CAUVERY COLLEGE FOR WOMEN
(AUTONOMOUS)
NATIONALLY ACCREDITED (III CYCLE) WITH "A" GRADE BY NAAC
ISO 9001:2015 Certified
TIRUCHIRAPPALLI – 18
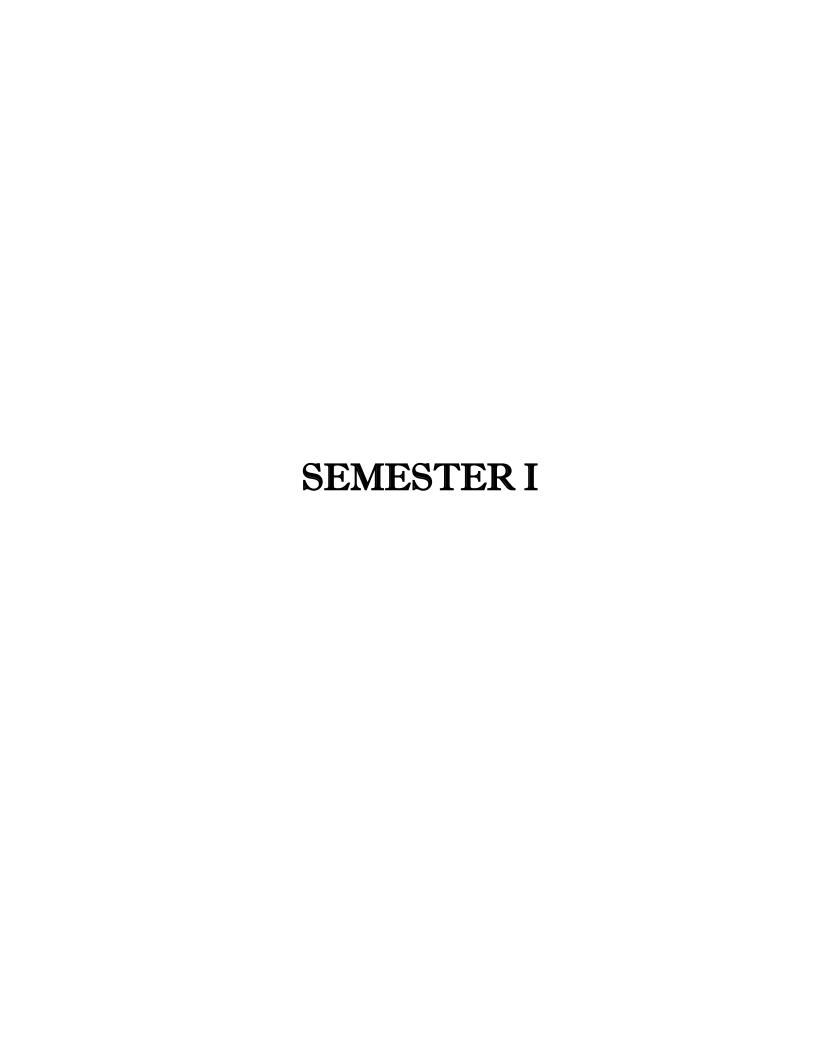
DEPARTMENT OF COMPUTER APPLICATIONS

Bachelor of ComputerApplications
2021-2022 onwards

SYLLABUS

I TO IV SEMESTERS

BACHELOR OF COMPUTER APPLICATIONS- PROGRAMME STRUCTURE
(For the Candidates admitted from the academic year 2021-2022 onwards)

Semester	Part	Course	Title	Course Code	Inst. Hours/ Week	Credit	Exam Hours	Marks Internal	Marks External	Total
1	I	Language Course-I (LC)-Tamil / Other Languages (Hindi/Sanskrit/French)	Ikkaalailakkiyam	19ULT1	6	3	3	25	75	100
			Story, Novel, Hindi Literature-I,& Grammar-I	19ULH1						
			History of Popular Tales, Literature and Sanskrit Story	19ULS1						
			Communication in French-I	19ULF1						
	II	English Language Course - I (ELC)	Functional Grammar for Effective Communication - I	19UE1	6	3	3	25	75	100
	III	Core Course - I (CC)	Programming with C	21UCA1CC1	6	6	3	25	75	100
		Core Practical - I (CP)	Practical I -Programming with C	21UCA1CC1P	3	2	3	40	60	100
		First Allied - I (AC)	Essential Mathematics	19UCA1AC1	4	4	3	25	75	100
		First Allied - II (AC)	Numerical Analysis and Statistics	19UCA1AC2	3	-	-	-	-	-
	IV	UGC Jeevan Kaushal Life Skills	Universal HumanValues	20UGVE	2	2	3	25	75	100
Total					**30**	**20**				**600**
2	I	Language Course-II (LC)-Tamil/Other Languages (Hindi/Sanskrit/French)	daikkaalaIlakkiyamumPuthinamum	19ULT2	6	3	3	25	75	100
			Prose, Drama, Hindi Literature-II,& Grammar-II	19ULH2						
			Poetry Textual Grammar and Alakara	19ULS2						
			Communication in French-II	19ULF2						
	II	English Language Course - II (ELC)	Functional Grammar for Effective Communication – II	19UE2	6	3	3	25	75	100
	III	Core Course - II (CC)	Data Structures	19UCA2CC2	6	6	3	25	75	100
		Core Practical - II (CP)	Practical II -Data Structures Using C	19UCA2CC2P	3	2	3	40	60	100
		First Allied - II (AC)	Numerical Analysis and Statistics	19UCA1AC2	3	3	3	25	75	100
		First Allied - III (AC)	Operations Research	19UCA2AC3	4	2	3	25	75	100
	IV	Environmental Studies	Environmental Studies	21UGES	2	2	3	25	75	100
	V	Extra Credit Course	Swayam Online Course	To be Fixed Later	As per UGC Recommendation					
Total					**30**	**21**				**700**

Semester	Part	Course	Title	Course Code	Inst. Hours/Week	Credit	Exam Hours	Internal	External	Total
3	I	Language Course - III (LC)-Tamil / Other Languages (Hindi/Sanskrit/French)	KaappiyamumNaadakamum	19ULT3	6	3	3	25	75	100
			Medieval, Modern Poetry & History of Hindi Literature-3	19ULH3						
			Prose, Textual ,Grammar and Vakyarachana	19ULS3						
			Communication in French-III	19ULF3						
	II	English Language Course - III(ELC)	Reading and Writing for Effective Communication-I	19UE3	6	3	3	25	75	100
	III	Core Course - III (CC)	Database Management Systems	19UCA3CC3	6	6	3	25	75	100
		Core Practical - III (CP)	Practical III – DBMS	19UCA3CC3P	3	2	3	40	60	100
		Second Allied - I (AC)	Financial Accounting	19UCA3AC4	4	4	3	25	75	100
		Second Allied - II (AP)	Computer Applications in Business	19UCA3AC1P	3	2	3	40	60	100
	IV	Non-Major Elective – I	Principles of Internet	19UCA3NME1	2	2	3	25	75	100
			Basic Tamil I	19ULC3BT1						
			Special Tamil I	19ULC3ST1						
	V	Extra Credit Course	Swayam Online Course	To be Fixed Later	As per UGC Recommendation					
		Total			**30**	**22**				**700**
4	I	Language Course-IV (LC)-Tamil /Other Languages ((Hindi/Sanskrit/French)	PandaiyaIlakkiyam	19ULT4	6	3	3	25	75	100
			Letter writing, General Essays, Technical Terms, Proverbs, Idioms &Pharses, Hindi Literature-4	19ULH4						
			Drama, History of Drama Literature	19ULS4						
			Communication in French-IV	19ULF4						
	II	English Language Course - IV(ELC)	Reading and Writing for Effective Communication-II	19UE4	6	3	3	25	75	100
	III	Core Course - IV (CC)	Programming with Java	19UCA4CC4	6	6	3	25	75	100
		Core Practical - IV (CP)	Practical IV -Programming with Java	19UCA4CC4P	3	2	3	40	60	100
		Second Allied - III (AC)	Organizational Behaviour	19UCA4AC5	5	3	3	25	75	100
	IV	Non-Major Elective – II	HTML Practicals	19UCA4NME2P	2	2	3	40	60	100
			Basic Tamil II	19ULC4BT2				25	75	
			Special Tamil II	19ULC4ST2						
		Skill Based Elective – I	Animation Practicals	19UCA4SBE1AP	2	2	3	40	60	100
			HTML5 Practicals	19UCA4SBE1BP						
	V	Extra Credit Course	Swayam Online Course	To be Fixed Later	As per UGC Recommendation					
		Total			**30**	**21**				**700**

