4**	**PO-5**	**PO-6**	**PO-7**	**PO-8**	**Avg**	**PSO-1**	**PSO-2**	**PSO-3**	**PSO-4**	**PSO-5**	**PSO-6**	**PSO-7**	**PSO-8**	**Avg**
CO-1	2	2	2	2	3	2	2	3	**2.3**	2	2	2	3	3	2	2	2	**2.3**
CO-2	2	2	2	2	3	2	2	3	**2.3**	2	2	2	3	3	2	2	2	**2.3**
CO-3	2	2	2	2	3	2	2	3	**2.3**	2	2	2	3	3	2	2	2	**2.3**
CO-4	2	2	2	2	3	2	2	3	**2.3**	2	2	2	3	3	2	2	2	**2.3**
CO-5	2	2	2	2	3	2	2	3	**2.3**	2	2	2	3	3	2	2	2	**2.3**
CO-6	2	2	2	2	3	2	2	3	**2.3**	2	2	2	3	3	2	2	2	**2.3**
Average	**2**	**2**	**2**	**2**	**3**	**2**	**2**	**3**		**2**	**2**	**2**	**3**	**3**	**2**	**2**	**2**	
PO Mean									**2.3**	**PSO Mean**								**2.3**
Strength of PO Correlation				**Medium**						**Strength of PSO Correlation**					**Medium**			

SEMESTER VI			
Core – X	**.NET Programming**		
Course Code: 21UCSC61	**Hrs / week :5**	**Hrs / Semester: 75**	**Credits :4**

Objectives:

- To understand .NET framework.
- To learn C# programming.
- To attain Knowledge about web server controls.
- To learn about validation techniques and apply it.
- To know about ADO.NET.

Course Outcome:

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	understand .NET framework	1	Re
CO-2	develop console applications with c#	2	Ap
CO-3	create web server applications using ASP.NET	6	Cr
CO-4	implement validation controls	2	Ap
CO-5	design applications with server controls	2	Cr
CO-6	develop databases using ADO.NET	2, 8	Ap

21UCSC61 .NET Programming																			
	PO									**PSO**								
	PO-1	**PO-2**	**PO-3**	**PO-4**	**PO-5**	**PO-6**	**PO-7**	**PO-8**	**Avg**	**PSO-1**	**PSO-2**	**PSO-3**	**PSO-4**	**PSO-5**	**PSO-6**	**PSO-7**	**PSO-8**	**Avg**
CO-1	3	3	3	3	3	2	2	3	**2.8**	3	3	2	3	3	3	2	3	**2.8**
CO-2	3	3	3	3	3	2	2	3	**2.8**	3	3	2	3	3	3	2	3	**2.8**
CO-3	3	3	3	3	3	2	2	3	**2.8**	3	3	2	3	3	3	2	3	**2.8**
CO-4	3	3	3	3	3	2	2	3	**2.8**	3	3	2	3	3	3	2	3	**2.8**
CO-5	3	3	3	3	3	2	2	3	**2.8**	3	3	2	3	3	3	2	3	**2.8**
CO-6	3	3	3	3	3	2	2	3	**2.8**	3	3	2	3	3	3	2	3	**2.8**
Average	**3**	**3**	**3**	**3**	**3**	**2**	**2**	**3**		**3**	**3**	**2**	**3**	**3**	**3**	**2**	**3**	
PO Mean									**2.8**	**PSO Mean**								**2.8**
Strength of PO Correlation				**Strong**						**Strength of PSO Correlation**						**Strong**		

SEMESTER VI			
Core – XI	**Software Engineering**		
Course Code: 21UCSC62	**Hrs / week :5**	**Hrs / Semester: 75**	**Credits :4**

Objectives:

- Understand the concept of Software Engineering and its importance.
- Elicit and validate different types of requirements.
- Do different testing and enforce safety and security
- Understand component models and architectural patterns for distributed and embedded systems.
- Apply engineering principles and techniques in software development.

