CAUVERY COLLEGE FOR WOMEN(AUTONOMOUS) Nationally Accredited with 'A' Grade by NAAC ISO 9001:2015 Certified TIRUCHIRAPPALLI

DEPARTMENT OF INFORMATION TECHNOLOGY

SYLLABUS

2024 - 2025



CAUVERY COLLEGE FOR WOMEN (AUTONOMOUS) Nationally accredited (III Cycle) with "A" Grade ISO 9001:2015 Certified Annamalai Nagar, Tiruchirappalli – 18

DEPARTMENT OF INFORMATION TECHNOLOGY

Vision

The Department of Information Technology envisions to create technically competent, skilled intellectual IT professionals, efficient problem solvers, innovators and entrepreneurs to meet the current challenges of the modern computing industry.

Mission

- > To provide quality education and elevate the students towards higher educational programs
- To encourage and guide the students to improve their competency skills in information technology market

To equip the students to cater the industrial demands through providing advance

training



UG Programme Structure (Science)

Cauvery College for Women (Autonomous) Department of Information Technology B.Sc Information Technology LEARNING OUTCOME BASED CURRICULUM

FRAMEWORK (CBCS – LOCF)

(For the Candidates admitted from the Academic year 2024-2025 and onwards)

Sem	Part Course		Course Title	Course	Inst.	Credits	Exam			Total
				Code	nrs.		Hr	Ma	rks	
								Int.	E xt	
	I		பொதுத்தமிழ் - 1	23ULT1						
		Language Course -I (LC)	Hindi Ka Samanya Gyan aur Nibandh	23ULH1				25	75	
			Poetry,Grammar and History of Sanskrit Literature	23ULS1	6	3	3			100
			Foundation Course: Paper I- French – I	23ULF1						
	II	English Language Course-I(ELC)	General English -I	23UE1	6	3	3	25	75	100
I		Core Course – I(CC)	Programming in C	23UIT1CC1	5	5	3	25	75	100
		Core Practical - I (CP)	C Programming (P)	23UIT1CC1P	3	3	3	25	75	100
	III	First Allied Course-I(AC)	Essential Mathematics	22UIT1AC1	4	3	3	25	75	100
		First Allied Course-II(AC)	Numerical Methods	22UIT1AC2	4	3	3	25	75	100
	IV	Ability Enhancement Compulsory Course-I (AECC)	Value Education	23UGVE	2	2		100		100
	Total					22				700

				Inst.	Credit		Exa	ım		
Semester	Part	Course	Course Title	Course Code	Hrs./	Credit s	Η	N	Iarks	Total
					week		rs	Int.	Ext	
			பொதுத்தமிழ்	23ULT2						
II			- II							
			Hindi Literature	22ULH2			3			
	т	Language	& Grammar – II		6	3		25	75	100
	1	Course-II(LC)	Prose, Grammar	23ULS2		0	U		10	100
			and History of							
			Sanskrit literature							
			Basic French – II	22ULF2						
		English Language	General English-	23UE2	6	3	3	25	75	100
	II	Course- II(ELC)	П							
		Core Course – II	Data Structures	23UIT2CC2	4	4	3	25	75	100
		(CC)	and Algorithms							
		Core Practical - II	Data Structures	23UIT2CC2P	2	2	3	40	60	100
	***	(CP)	using C(P)							
	111	Core Course-	Digital	22UIT2CC3	4	4	3	75	25	100
		III(CC)	Fundamentals							
		First Allied	Operations	22UIT2AC3	4	3	3	25	75	100
		Course-III(AC)	Research							
	IV	Ability	Environmental	22UGEVS	2	2	-	100	-	100
		Enhancement	Studies							
		Compulsory								
		Course-II(AECC)								
		Ability	Innovation and	22UGIE	2	1	-	100	-	100
		Enhancement	Entrepreneurship							
		Compulsory								
		Course-								
		III(AECC)								
		Extra Credit	SWAYAM		As per	UGC Rec	omm	endati	on	<u> </u>
	Course									
	Tota	1	1	1	30	22				800