SEMESTER I

CORE COURSE – I (CC)

PROGRAMMING WITH C

Semester: I

Course Code	Course Title	Category	Learning Hours	Theory Hours/ Week	Practical Hours/ Week	Credit
21UCA1CC1	Programming with C	Core	90	6	-	6

PREAMBLE

- To understand the concepts of C and to develop the programming skill in C programming

COURSE OUTCOME:

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

CO NUMBER	CO STATEMENT	KNOWLEDGE LEVEL
CO1	Explain the program structure, programming rules, C tokens and syntax.	K2
CO2	Apply decision making and looping statements in C Program.	K3
CO3	Utilize the concept of arrays and functions.	K3
CO4	Identify the role of structure, union and pointers.	K3
CO5	Make use of the file operations.	K3

MAPPING WITH PROGRAMME SPECIFIC OUTCOMES:

	PSO1	PSO2	PSO3	PSO4
CO1	S	S	M	M
CO2	S	S	M	M
CO3	S	S	S	S
CO4	S	S	S	S
CO5	S	S	S	S

S – Strong; M – Medium; L – Low

SYLLABUS

UNIT I: BASIC CONCEPTS (18 HOURS)

Overview of C: Constants, Variables, and Data Types: Introduction - Identifiers – Constants – Variables - Data Types – Declaration of Variables –Assigning Values to Variables-Defining Symbolic Constant. **Operators and Expressions:** Arithmetic, Relational, Logical, Assignment, Conditional, Bit Wise, Special, Increment and Decrement Operators - Arithmetic Expressions - Evaluation of Expressions–Precedence of Arithmetic Operators - Operator Precedence & Associativity.

UNIT II: INPUT AND OUTPUT OPERATIONS AND BRANCHING (18 HOURS)

Managing Input and Output Operations: Reading and Writing a Character -Formatted Input and Output**. Decision Making and Branching:** Decision Making with If Statement, Simple If Statement, If… Else Statement, Nested If… Else Statement, The Else if Ladder, Switch, The ?: operator – The GoTo Instruction.

UNIT III: LOOPING AND ARRAYS (18 HOURS)

Decision Making and Looping: Introduction – While, Do, For Statements –Jumps in Loops. **Arrays:** One-Dimensional - Two Dimensional - Multidimensional Arrays. **Character Arrays and Strings:** Declaring and Initializing String Variables - Reading Strings from Terminal - Writing Strings to Screen - String-Handling Functions.

UNIT IV: FUNCTIONS AND STRUCTURES (18 HOURS)

User-Defined Functions: Need for User -Defined Functions –A Multi-Function Program- Elements of User-Defined Functions-Definition of Functions –Return values and Their Types-Function Calls- Function Declaration Category of Functions –Nesting of Functions - Recursion - Storage Class-The Scope and Lifetime of Variables in Functions. **Structure and Unions:** Defining a Structure –Declaring Structure Variables - Accessing Structure Members- Initialization - Comparison of Structure Variables- Unions.

UNIT V: POINTERS AND FILES (18 HOURS)

Pointers: Understanding pointers - Accessing the Address of a Variable - Declaring and Initializing Pointers - Accessing a Variable Through its Pointers – Chain of Pointers -Pointer Expressions. **File Management in C:** Defining and Opening a File –Closing a file - I/O Operations on Files.

TEXT:

E. Balagurusamy, "Programming in ANSI C", TMH Publishing Pvt., Ltd., 7th Edition, 2017.

REFERENCES:

1. YashavantKanetkar, "Let Us C", BPB Publications, New Delhi, 16thEdition, 2020.
2. Byron S. Gottfried, "Programming with C", McGraw HillEducation, 2nd Edition, 2008.

WEB REFERENCES:

1. www.learn-c.org
2. www.cprogramming.com
3. www.zentut.com/c-tutorial

COURSE DESIGNER

Dr. R. Brendha, Associate Professor, Department of Computer Applications.

CORE PRACTICAL – I (CP)

PRACTICAL I -PROGRAMMING WITH C

Semester: I

Course Code	Course Title	Category	Learning Hours	Theory Hours/ Week	Practical Hours/ Week	Credit
21UCA1CC1P	Practical I - Programming with C	Core	45	-	3	2

PREAMBLE:

- To recognize the knowledge on basic concepts of C Programming

COURSE OUTCOME:

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

CO NUMBER	CO STATEMENT	KNOWLEDGE LEVEL
CO1	Relate looping structure with arrays.	K1
CO2	Demonstrate the concept of basic C operators and functions.	K2
CO3	Utilize the concepts of structures, union, pointers and file.	K3

MAPPING WITH PROGRAMME SPECIFIC OUTCOMES:

	PSO1	PSO2	PSO3	PSO4
CO1	M	M	M	M
CO2	M	M	M	M
CO3	S	S	S	M

S – Strong; M – Medium; L - Low

LIST OF PRACTICALS

1. **Formulae Conversion**
   1.1 Simple Interest
   1.2 Fahrenheit to Celsius
   1.3 Days into Years and Weeks

2. **Selection Structure**
   2.1. Simple If
   2.2. If-else
   2.3. Else-if Ladder
   2.4. Ternary Operator
   2.5. Switch

3. **Iterative Structure**
   3.1. For
   3.2. While
   3.3. Do – While

4. **Arrays**
   4.1. One-Dimensional Array
   4.2. Two-Dimensional Array

5. **Functions**
   5.1. With Recursion
   5.2. Without Recursion
   5.3. String Functions
6. **Structures**
7. **Unions**
8. **Pointers**
9. **File**

COURSE DESIGNER

Dr. R. Brendha, Associate Professor, Department of Computer Applications.

ALLIED I -ESSENTIAL MATHEMATICS

SEMESTER - I

Course Code	Course Title	Category	Learning Hours	Theory Hours/ Week	Practical Hours/ Week	Credit
19UCA1AC1	Essential Mathematics	Allied	60	4	-	4

PREAMBLE
- To equip the students with mathematical methods formatted for their major concepts and train them in basic Differentiations and Integrations.