Course Outcomes:

CO No.	Upon completion of this course, students will be able to	PSO Mapped	CL
CO-1	describe Software development Process	1	Un
CO-2	discuss software Requirements and Architectural Design	1,3	Un
CO-3	explain Reliability and Safety Engineering	6	Un
CO-4	understand component models and architectural patterns for distributed and embedded systems.	1	Un
CO-5	explain engineering principles and techniques in software development.	2	Un
CO-6	discuss Software Quality Management System	1	Un

21UCSC62 Software Engineering																			
	PO									**PSO**									
	PO-1	**PO-2**	**PO-3**	**PO-4**	**PO-5**	**PO-6**	**PO-7**	**PO-8**	**Avg**	**PSO-1**	**PSO-2**	**PSO-3**	**PSO-4**	**PSO-5**	**PSO-6**	**PSO-7**	**PSO-8**	**Avg**
CO-1	2	3	3	3	3	3	2	3	**2.8**	3	3	2	3	3	2	3	3	**2.8**
CO-2	2	3	3	3	3	3	2	3	**2.8**	3	3	2	3	3	2	3	3	**2.8**
CO-3	2	3	3	3	3	3	2	3	**2.8**	3	3	2	3	3	2	3	3	**2.8**
CO-4	2	3	3	3	3	3	2	3	**2.8**	3	3	2	3	3	2	3	3	**2.8**
CO-5	2	3	3	3	3	3	2	3	**2.8**	3	3	2	3	3	2	3	3	**2.8**
CO-6	2	3	3	3	3	3	2	3	**2.8**	3	3	2	3	3	2	3	3	**2.8**
Average	**2**	**3**	**3**	**3**	**3**	**3**	**2**	**3**		**3**	**3**	**2**	**3**	**3**	**2**	**3**	**3**	
PO Mean									**2.8**	**PSO Mean**								**2.8**
Strength of PO Correlation				**Strong**						**Strength of PSO Correlation**					**Strong**			

SEMESTER VI			
Core – XII	**Computer Networks**		
Course Code: 21UCSC63	**Hrs / week :5**	**Hrs / Semester:75**	**Credits :4**

Objectives:

- To understand the concepts of data communication.
- To understand the different network topologies.
- To study the function of different layers.
- To get familiarized with different protocols and network components.

Course Outcome:

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	define Network and the various types of Network	1	Re
CO-2	analyze the structure of Switch and the Protocols.	4	An
CO-3	discuss Connection devices by using Wired LANs	1	Ap
CO-4	describe the various routing algorithms in network layer	4	Un
CO-5	define Network Security and other aspects of Security	1	Re
CO-6	acquire the basic knowledge of layers of OSI model	1	Re

21UCSC63 Computer Networks																			
	PO									**PSO**								
	PO-1	**PO-2**	**PO-3**	**PO-4**	**PO-5**	**PO-6**	**PO-7**	**PO-8**	**Avg**	**PSO-1**	**PSO-2**	**PSO-3**	**PSO-4**	**PSO-5**	**PSO-6**	**PSO-7**	**PSO-8**	**Avg**
CO-1	2	2	3	3	3	3	2	3	**2.6**	3	3	2	3	3	3	2	3	**2.8**
CO-2	3	2	3	3	3	3	2	3	**2.8**	3	3	2	3	3	3	2	3	**2.8**
CO-3	3	2	3	3	3	3	2	3	**2.8**	3	3	2	3	3	3	2	3	**2.8**
CO-4	3	2	3	3	3	3	2	3	**2.8**	3	3	2	3	3	3	2	3	**2.8**
CO-5	3	2	3	3	3	3	2	3	**2.8**	3	3	2	3	3	3	2	3	**2.8**
CO-6	3	2	3	3	3	3	2	3	**2.8**	3	3	2	3	3	3	2	3	**2.8**
Aver	**2.8**	**2**	**3**	**3**	**3**	**3**	**2**	**3**		**3**	**3**	**2**	**3**	**3**	**3**	**2**	**3**	
PO Mean									**2.8**	**PSO Mean**								**2.8**
Strength of PO				**Strong**						**Strength of PSO**						**Strong**		

SEMESTER VI			
Core – Elective II	**Cloud Computing**		
Course Code: 21UCSE61	**Hrs / week :4**	**Hrs / Semester: 60**	**Credits :4**