					Inst.			Exam		Total
Sem	Part	Course	Course Title	Course Code	Hrs. /	Cre dits	Но	Ma	rks	Total
					week		urs	Int	Ext	
	Ι	Language	பொதுத்தமிழ்-III	23ULT3						
		Course-III (LC)	Hindi Literature & Grammar - III	22ULH3			3	25	75	
			Prose, Grammar and History of Sanskrit Literature	23ULS3	6	3				100
			Intermediate French - I	22ULF3						
	II	English Language Course- II(ELC)	Learning Grammar Through Literature- I	23UE3	6	3	3	25	75	100
	III Core IV(C	Core Course– IV(CC)	Relational Database Management Systems	23UIT3CC4	6	5	3	25	75	100
III		Core Practical - III(CP)	RDBMS (P)	22UIT3CC3P	3	3	3	40	60	100
		Second Allied Course- I(AC)	Financial Accounting	22UIT3AC4	4	3	3	25	75	100
		Second Allied Course-II(AP)	Computer Applications in Business (P)	23UIT3AC5P	3	3	3	40	60	100
	IV	Generic Elective Course	Web Design	22UIT3GEC1						
		I(GEC)	Basic Tamil - I	22ULC3BT1	2	2	3	25	75	100
			Special Tamil - I	22ULC3ST1						
	Extra Credit Course SWAYAM -						UGC	Recomm	endatio	'n
			Total	·	30	22				700

Semester I	Internal Ma	External Mark: 75		
COURSE CODE	COURSE TITLE	CATEGORY	Hrs/Week	CREDITS
23UIT1CC1	PROGRAMMING IN C	CORE COURSE – I (CC)	5	5

- To familiarize the students with the understanding of code organization
- To improve the programming skills
- Learning the basic programming constructs.

Course Outcomes and Cognitive Level Mapping

CO Number	Course Outcome	Cognitive Level
CO1	Outline the fundamental concepts of C programming languages, and its features	K1
CO2	Demonstrate the programming methodology.	K2
CO3	Identify suitable programming constructs for problem solving.	K3
CO4	Select the appropriate data representation, control structures, functions and concepts based on the problem requirement.	K4
CO5	Evaluate the program performance by fixing the errors.	K5

Mapping of CO with PO and PSO

	PSO1	PSO2	PSO3	PSO4	PSO5	PO1	PO2	PO3	PO4	PO5
CO1	2	2	3	2	1	2	2	2	3	2
CO2	3	2	3	2	2	3	3	2	3	2
CO3	3	3	3	2	2	3	3	2	3	3
CO4	3	2	3	2	3	2	2	2	3	3
CO5	3	3	3	2	3	3	3	2	2	3

"1" - Slight (Low) Correlation"2" - Moderate (Medium) Correlation"3" - Substantial (High) Correlation"-" indicates there is no correlation.

UNIT	CONTENT	HOURS	COs	COGNITIVE LEVEL
Ι	Studying Concepts of Programming Languages - Language Evaluation Criteria - Language design - Language Categories - Implementation Methods – Programming Environments - Overview of C: History of C- Importance of C- Basic Structure of C Programs- Executing a C Program- Constants, Variables and Data types - Operators and Expressions - Managing Input and Output Operations	15	CO1, CO2, CO3, CO4, CO5	K1, K2, K3, K4, K5
Π	Decision Making and Branching: Decision making with If, simple IF, IF ELSE, nested IF ELSE, ELSE IF ladder, switch, GOTO statement. Decision Making and Looping: While, Do-While, For, Jumps in loops.Arrays - Character Arrays and Strings	15	CO1, CO2, CO3, CO4, CO5	K1, K2, K3, K4, K5
III	User Defined Functions: Elements of User Defined Functions- Definition of Functions- Return Values and their Types- Function Call- Function Declaration- Categories of Functions- Nesting of Functions-Recursion	15	CO1, CO2, CO3, CO4, CO5	K1, K2, K3, K4, K5
IV	Structures and Unions: Introduction- Defining a Structure- Declaring Structure Variables Accessing Structure Members- Structure Initialization- Arrays of Structures- Arrays within Structures- Unions- Size of Structures	15	CO1, CO2, CO3, CO4, CO5	K1, K2, K3, K4, K5
V	Pointers: Understanding Pointers- Accessing the Address of a Variable- Declaring Pointer Variables- Initializing of Pointer Variables- Accessing a Variable through its Pointer- Chain of Pointers- Pointer Expressions- Pointer and Scale Factor- Pointer and Arrays- Pointers and Character Strings- Array of Pointers- Pointer as Function Arguments- Functions Returning Pointers- Pointers to Functions-Memory model-File Management in C	15	CO1, CO2, CO3, CO4, CO5	K1, K2, K3, K4, K5