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

CO Number	CO Statement	Knowledge Level
CO1	State the basic concepts of graph theory	K1
CO2	Explain the concepts of Matrices and its types	K2
CO3	Compute characteristic equation of a matrix and its inverse by Cayley Hamilton theorem	K3
CO4	Apply Differentiation to find the solutions of Ordinary and Partial Differentiation	K3
CO5	Classify the various types of integrals	K3
CO6	Solve different types of ordinary differential equation	K3
CO7	Classify the characteristics of graph theory	K3

COURSE OUTCOME MAPPED WITH PROGRAMME OUTCOME

	PO1	PO2	PO3	PO4
CO1	S	S	S	S
CO2	S	S	S	M
CO3	S	S	S	S
CO4	S	M	M	M
CO5	S	S	S	M
CO6	S	S	M	M
CO7	S	S	S	S

S – Strong; M – Medium; L – Low

SYLLABUS

UNIT I : (**12 hours**)

Matrices : Singular matrices – Inverse of a non-singular matrix using adjoint method - Rank of a Matrix – Consistency - Characteristic equation, Eigen values, Eigen vectors – Cayley Hamilton"s Theorem (proof not needed) –Simple applications only

UNIT II : (**12 hours**)

Differentiation: Maxima & Minima – Concavity, Convexity – Points of inflexion - Partial differentiation – Euler"s Theorem - Total differential coefficients (proof not needed) –Simple problems only.

UNIT III : (**12 hours**)

Integration: Evaluation of integrals of types

$$(1). \int \frac{px+q}{ax^2+} \, dx \quad (2). \frac{px+q}{\sqrt{ax^2+bx+c}} \, dx \quad (3). \int \frac{dx}{a+b\sin x} \quad (4). \int \frac{dx}{a+b\cos x}$$

Evaluation using Integration by parts – Properties of definite integrals.

UNIT IV: (**12 hours**)

Differential Equations: Variables Separables – Linear equations – Second order of types (a D^2 + b D + c) y = F (x) where a,b,c are constants and F (x) is one of the following types (i) e^{kx}(ii) sin (kx)and cos (kx) (iii) x^n , n being an integer (iv) e^{kx}f (x)

UNIT V: (**12 hours**)

Graph Theory: Basic concepts- Finite and infinite graphs-Incidence and degree ideas on vertices –Isomorphism, Sub graphs, Walks – Paths and Circuits – Euler graphs.

TEXT BOOKS:

1. T.K. Manickavasagam Pillai and others, "Algebra, Volume II", S. ViswanathanPvtLimited, 1985.
2. S. Narayanan, T.K. ManickavasagamPillai, "Calculus, Volume I", S. ViswanathanPvtLimited, 2003.
3. S. Narayanan, T.K. ManickavasagamPillai, "Calculus, Volume II", S. ViswanathanPvtLimited, 2003.
4. S. Narayanan, T.K. ManickavasagamPillai, "Calculus, Volume III", S. ViswanathanPvtLimited, 2003.
5. Narsingh Deo, "Graph Theory", Hall of India Pvt Ltd, 1997.

REFERENCE BOOKS:

1. A.Singaravelu, "Allied Mathematics", A.R.Publications, 2003.
2. P.R.Vittal, "Allied Mathematics", MarghamPublications, Chennai, 2014.
3. S.Arumugam and S.Ramachandran, "Invitation to Graph Theory", SciTechPublications(India)PvtLtd.,Chennai, 2006.

COURSE DESIGNER:

Dr.V.Geetha and Dr.S.Sasikala - Department of Mathematics

ALLIED II- NUMERICAL ANALYSIS AND STATISTICS

SEMESTER - I

CourseCode	Course Title	Category	Learning Hours	Theory Hours/ Week	Practical Hours/ Week	Credit
19UCA1AC2	Numerical Analysis And Statistics	Allied	90	3	-	-

PREAMBLE

• To train the students in numerical and statistical problems

COURSE OUTCOME

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

CONumber	CO Statement	KnowledgeLevel
CO1	Explain the concept of measures of centraltendency and dispersion	K2
CO2	Apply numerical methods to solve Algebraic,Transcendental equations and Interpolation	K3
CO3	Compute the numerical solution of ordinarydifferential equation by various method	K3
CO4	Solve numerical integration and system of linearequation by appropriate methods.	K3
CO5	Explain correlation and regression and solve thenumerical problems.	K3

COURSE OUTCOME MAPPED WITH PROGRAMME OUTCOME

	PO1	PO2	PO3	PO4
CO1	S	S	S	S
CO2	S	S	S	M
CO3	S	S	S	M
CO4	S	S	S	M
CO5	S	S	S	S

S – Strong; M – Medium; L – Low

SYLLABUS

UNIT I   **(18 Hours)**

Solution of Algebraic & Transcendental equations: Introduction - Bisection Method, Method of False Position, Iteration method, Newton Raphson Method (Problems Only)
Interpolation: Finite differences –Forward, Backward and Central differences – Newton's formulae for interpolation - Lagrange's interpolation formula.

UNIT II   **(18 Hours)**

Numerical differentiation & Integration: Numerical Integration using Trapezoidal rule and Simpson's($\frac{1}{3}$ and $\frac{3}{8}$) rules (proof not needed)
Numerical Linear Algebra: Solutions to Linear Systems –Gauss Elimination and Gauss Jordon method –Iterative methods (Problems Only)

UNIT III   **(18 Hours)**

Numerical solution of Ordinary Differential Equations : Introduction - Solution by Taylor Series Method ,Picard's method of successive approximations, Euler's Method, Modified Euler's Method - Runge - Kutta method- Predictor Corrector Method -Adams –Moulton method and Milne's Method.

UNIT IV   **(18 Hours)**

Measures of Central Tendency: Arithmetic Mean – Median - Mode - Geometric Mean – Harmonic Mean.
Measures of Dispersion: Range- Quartile Deviation - Mean Deviation, Standard Deviation.

UNIT V   **(18 Hours)**

Correlation: Introduction - Meaning of Correlation – Scattered Diagram – Karl Pearson's co-efficientCorrelation – Rank Correlation
Linear Regression: Introduction – Linear Regression –Regression Coefficients and its equations(Problems Only)
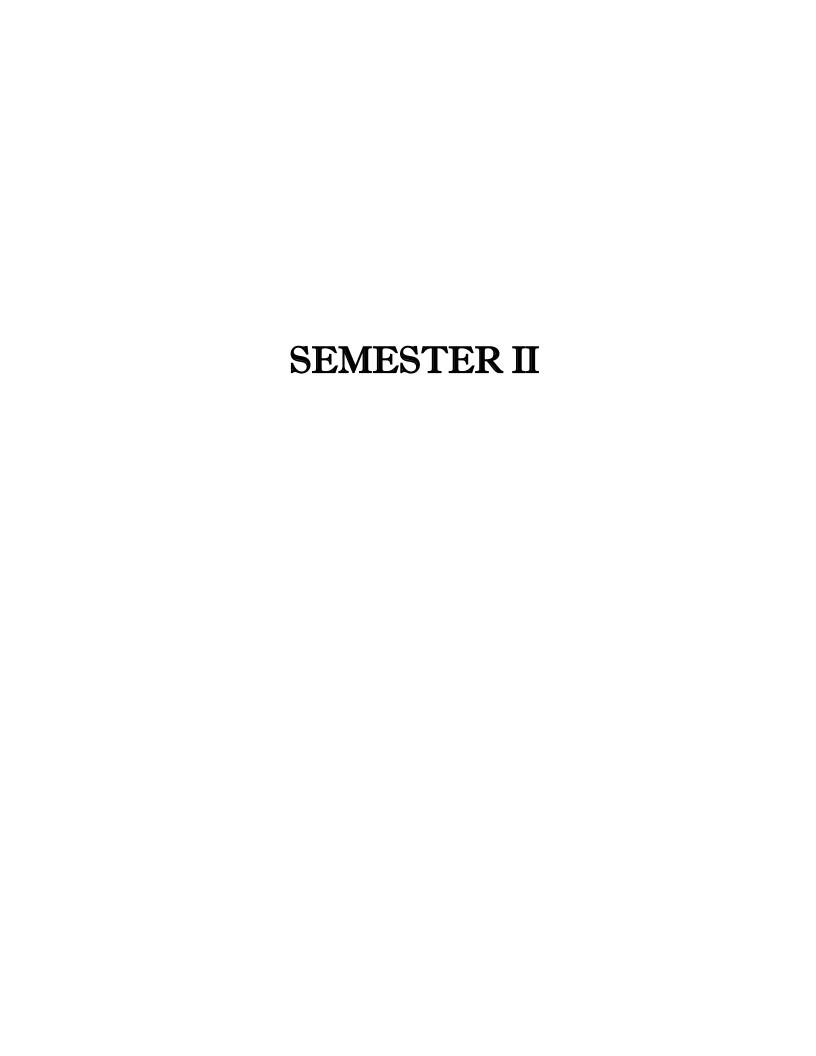
TEXT BOOKS:

1. S.S.Sastry, "Introductory methods of Numerical Analysis" , fifth Edition, PHI Learningprivate limited, 2013.
2. Gupta.S.C&Kapoor, V.K, "Fundamentals of Mathematical Statistics", Sultan Chand& sons, New Delhi, 1994.

REFERENCE BOOKS:

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

COURSE DESIGNER:

Dr.V.Geetha and Dr.S.Sasikala - Department of Mathematics

SEMESTER II

<div align="center">

CORE COURSE – II (CC)

DATA STRUCTURES

</div>

<div align="right">

SEMESTER -II

</div>

Course Code	Course Title	Category	Learning Hours	Theory Hours/ Week	Practical Hours/ Week	Credit
19UCA2CC2	Data Structures	Core	90	6	-	6

PREAMBLE

- To understand the concepts of data structures

COURSE OUTCOMES (CO)

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

CO NUMBER	CO STATEMENT	KNOWLEDGE LEVEL
CO1	Explain basics of data structures.	K1
CO2	State the operations of various data structures.	K1
CO3	Make use of the stack, queue and linked lists.	K2
CO4	Apply traversal concept on trees and graphs.	K3
CO5	Utilize arrays in sorting and searching.	K3

MAPPING WITH PROGRAMME OUTCOMES

	PSO1	PSO2	PSO3	PSO4
CO1	S	S	M	M
CO2	S	S	S	M
CO3	S	S	S	L
CO4	S	S	S	L
CO5	S	S	S	M

S – Strong; M – Medium; L – Low

SYLLABUS

UNIT I : BASIC TERMINOLOGY   **(20 HOURS)**
Introduction and Overview: Introduction- Basic Terminology- Data Structures- Data StructureOperations.
Arrays: Linear Arrays – Representation of Linear Arrays in Memory – Traversing Linear Arrays- Inserting
& Deleting – Multi Dimensional Arrays.

UNIT II: LINKED LISTS   **(15 HOURS)**
Linked Lists: Linked Lists – Representation of Linked List in Memory – Traversing a Linked list- Searching
a Linked List- Memory allocation; Garbage Collection-Insertion into a Linked List – Deletion from a Linked
List.

UNIT III: STACKS and QUEUES   **(20 HOURS)**
Stacks and Queues: Introduction – Stacks – Array Representation of Stacks – Linked Representation of Stacks
– Arithmetic Expression; Polish Notation-Application of Stacks-Recursion. Queues – Linked Representation
of Queues-Queue as ADT- Deques.

UNIT IV: TREES   **(15 HOURS)**
Trees: Introduction – Binary Trees – Representing Binary Trees in Memory – Traversing Binary Trees –
Traversal Algorithms using Stacks-Binary Search Trees-Balanced Binary Trees-Applications of Trees.

UNIT V: GRAPHS   **(20 HOURS)**
Graphs and their applications: Introduction – Graph Theory Terminology – Sequential Representation of
Graphs – Linked representation of a Graph- Operations on Graphs – Traversing a Graph. Sorting and Searching
– Bubble Sort-Insertion Sort. Searching - Linear Search – Binary Search.

TEXTBOOK

   Seymour Lipschutz, "**Data Structures with C**", McGraw Hill Education, 2011

REFERENCES

   1. Ellis Horowitz, Sartaj Sahni, "**Fundamentals of Data Structures**", Galgotia Publications, 2008.
   2. Anany Levitin,"**Introduction to the Design and Analysis of Algorithms**", Pearson Education,
      2nd edition,2011.
   3. Ashok N.Kamthane, "**Introduction to Data Structure in C**" Pearson Education, 2011(Singapore)
   4. www.studytonight.com/data-structures

COURSE DESIGNER

   Ms.H.Krishnaveni , Associate Professor, Department of Computer Applications

CORE PRACTICAL – II (CP)
PRACTICAL II -DATA STRUCTURES USING C

SEMESTER-II

Course Code	Course Title	Category	Learning Hours	Theory Hours/ Week	Practical Hours/ Week	Credit
19UCA2CC2P	Practical II - Data Structures Using C	Core	45	-	3	2

PREAMBLE
- To impart practical training on data structures using C

COURSE OUTCOMES (CO)
- On successful completion of the course, students will be able to

CO NUMBER	CO STATEMENT	KNOWLEDGE LEVEL
CO1	Recall operations of various data structures using C programming.	K1
CO2	Describe sorting and searching techniques using array.	K2
CO3	Apply the concepts of traversal on trees and graphs.	K3

MAPPING WITH PROGRAMME OUTCOMES

	PSO1	PSO2	PSO3	PSO4
CO1	M	M	M	M
CO2	S	S	S	L
CO3	S	S	S	M

S – Strong; M – Medium; L - Low

LIST OF PRACTICALS

1. Matrix representation and manipulation

2. Sorting algorithms

3. Searching algorithms

4. Stack representation and manipulation

5. Queue representation and manipulation

6. Linked list representation and manipulation

7. Binary tree traversal

8. Graph traversal

COURSE DESIGNER
Ms. H. Krishnaveni, Associate Professor, Department of Computer Applications

ALLIED COURSE – III (AC)

OPERATIONS   RESEARCH

Course Code	Course Title	Category	Learning Hours	Theory Hours/ Week	Practical Hours/ Week	Credit
19UCA2AC3	Operations Research	Allied	60	4	-	3

PREAMBLE

- To inculcate the basic concepts of Operations Research
- To practice the students for solving Operation Research Problems

COURSE OUTCOME

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

CO Number	CO Statement	Knowledge Level
CO1	Explain the applications of Operations research.	K2
CO2	Solve Linear Programming Problem by graphical method	K3
CO3	Classify the different types of Simplex methods	K3
CO4	Describe the concepts of Transportation Problem and Assignment Problem and compute the solution by various methods	K3
CO5	Compute PERT and CPM in Network Analysis	K3
CO6	Determine the solution of Sequencing Problem	K4

COURSE OUTCOME MAPPED WITH PROGRAMME OUTCOME

	PSO1	PSO2	PSO3	PSO4
CO1	S	S	S	M
CO2	S	S	S	S
CO3	S	M	S	M
CO4	S	S	S	S
CO5	S	S	S	S
CO6	S	S	S	S

S – Strong; M – Medium; L - Low

SYLLABUS

UNIT I   **(12 Hours)**
Operations Research: Introduction - Basics of OR – OR & decision making –Role of Computers in OR. Linear Programming Problem: Linear programming formulations & graphical solution of two variables - Canonical & standard forms of LPP.