Objectives:

- To impart knowledge on the concepts of cloud computing, monitoring, management and applications of clouds
- To analyse various cloud programming models and apply them to solve problems on the cloud.
- To study the available cloud services and open-source solutions

Course Outcome:

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	examine the characteristics of cloud	3	An
CO-2	identify the technical foundations of cloud system architecture	3	An
CO-3	characterize the distinction between infrastructure ,platform, software and service	6	An
CO-4	illustrate the use of load balancing techniques	5	Ap
CO-5	compare and contrast the various web services	8	An
CO-6	demonstrate the usage of mail services	7	An

21UCSE61 Cloud Computing																			
	PO									**PSO**									
	PO-1	**PO-2**	**PO-3**	**PO-4**	**PO-5**	**PO-6**	**PO-7**	**PO-8**	**Avg**	**PSO-1**	**PSO-2**	**PSO-3**	**PSO-4**	**PSO-5**	**PSO-6**	**PSO-7**	**PSO-8**	**Avg**
CO-1	3	2	3	2	3	3	3	3	**2.8**	3	3	3	3	3	3	2	3	**2.9**
CO-2	3	2	3	2	3	3	3	3	**2.8**	3	3	3	3	3	3	2	3	**2.9**
CO-3	3	2	3	2	3	3	3	3	**2.8**	3	3	3	3	3	3	2	3	**2.9**
CO-4	3	2	3	2	3	3	3	3	**2.8**	3	3	3	3	3	3	2	3	**2.9**
CO-5	3	2	3	2	3	3	3	3	**2.8**	3	3	3	3	3	3	2	3	**2.9**
CO-6	3	2	3	2	3	3	3	3	**2.8**	3	3	3	3	3	3	2	3	**2.9**
Aver	**3**	**2**	**3**	**2**	**3**	**3**	**3**	**3**		**3**	**3**	**3**	**3**	**3**	**3**	**2**	**3**	
PO Mean									**2.8**	**PSO Mean**								**2.9**
Strength of PO				**Strong**						**Strength of PSO Correlation**					**Strong**			

SEMESTER VI			
Core – Elective II	**Mobile Computing**		
Course Code: 21UCSE62	**Hrs / week :4**	**Hrs / Semester: 60**	**Credits :4**

Objectives:

- Learn and build Android Applications using the Android SDK.
- Learn about packages and deploying Applications.
- Learnto deploy software to mobile devices.

Course Outcomes:

CO No.	Upon completion of this course, students will be able to	PSO Mapped	CL
CO-1	distinguish different mobile techniques	8	Re
CO-2	install Android SDK	6	Ap
CO-3	design User Interface	5	Cr
CO-4	modify app to include multimedia content	6	An
CO-5	create app with Google Maps	3	Cr
CO-6	design messaging app	5	Cr

21UCSE61 Mobile Computing																			
	PO									**PSO**									
	PO-1	**PO-2**	**PO-3**	**PO-4**	**PO-5**	**PO-6**	**PO-7**	**PO-8**	**Avg**	**PSO-1**	**PSO-2**	**PSO-3**	**PSO-4**	**PSO-5**	**PSO-6**	**PSO-7**	**PSO-8**	**Avg**
CO-1	3	3	3	3	3	2	3	3	**2.9**	3	3	3	3	3	3	3	3	**3**
CO-2	3	3	3	3	3	2	3	3	**2.9**	3	3	3	3	3	3	3	3	**3**
CO-3	3	3	3	3	3	2	3	3	**2.9**	3	3	3	3	3	3	3	3	**3**
CO-4	3	3	3	3	3	2	3	3	**2.9**	3	3	3	3	3	3	3	3	**3**
CO-5	3	3	3	3	3	2	3	3	**2.9**	3	3	3	3	3	3	3	3	**3**
CO-6	3	3	3	3	3	2	3	3	**2.9**	3	3	3	3	3	3	3	3	**3**
Average	**3**	**3**	**3**	**3**	**3**	**2**	**3**	**3**		**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	
PO Mean									**2.9**	**PSO Mean**								**3**
Strength of PO				**Strong**						**Strength of PSO Correlation**				**Strong**				