VI	Self Study for Enrichment (Not included for End Semester Examinations) Algorithm- Flowchart- Develop algorithms for real time scenario- Simple expressions- Conversion programs- swapping numbers (with and without using temporary variable). Programs for checking eligibility-Triangle formation-Sum of series-Array manipulations (Sorting, searching, insert, delete and merging)-String handling programs- Dynamic memory management using pointers- Employee pay bill preparation, Student mark list using Files.	-	CO1, CO2, CO3, CO4, CO5	K1, K2, K3, K4, K5
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Textbooks

1.Robert W. Sebesta, (2012), —Concepts of Programming Languages||, Fourth Edition, Addison Wesley (Unit I : Chapter – 1)

1. E. Balaguruswamy, (2010), —Programming in ANSI Cl, Fifth Edition, Tata McGraw Hill Publications.

References

1.<u>Ashok N. Kamthane, Amit Ashok Kamthane (2015)</u>. Programming in C, 3rd Edition, Pearson India Education Services Pvt. Ltd.

2.Byron Gottfried, (2010), —Programming with Cl, Schaums Outline Series, Tata McGraw Hill Publications

Web References

- 1. https://www.learn-c.org/
- 2. https://www.cprogramming.com/
- 3. https://www.tutorialspoint.com/cprogramming/index.html
- 4. http://www.programiz.com/c-programming
- 5. http://www.programmingsimplified.com/c-program-examples

Pedagogy

Chalk and Talk, PPT, Discussion, Assignment, Demo, Quiz and Seminar.

Course Designer

1. Dr. M. Anandhi, Associate Professor, Department of Information Technology.

Semester I	Internal	External Mark: 60		
COURSE COURSE TITLE CODE		CATEGORY	Hrs/Week	CREDITS
23UIT1CC1P	C PROGRAMMING (P)	CORE COURSE- I (CP)	3	3

- The Course aims to provide exposure to problem-solving through C programming
- It aims to train the student to the basic concepts of the C -Programming language
- Apply different concepts of C language to solve the problem

Course Outcomes and Cognitive Level Mapping

CO Number	CO Statement	Cognitive Level
CO1	Demonstrate the understanding of syntax and semantics of C programs.	K1
CO2	Identify the problem and solve using C programming techniques.	K2
CO3	Identify suitable programming constructs for problem solving.	K3
CO4	Analyze various concepts of C language to solve the problem in an efficient way.	K4
CO5	Develop a C program for a given problem and test for its correctness.	К5

Mapping with Programme Outcomes

COs\ POs	PSO1	PSO2	PSO3	PSO4	PSO5	PO1	PO2	PO3	PO4	PO5
CO1	3	3	3	2	2	2	3	1	2	3
CO2	3	2	3	2	3	3	2	2	2	3
CO3	3	2	2	2	2	3	3	2	3	2
CO4	3	3	2	3	2	3	3	2	3	3
CO5	3	3	3	2	3	3	3	3	2	3

"1" - Slight (Low) Correlation

"2" – Moderate (Medium) Correlation "-" indicates there is no correlation.

"3" – Substantial (High) Correlation

- 1. Programs using Input/ Output functions
- 2. Programs on conditional structures
- 3. Command Line Arguments
- 4. Programs using Arrays
- 5. String Manipulations
- 6. Programs using Functions
- 7. Recursive Functions
- 8. Programs using Pointers
- 9. Files
- 10. Programs using Structures & Unions

Text Book

1. E. Balagurusamy, Programming in ANSI C, Fifth Edition, Tata McGraw-Hill, 2010.

Reference Books

1 Byron Gottfried, Schaum's Outline Programming with C, Fourth Edition, Tata McGraw-Hill, 2018.

2. Kernighan and Ritchie, The C Programming Language, Second Edition, Prentice Hall, 1998.

3. Yashavant Kanetkar, Let Us C, Eighteenth Edition, BPB Publications, 2021

Web References

- 1. https://www.tutorialspoint.com/cprogramming
- 2. https://www.javatpoint.com/c-programming-language-tutorial
- 3. https://www.w3schools.in/category/c-tutorial

Course Designer

Dr. M. Anandhi, Associate Professor, Department of Information Technology.