UNIT II   **(12 Hours)**
Linear Programming Problem: Introduction - Simplex Method for $<, =, >$ constraints – Two phase Simplex method – Big M Method.

UNIT III   **(12 Hours)**
Transportation problem: Introduction - Transportation algorithm – Degeneracy   algorithm   – Degeneracy   in Transportation Problem, Unbalanced transportation problem.
Assignment Problem: Introduction - Assignment algorithm –Unbalanced Assignment problem- The Travelling Salesman Problem.

UNIT IV   **(12 Hours)**
Sequencing problem: Introduction - Processing of n jobs through two machines – Processing of n jobs through k machines – processing of two jobs through k machines.

UNIT V   (12 Hours)
Network Scheduling by PERT/CPM: Introduction - Network – Fulkerson‟s rule - measure of activity –PERT computation– CPM computation
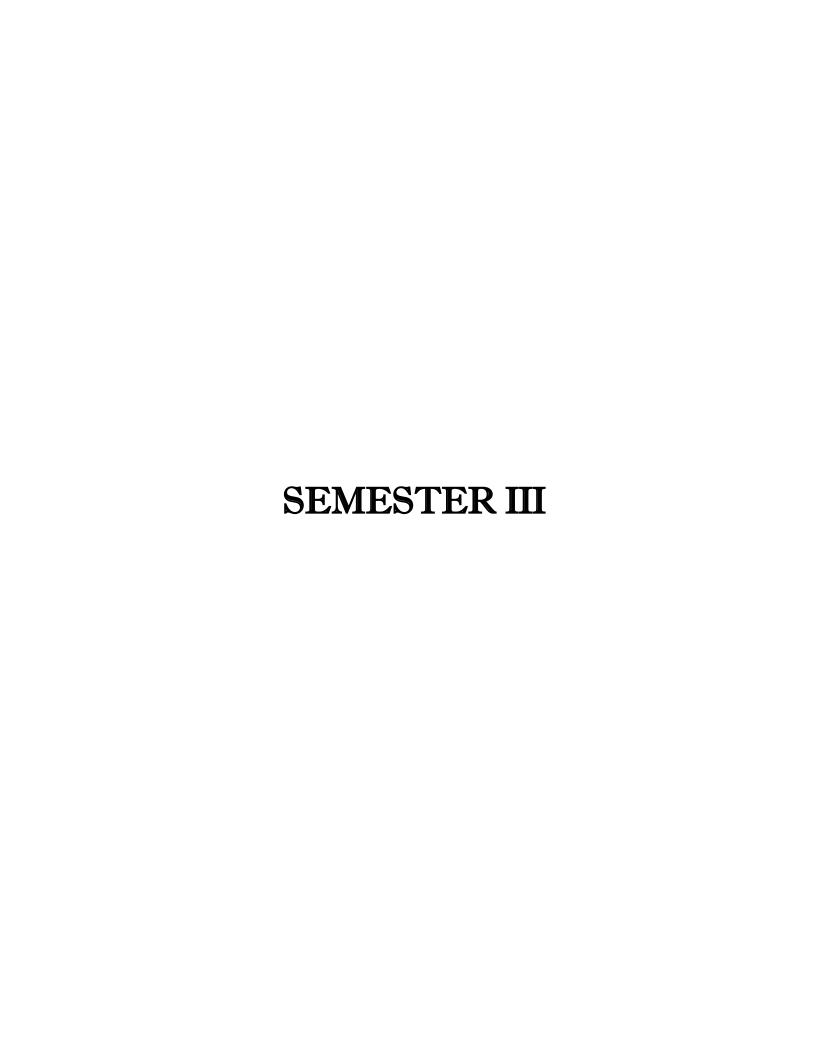
TEXT BOOK:

  1. Kantiswarup P.K.Gupta & Man Mohan, "Operations Research", Sultan Chand Publishers, New Delhi,2008.

REFERENCE BOOKS:

  1. Prem Kumar Gupta and D.S. Hira, Operations Research: An Introduction, S. Chand and Co., Ltd, New Delhi, 1983.
  2. Hamdy A. Taha, "Operations Research", McMillan Publishing Company, New Delhi, 1982.

COURSE DESIGNER:

  Dr.V.Geetha and Dr.S.Sasikala,Department of Mathematics

SEMESTER III

CORE COURSE-III (CC)
DATABASE MANAGEMENT SYSTEMS

SEMESTER - III

Course Code	Course Title	Category	Learning Hours	Theory Hours/ Week	Practical Hours/ Week	Credit
19UCA3CC3	Database Management Systems	Core	90	6	-	6

PREAMBLE:

- To understand the basic concepts of the database systems
- To learn the features of relational model and ER model
- To develop SQL queries for a database
- To apply the basic normalization techniques

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

CO NUMBER	CO STATEMENT	KNOWLEDGE LEVEL
CO1	Explain the basic concepts of database design, architecture and its model	K2
CO2	Illustrate structure of relational database	K2
CO3	Apply the various SQL queries in the database	K3
CO4	Implement the concepts of ER model and its diagram	K3
CO5	Relate the concept of transaction management in a database environment	K3

MAPPING WITH PROGRAMME SPECIFIC OUTCOMES (PSO):

	PSO1	PSO2	PSO3	PSO4
CO1	M	M	M	M
CO2	M	M	S	M
CO3	S	M	M	S
CO4	S	M	M	M
CO5	S	S	S	L

S – Strong; M – Medium; L - Low

SYLLABUS

UNIT I: INTRODUCTION   (18 HOURS)

Introduction to DBMS: Applications of DBMS - Purpose of DBMS - View of Data- Database Languages - Relational Databases - Database Design - Data Storage & Querying- Transaction Management - Database Architecture - Database Users and Administrators.

UNIT II: RELATION MODEL   (18 HOURS)

Introduction to Relation Model: Structure of Relational Databases - Database Schema – Keys - Schema diagrams - Relational Query Languages: Relational Operators - Relational Algebra.

UNIT III: STRUCTURED QUERY LANGUAGE   (18 HOURS)

Introduction to SQL: SQL Data Definition - Basic Structure of SQL Queries - Additional basic Operations - Set Operations - NULL Values - Aggregate Functions - Nested Sub Queries – Modification of Database.
Intermediate SQL: Join Expressions – Views – Transactions - Integrity Constraints - SQL data types and Schemas - Authorization.

UNIT IV: ER MODEL & FUNCTIONAL DEPENDENCY   (18 HOURS)

Database design and ER-Model: Overview of design process - ER Model – Constraints - ER Diagram - Reduction to Relational Schemas - ER design issues - **Relational Database Design**: Features of Good Relational Design - Atomic Domains and First Normal Form - Decomposition using Functional Dependencies - Functional Dependency Theory - Algorithms for Decomposition.

UNIT V: TRANSACTION MANAGEMENT   (18 HOURS)

Transaction Management: Transaction Concepts - Storage Structure - Transaction Atomicity and Durability - Transaction Isolation - Serializability.