Semester I	Internal	Marks:25	External Marks:75		
COURSE	COURSE TITLE	CATEGORY	Hrs/Week	CREDITS	
CODE					
22UCS1AC1/	ESSENTIAL	ALLIED	4	3	
22UCA1AC1/	MATHEMATICS				
22UIT1AC1					

- Apply the basic concepts of Differentiation, Integration and their applications.
- **Compute** mathematical quantities using ordinary and partial differential equations.
- **Explore** fundamental concepts in graph theory.

Course Outcomes

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

СО	CO Statement	Cognitive
Number		Level
COl	Remember and recall the basic concept of essential mathematics.	Kl
CO2	Illustrate the various notions in the respective streams.	K2
CO3	Apply the different terminologies of essential mathematics.	K3
CO4	Classify the solution of mathematical problems using various techniques.	K4
CO5	Examine the solution of mathematical problems.	K4

Mapping of CO with PO and PSO

COs	PSOI	PSO 2	PSO 3	PSO 4	PSO5	PO1	PO 2	PO3	PO4	PO5
COl	3	2	3	3	3	3	3	3	2	3
CO2	3	3	3	3	3	3	3	3	3	2
CO3	3	2	3	3	3	3	3	3	2	2
CO4	3	2	2	3	3	3	3	3	3	2
CO5	3	2	3	3	3	3	3	3	2	2
CO5	3	2	3	3	3	3	3	3	2	2

"1" - Slight (Low) Correlation "2" - Moderate (Medium) Correlation

"3" - Substantial (High) Correlation "-" indicates there is no correlation

UNIT	CONTENT	HOURS	COS	COGNITIVE LEVEL
Ι	MatricesMatrix - Special types of matrices - Scalarmultiplication of a matrix - Equality of matrices -Addition of matrices - Subtraction - Multiplication ofMatrices - Inverse matrix- Relation between adjoint andinverse matrices - Solution of simultaneous equations -Rank of a matrix - A system of m homogeneous linearequations in n u:rikiiowns - System of non-homogeneouslinear equations - Eigen values and Eigenvectors -Similar matrices- Cayley-Hamilton Theorem (proof notneeded) - Simple applications only	12	CO1, CO2, CO3, CO4, CO5	Kl, K2, K3, K4
П	Differentiation Maxima and Minima (Problems Only) -Points of inflexion. Partial differentiation Functions of function rule - Total Differential Coefficient - A Special case - Implicit Fun,ctions - Homogeneous functions - Euler's Theorsm- (proof not needed) - Simple problems only.	12	CO1, CO2, CO3, CO4, CO5	K1, K2, K3, K4
III	Integration Integration of Rational algebraic_functions - Rule (a) - Rule (b): Type i:f th Type 11: $J \stackrel{!}{\underset{a:;:}{\overset{!}{ -1 - brlc}}} d \neq$ - Integration of Irrational functions : Case (ii) Integration of the form $J_{\underline{./}} \underline{P_{:r+:}}$ - Type $J \stackrel{a.r}{\underset{a+JJ \& OS:C}{\underline{C}}}$ - Properties of definite integrals.	12	CO1, CO2, CO3, CO4, CO5	Kl, K2, K3, K4
IV	Differential Equations Linear Differential Equation with constant coefficients - The Operators D and \mathcal{N}^{-1} - Particular Integral - Special methods of finding P.I.: Xis of the form (a) eox (b) cosax or sinax, where a is a constant (c) xm (a power of x), m being a positive integer (d) eax:V, where Vis any function of x.	12	CO1, CO2, CO3, CO4, CO5	K1, K2, K3, K4
V	Graph Theory Introduction - Definition of Graphs - Applications of Graphs - Finite and infinite graphs - Incidence and Degree - Isolated Vertex, Pendant Vertex and Null Graph.	12	CO1, CO2, CO3, CO4, CO5	Kl, K2, K3, K4

Pat Cir Co	ath and Circuits Isomorphism - Subgraphs - Walks, Paths and ircuits - Connected Graphs, Disconnected Graphs and omponents - Euler graphs.			
VI Her Co Ha	elf-Study for Enrichment Not included for End Semester Examination) Symmetric matrix - Skew symmetric matrix - ermitian and skew Hermitian matrices Concavity and onvexity- Integration by parts - Linear equation - amiltonian Paths and Circuits.	-	C01, C02, C03, C04, C05	Kl, K2, K3, K4