TEXT:

1. Abraham Sliberschatz, Henry F. Korth& S. Sudarshan,"Database System Concepts", 6th edition, McGraw Hill Education (India) Private Limited, 2013

REFERENCES:

1. "An Introduction to Database" – C.J. Date, A. Kannan& S. Swamynathan, Pearson Education,India, 2009
2. "Essentials of Database Management Systems" - Alexis Leon, Mathews Leon, McGraw HillEducation India Pvt Ltd., Revised Edition 2009.
3. "Database System Concepts", Peter Rob, Carlos Coronel, Lengage Learning, 2008

WEB REFERENCES:

1. https://beginnersbook.com/2015/04/dbms-tutorial/
2. https://www.studytonight.com/dbms/
3. https://www.tutorialspoint.com/dbms/
4. https://www.w3schools.in/dbms/

COURSE DESIGNER

Ms .Lakshna Arun- Assistant Professor, Department of Computer Applications

SEMESTER - III

Course Code	Course Title	Category	Learning Hours	Theory Hours/ Week	Practical Hours/ Week	Credit
19UCA3CC3P	Practical III –DBMS	Core	45	-	3	2

OBJECTIVE

- To provide in depth programming knowledge in MYSQL

COURSE OUTCOMES

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

CO NUMBER	CO STATEMENT	KNOWLEDGE LEVEL
CO1	Recall DDL and DML Commands	K1
CO2	Apply Arithmetic, Logical and Set operators	K3
CO3	Implement string operations	K3
CO4	Use Aggregate Functions in SQL Queries	K3
CO5	Create Nested Subqueries	K5

MAPPING WITH PROGRAMME SPECIFIC OUTCOMES (PSO):

	PSO1	PSO2	PSO3	PSO4
CO1	M	S	M	M
CO2	S	M	S	M
CO3	S	M	S	S
CO4	S	L	M	M

S – Strong; M – Medium; L - Low

LIST OF PRACTICALS

1. Create a table and perform the following DDL operations
   a) Set the primary key
   b) Alter the structure of the table
   c) Drop the table

2. Create a table and perform the following DML operations
   a) Insert values
   b) Update values and Delete records based on constraints
   c) Display values using various forms of select clause

3. Perform Arithmetic, Logical and Set operations
   a) Arithmetic Operators
   b) AND, OR,NOT Operators
   c) UNION, INTERSECTION, MINUS

4. Implement Nested Sub queries
   a) Set membership (in, not in)
   b) Set comparison (some, all)
   c) Empty relation (exists, not exists)
   d) Check for existence of Duplicate tuples (unique, not unique)

5. Develop MySQL Queries to implement Aggregate Functions.

6. Implement Grouping and Ordering Commands in a Table.

7. Develop MySQL Queries for View Operations.

8. Develop MYSQL queries to implement String operations using % and "_"

[Note: create necessary tables for the above questions (1 to 8) with required attributes]

9. Consider the following relations for a Banking enterprise database

   BRANCH(branch-name:string, branch-city:string, assets:real)
   ACCOUNT(accno:int, branch-name:string, balance:real)
   DEPOSITOR(customer-name:string, accno:int)
   CUSTOMER(customer-name: string, customer-street: string, customer-city:string)

   Perform the following operations:

   a) Create the above relations by properly specifying the primary keys
      and theForeign keys

b) Enter at least five tuples for each relation

c) Find all the customers who have at least two accounts at the main branch

d) Find all the customers who have an account at *all* the branches located in aspecific city.

e) Generate suitable reports

COURSE DESIGNER

Ms.Lakshna Arun- Assistant Professor, Department of Computer Applications

ALLIED COURSE – II
FINANCIAL ACCOUNTING

Course Code	Course Title	Category	Learning Hours	Theory Hours/Week	Practical Hours/Week	Credit
19UCA3AC4	Financial Accounting	Allied	45	4	-	4

COURSE OBJECTIVE

- To equip the students with fundamental knowledge and acquire analytical skills on the accounting concepts.

COURSE OUTCOME

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

CO NUMBER	CO STATEMENT	KNOWLEDGE LEVEL
CO 1	Define the basic concepts of Accounting	K1
CO2	Explain the accounting rules required for business enterprise	K2
CO3	Develop the skills in preparation of financial reports	K3
CO4	Analyze various methods of depreciation	K4

MAPPING WITH PROGRAMME OUTCOMES

COs	PO1	PO2	PO3	PO4	PO5
CO1	M	S	S	S	M
CO2	S	S	S	S	M
CO3	S	S	S	S	S
CO4	S	S	S	S	S

S – Strong; M – Medium; L - Low

SYLLABUS

UNIT – I   INTRODUCTION   (12 HOURS)

Accounting Meaning – Need for Accounting – Users of Accounting Information – Meaning of Book Keeping – Accounting Principles – Accounting Cycle – Phases of Accounting – Accounting Equation. Double Entry: Meaning – Nature and Principle of Double Entry. Journal: Meaning and Need – Steps in Journalizing – Exercises of Journal Entry. Subsidiary Books: Meaning – Classification and Advantages.

UNIT – II LEDGER & TRIAL BALANCE   (12 HOURS)

Ledger: Meaning and Difference between Journal and Ledger – Steps in Posting – Problems on Journal, Ledger and Trial Balance. Trial Balance: Meaning and Objective of Preparing Trial Balance – Comprehensive Problems on Journal, Ledger and Trial Balance.

UNIT – III CASH BOOK &BANK RECONCILIATION STATEMENT (BRS)   (12 HOURS)

Cash Book: Meaning – Objectives and Classification – Difference between Cash and Trade Discount – Problems on Triple Column Cash Book. Bank Reconciliation Statement (BRS): Meaning – Causes for Difference between Cash and Pass Book Problems.

UNIT – IV FINAL ACCOUNTS   (12 HOURS)

Meaning – Need for Preparation – Components of Final Accounts – Problems with Adjustments.

UNIT – V DEPRECIATION   (12 HOURS)

Meaning – Need for Providing Depreciation – Problems on Straight Line Method, Diminishing BalanceMethod and Annuity Method.

TEXT:

Fundamentals of Accounting, S.P.Jain and K.L.Narang, Kalyani Publishers, 2017

REFERENCES:

Financial Accounting, T.S. Reddy & Murthy, Margham Publications,2017

COURSE DESIGNER

Ms. Shilpa A. Talreja – Assistant Professor, Department of Commerce.

COMPUTER APPLICATIONS IN

BUSINESS

SEMESTER - III

Course Code	Course Title	Category	Learning Hours	Theory Hours/ Week	Practical Hours/ Week	Credit
19UCA3AC1P / 19UIT3AC1P	Computer Applications in Business	Allied	45	-	3	2

COURSE OBJECTIVE

➢ The primary objective of this course is to expose the students with the Accounting Software TallyERP9with GST.

COURSE OUTCOME

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

CO No.	CO Statement	Knowledge Level
CO 1	Recall the basic concepts of components of computer	K1
CO2	Understand the basic features of Tally ERP9	K2
CO3	Prepare different types of financial reports	K3
CO4	Analyse stock group, stock category, stock item and compare stock category summary with godown summary.	K4
CO5	Explain the procedure for GST Registration.	K5

SYLLABUS

UNIT– I INTRODUCTION TO COMPUTERIZED ACCOUNTING

Introduction to computerized Accounting – Features – Advantages – Manual Accounting Vs. Computerized Accounting – Accounting transaction – Journal Entry – Ledgers – Trial Balance – Balance Sheet.

UNIT – II INTRODUCTION TO TALLY

Opening Tally screen – Gate way of Tally – Features of Tally – Creation of Company – Selectinga Company – Altering / Modifying existing company – Configuration of Tally – Tally screen and Menu.