Textbooks

- 1. T.K.Manicavachagom Pillay, T.Natarajan, K.S.Ganapathy.(2015). Algebra, Volume
- 2. II. S. Viswanathan (Printers & Publishers) Pvt., Ltd.
- S.Narayanan, T.K.Manicavachagom *Pillay.*(2015).*Calculus,Volume I.* S. Viswanathan (Printers & Publishers) Pvt., Ltd.
- 4. S.Narayanan, T.K.Manicavachagom *Pillay.*(2015).*Calculus,Volume II.*S. Viswanathan (Printers & Publishers) Pvt., Ltd.
- S.Narayanan, T.K.Manicavachagom *Pillay.(2015).Calculus,Volume III.* S. Viswanathan (Printers & Publishers) Pvt., Ltd.
- Narsingh Deo. (2003). Graph Theory with applications to Engineering and Computer. Prentice Hall of India Private Limited
- UNIT-I Chapter 2: Section 1 to 5, 7, 8, 10 to 16[1]
- UNIT-II Chapter V: Section 1.1 to 1.5[2] Chapter VIII: Section 1.2 to 1.6[2]
- UNIT-III Chapter 1: Section 7.1 to 7.3, 8 (CASE II), 9, 11[3]
- UNIT-IV Chapter 2: Section 1 to 4[4]
- UNIT-V Chapter 1: Section 1.1 to 1.5[5] Chapter 2: Section 2.1, 2.2, 2.4 to 2.6[5]

Reference Books

- 1. A.Singaravelu. (2003). Allied Mathematics. AR.Publications
- 2. P.R. Vittal. (2014). Allied Mathematics. Margham Publications, Chennai.
- S.Arumugam and S.Ramachandran. (2006). *Invitation to Graph Theory*. Sci Tech Publications (India) Pvt Ltd., Chennai

Weblinks

- 1. <u>https://youtu.be/rowWM-MiiXU</u>
- 2. <u>https://youtu.be/fOyxWaOnrgl</u>
- 3. <u>https://youtu.be/pvLi1s7S0tk</u>
- 4. <u>https://youtu.be/Gxr3AT4NY</u> 0
- 5. <u>https://youtu.be/xlbbefbYLzg</u>
- 6. <u>https://voutu.be/bORJkIBhfEM</u>
- 7. https://youtu.be/s5KZw1EpBEo

Pedagogy

Assignment, Seminar, Lecture, Quiz, Group discussion, Brain storming, econtent.

Course Designers

- 1. Dr. V. Geetha
- 2. Dr. S. Sasikala

Semester I	Internal Mark	External Marks:75		
COURSE	COURSE TITLE CATEGORY Hrs / We		Hrs / Week	CREDITS
CODE				
22UCS1AC2/	NUMERICAL			
22UCA1AC2/	ANALYSIS AND	ALLIED	4	3
22UIT1AC2	STATISTICS			

- Understand the implementation of various methods of Numerical Analysis.
- **Organize** and **summarize** the statistical data.
- Analyze and evaluate the strengths of the conclusions based on data.

Course Outcomes

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

CO Number	CO Statement	Cognitive Level
CO1	Understand the list of basic ideas of Numerical Methods and Statistics.	K1, K2
CO2	Solve the problems using various methods and also classify the given datas.	K2, K3
CO3	Identify the conceptual collection and classification of variables.	K3
CO4	Analyze the accuracy and graphical representation of statistical datas.	K4
CO5	Support the implementation of numerical methods and statistical datas.	K4

Mapping of CO with PO and PSO

COs	PSO1	PSO2	PSO3	PSO4	PSO5	PO1	PO2	PO3	PO4	PO5
CO1	3	3	3	3	3	3	3	2	3	2
CO2	3	3	2	2	2	3	2	3	2	3
CO3	2	3	3	2	2	2	3	3	2	3
CO4	3	2	3	2	2	3	3	2	3	2
CO5	3	3	2	3	3	3	2	2	3	3

"1" – Slight (Low) Correlation ¬ "2" – Moderate (Medium) Correlation¬

"3" – Substantial (High) Correlation \neg "-" indicates there is no correlation.