UNIT – III CREATION OF LEDGERS, GROUPS & VOUCHER ENTRIES

Creation of Ledger – Group – Voucher – Displaying – Altering – Deleting – Introduction to Voucher entries – Contra Voucher – Payment Voucher – Receipt Voucher – Journal Voucher – Sales Voucher – Recording transaction of sample data.

UNIT – IV COST CATEGORIES & COST CENTRE

Introduction to Cost – Creation of cost Categories – Creation of Cost Centre – Editing – Deleting - Usage of Cost Category and Cost Centres in voucher entry.

UNIT– V GST & GENERATING REPORTS

Introduction to GST – Registration - Creating Company with GST – Creating Tax Ledgers- Recording GST Sales – Financial Reports: Trial Balance – Profit & Loss – Balance Sheet - Bank Reconciliation Statement - Stock Summary.

LIST OF PRACTICALS:

1. Creation, alteration and deletion of companies and user defined accounting groups.

2. Creation, alteration and deletion of ledger Accounts.

3. Preparation of Final Accounts with adjustments.

4. Voucher entries in double entry mode.

5. Creation, alteration and deletion of inventory masters.

6. Generating Accounting and Inventory Reports.

7. GST Registration and E-filing of returns.

TEXT BOOK

S.No.	Auth ors	Title	Publishers	Year of Publication
1.	Computer Applications in Business	V. Srinivasa Vallabhan	Sultan Chand & Sons	2014
2.	Computer Application by Implementing Tally ERP	A.K. Nadhani	BPB Publications, Chennai.	2015
3.	Windows and MS Office with Database Concepts	N. Krishnana	Scitech Publications	2001

REFERENCE BOOK

S.No.	Authors	Title	Publishers	Year of Publication
1.	Computer Applications in Business	K. Mohankumar & S.Rajkumar	Vijay Nicole Imprints (P)Ltd	2018
2.	Tally ERP 9	Dr. Pl Rizwan Ahmed	Margham Publications	2016
3.	Computer Application in Business	Dr. Joseph Anbarasu	Learn Tech Press	2007

COURSE DESIGNER

Ms. J. Lalithambigai – Assistant Professor, Department of Commerce.

PRINCIPLES OF INTERNET

Semester: III

Course Code	Course Title	Category	Learning Hours	Theory Hours/ Week	Practical Hours/ Week	Credit
19UCA3NME1	Principles of Internet	NME-I	30	2	-	2

OBJECTIVES

- To understand the architecture of Internet
- To brief the concepts of network and WWW
- To expose students about entertainment on Internet with security

COURSE OUTCOMES

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

CO NUMBER	CO STATEMENT	KNOWLEDGE LEVEL
CO1	State the dangers in Internet	K1
CO2	Understand the architecture of Internet	K2
CO3	Utilize the Internet	K3
CO4	Discuss on Internet tools	K2
CO5	Apply Internet for entertainment & multimedia	K3

MAPPING WITH PROGRAMME SPECIFIC OUTCOMES (PSO):

	PSO1	PSO2	PSO3	PSO4
CO1	M	S	M	M
CO2	M	M	M	M
CO3	M	S	S	M
CO4	S	M	S	M
CO5	S	S	S	S

S – Strong; M – Medium; L - Low

UNIT I: ARCHITECTURE OF INTERNET **(6 HOURS)**

Understanding the Internet's Underlying Architecture: What is Internet? - How computer networks send data across the internet? - How TCP/IP works?

UNIT II: CONNECTING TO THE INTERNET **(6 HOURS)**

How computers connect to the Internet? - How wireless connections and WIFI works? - How Home networks work?

UNIT III: USING THE WORLD WIDE WEB **(6 HOURS)**

How Google works? - How map sites work? - How Wikis and Wikipedia work? - Using common internet tools: How telnet works? - How FTP works? - How agents work? - How CGI scripting works?

UNIT IV: ENTERTAINMENT AND MULTIMEDIA ON THE INTERNET **(6 HOURS)**

How music and audio works on the Internet? - How music sharing and file sharing? - How animation ontheweb works? - Shopping and doing business on the Internet.

UNIT V: PROTECTING YOURSELF ON THE INTERNET **(6 HOURS)**

How firewalls work? - How hackers can cripple the Internet and attack your PC? - The dangers of wireless networking -How viruses work? - Parental controls on the Internet.

TEXT:

1. How the Internet Works? - Preston Gralla, Pearson Education, 8th Edition
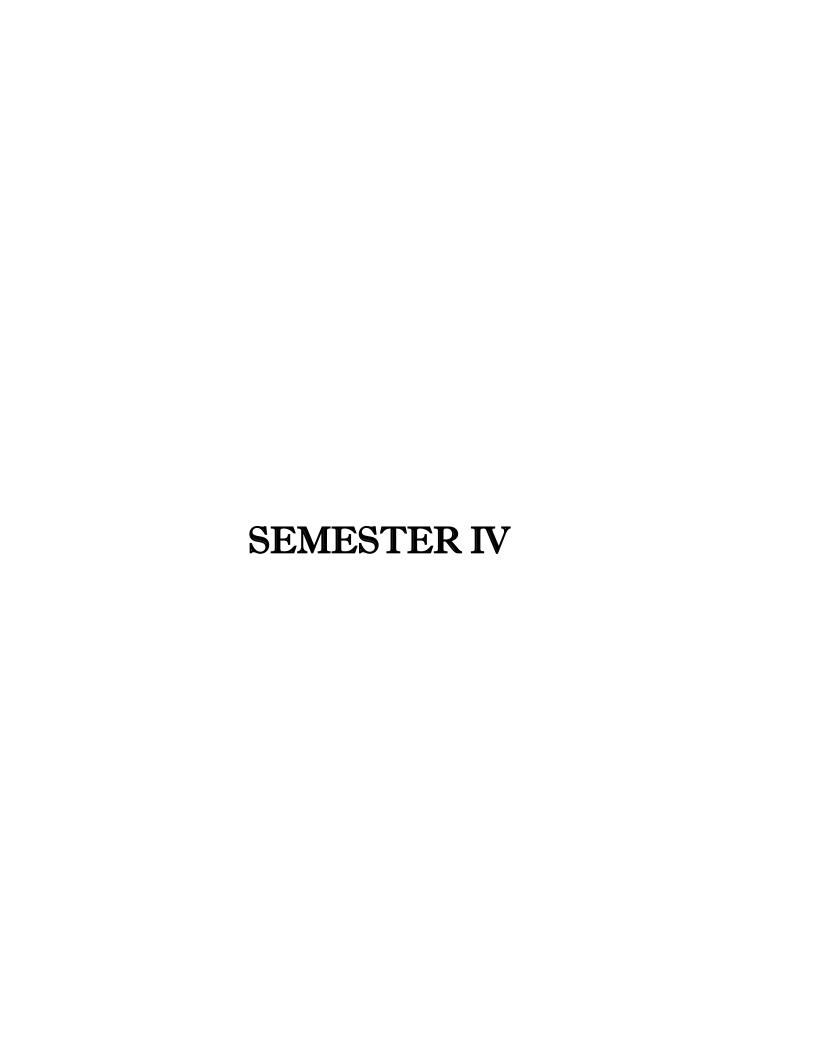
REFERENCES:

1. "Internet for Everyone"- Alexis Leon, S.Chand (G/L)& Company; 2nd Edition, 2012

WEB REFERENCES:
   1. http://web.stanford.edu/
   2. https://in.zapmetasearch.com/
   3. https://ads.google.com/
   4. https://in.zapmetasearch.com/
   5. https://www.izito.co.in/

COURSE DESIGNER

Ms. T. Julie Mary- Assistant Professor, Department of Computer Applications

SEMESTER IV

PROGRAMMING WITH JAVA

						Semester: IV

Course Code	**Course Title**	**Category**	**Learning Hours**	**Theory Hours/ Week**	**Practical Hours/ Week**	**Credit**
19UCA4CC4	Programming with JAVA	Core	90	6	-	5

PREAMBLE

- Understand fundamentals of programming concepts, OOPs concepts and ability to write aJava program to solve specified problems.