UNIT	CONTENT	HOURS	COs	COGNITIVE LEVEL
Ι	Solution of Algebraic & Transcendental Equations: Introduction – The Bisection Method – The Iteration Method – Newton-Raphson Method (Problems Only) Interpolation: Finite Differences: Forward Differences, Backward Differences – Newton's Formulae for Interpolation – Interpolation with unevenly spaced Points: Lagrange's Interpolation formula	12	CO1, CO2, CO3, CO4, CO5	K1, K2, K3, K4
п	Numerical Integration:Numerical Integration:Simpson's 3/8-Rule (proof not needed).Linear Systems of Equations:Solution of Linear Systems–Direct Methods:GaussianElimination Method – Solutions of Linear Systems – IterativeMethods (Problems Only)	12	CO1, CO2, CO3, CO4, CO5	K1, K2, K3, K4
III	Numerical solution of Ordinary Differential Equations: Introduction – Euler's Method – Modified Euler's Method – Runge-Kutta Methods – Predictor - Corrector Methods : Adams-Moulton Method	12	CO1, CO2, CO3, CO4, CO5	K1, K2, K3, K4
IV	Measures of Central Tendency: Arithmetic Mean – Median – Mode – Geometric Mean – Harmonic Mean. Measures of Dispersion: Mean Deviation – Standard Deviation (Simple Problems Only)	12	CO1, CO2, CO3, CO4, CO5	K1, K2, K3, K4
V	Correlation: Introduction – Meaning of Correlation – Scatter Diagram – Karl Pearson's co-efficient of Correlation – Rank Correlation: Spearman's Rank Correlation Coefficient (Derivation not needed and Simple Problems Only). Linear Regression: Introduction – Linear Regression (Derivation not needed and Simple Problems Only)	12	CO1, CO2, CO3, CO4, CO5	K1, K2, K3, K4
VI	Self Study for Enrichment: (Not included for End Semester Examination) The method of False Position & Central Differences - Trapezoidal rule - Solution by Taylor's Series and Milne's Method - Range – Quartile Deviation - Rank Correlation (Repeated Ranks).	-	CO1, CO2, CO3, CO4, CO5	K1, K2, K3, K4

Text Books

Sastry S. S. (1998). Introductory methods of Numerical Analysis, Third Edition. Prentice
Hall of India Private Limited.

- Gupta. S.C & Kapoor, V.K (2007). Fundamentals of Mathematical Statistics. Sultan Chand & sons, New Delhi.
- UNIT I Chapter 2: Sections 2.1 2.3(Omit 2.3.1), 2.5(Omit 2.5.1) [1] Chapter 3: Sections 3.3 (Omit 3.3.4), 3.6, 3.9(3.9.1only) [1]
- UNIT II Chapter 5: Sections 5.4(5.4.2 & 5.4.3 only) [1] Chapter 6: Sections 6.3(6.3.2 only) & 6.4 [1]
- UNIT III Chapter 7: Sections 7.1, 7.4- 7.6 (Omit 7.4.1 & 7.6.2) [1]
- UNIT IV Chapter 2: Sections 2.5 2.9, 2.13 (Omit 2.13.1 & 2.13.2) [2]
- UNIT –V Chapter 10: Sections 10.1 10.4, 10.7(10.7.1 Only) [2] Chapter 11: Sections 11.1 & 11.2 [2]

Reference Books

- 1. Jain M. K, Iyengar S. R.K. and Jain R.K. (1999). Numerical Analysis Numerical Methods for Scientific and Engineering Computations. New Age International Private Limited.
- 2. Froberg C.E. (1979). Introduction to Numerical Analysis. II Edition. Addison Wesley

Web Links

- 1. <u>https://youtu.be/qCzUXav5Nk</u>
- 2. https://youtu.be/r6MTvrI8SQ4
- 3. https://youtu.be/s05dONL4xAs
- 4. https://youtu.be/XaHFNhHfXwQ
- 5. <u>https://youtu.be/zPG4NjIkCjc</u>

Pedagogy

Power point presentations, Group Discussions, Seminar, Quiz, Assignment.

Course Designers

- 1. Dr.R.Buvaneswari
- 2. Ms.A.Gowri Shankari