COURSE OUTCOME:

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

CO NUMBER	**CO STATEMENT**	**KNOWLEDGE LEVEL**
CO1	Explain the fundamental concepts in Object Oriented Programming	K2
CO2	List basic programming skills in Java	K1
CO3	Illustrate package and exceptions with example	K2
CO4	Demonstrate the usage of threading and files	K2
CO5	Applet package and Database connectivity	K3

MAPPING WITH PROGRAM SPECIFIC OUTCOMES:

	PSO1	**PSO2**	**PSO3**	**PSO4**
CO1	M	M	M	M
CO2	M	M	M	M
CO3	S	M	M	M
CO4	S	M	M	M
CO5	S	S	S	M

S-Strong; M-Medium; L-Low

SYLLABUS

UNIT I: OOPS FUNDAMENTALS   **(18 HOURS)**

Fundamentals of Object-Oriented Programming: Basic Concepts of Object-Oriented Programming-

Benefits and Applications of OOP. **Java Evolution:** Java Features – How Differs from C andC++ - Java and

Internet – Java And World Wide Web – Web Browsers - Java Environment.

Overview of Java Language: Simple Java Program- More of Java- An Application with Two Classes- Java Program Structures, Tokens, Statements– Installing and Configuring Java- Implementing A Java Program – Java Virtual Machine – Comment Line Arguments – Programming Style.

UNIT II: CONSTANTS, VARIABLES, DATA TYPES, OPERATORS AND CONTROL STATEMENTS (18 HOURS)

Constants, Variables and Data Types: Constants- Variables – Data Types – Declaration of Variables – Giving Values to Variables – Scope of Variables – Symbolic Constants- Type Casting- Getting Values of Variables. **Operators and Expressions**- **Decision Making and Branching -Decision Making and Looping** – While, Do, For Statements, Jump in Loops, Return Statements.

UNIT III: CLASSES, OBJECTS, METHODS, ARRAYS, STRINGS, VECTORS, INTERFACES AND PACKAGES (18 HOURS)

Classes, Objects and Methods: Defining A Class – Fields and Methods Declaration - Creating Objects – Accessing Class Members – Constructors – Method Overloading – Static Members – Nesting of Methods – Inheritance: Extending A Class – Overriding Methods – Final Variables, Methods and Classes – Finalizer Methods – Abstract Methods and Classes –Visibility Control. **Arrays, Strings and Vectors**: Creating Arrays – One- and Two-Dimensional Arrays-Strings – Vectors – Wrapper Classes – Enumerated Types. **Interfaces: Multiple Inheritance** – **Packages**.

UNIT IV: MULTITHREADED PROGRAMMING, FILES AND I/O STREAMS (18 HOURS)

Multithreaded Programming: Creating Threads – Extending the Thread Class – Stopping and Blocking Thread - Life Cycle of Thread-Using Thread Method - Thread Exception- Thread Priority-Synchronization – Implementing the Runnable Interface. **Managing Errors and Exceptions**. **Managing Input / Output Files in Java**.

UNIT V: APPLET AND DATABASE CONNECTIVITY (18 HOURS)

Applet Programming: How Applets Differ from Applications - Preparing to Write Applets- Building Applet Code- Applet Life Cycle- Creating and Executable Applet – Designing A Web Page- Applet Tag-Adding Applet to HTML File-Running the Applet. **Java Database Connectivity**: Introduction – JDBC Architecture – Discussion with Example – Overview of JDBC Components.

TEXT

1. E. Balagurusamy,"Programming with JAVA", Tata McGraw-Hill Publishing Company Limited,New Delhi,6th Edition,2019.

REFERENCES

1. Ken Arnold gosling and Davis Holmen."The JAVA Programming Language",3rd Edition. Addition Wesley Publication.

2. S.Sagayaraj, R.Denis, P.Karthik and D.Gajalakshmi, "Java programming", Universities Press,2017.

3. C.Muthu,"Programming with JAVA", Second Edition, McGraw Hill Education (2008).

4. Schildt Herbert, "Java :The Complete Reference", Tata McGraw-Hill,8th Edition, 2011.

WEB REFERENCES

1. https://beginnersbook.com/

2. https://www.tutorialspoint.com/java/java_tutorial.pdf

3. http://www.ntu.edu.sg/home/ehchua/programming/java/jdbc_basic.html - For JDBC connection.

COURSE DESIGNER

Ms.V.Yasodha, Assistant Professor, Department of Computer Applications.

PRACTICAL-IV –PROGRAMMING WITH JAVA

Semester: IV

Course Code	Course Title	Category		Learning Hours	Theory Hours/Week	Practical Hours/Week	Credit
19UCA4CC4P	Practical IV- Programming with Java	Core		45	-	3	2

PREAMBLE
- To impart practical training on Programming with Java.

COURSE OUTCOMES (CO)
- On successful completion of the course, students will be able to

CO NUMBER	CO STATEMENT	KNOWLEDGE LEVEL
CO1	Recall basic arithmetic operations, command line arguments and arrays.	K1
CO2	Apply polymorphism, inheritance, interface and packages concepts.	K3
CO3	Implement all string operations.	K3
CO4	Use thread and exception handling concepts.	K3
CO5	Create applet programs	K5

MAPPING WITH PROGRAMME SPECIFIC OUTCOMES

	PSO1	PSO2	PSO3	PSO4
CO1	S	M	M	M
CO2	M	S	M	S
CO3	M	M	S	L
CO4	M	S	M	S
CO5	L	S	S	S

S-Strong; M-Medium; L-Low

LIST OF PRCTICALS

1. COMMAND LINE ARGUMENTS

Write a program to find the factorial of a given number using command line arguments.

2. ARRAYS

Write a program to sort list of elements in ascending and descending order.

3. STRING OPERATIONS

Write a program to implement all string operations.

4. POLYMORPHISM

Write program to implement constructor overloading.

5. INHERITANCE

Write a program to calculate employee pay slip using single inheritance.

6. INTERFACE

Write a program to implement the concept of interface.

7. PACKAGES

Write a program to find the student's percentage and grade using packages.

8. THREAD

Write a program to implement multithread concept and also assign priorities to them.

9. EXCEPTION HANDLING

Write a program to handle the exception using try and multiple catch statements

(NumberFormatException, ArithmeticException, ArrayIndexOutOfBoundsException).

10. APPLETS

Write a program to create a window with three check boxes called red, green, blue. The applet should change the colors according to the selection of the check box.

COURSE DESIGNER
Ms. P. Ranjani, Assistant Professor, Department of Computer Applications.

ALLIED COURSE – III
ORGANIZATIONAL BEHAVIOUR

Semester – IV		Hours/Week - 5	
Allied Course - III	**Organizational Behaviour**	Credits - 3	
Course Code - 19UCA4AC5 / 19UIT4AC5		Internal 25	External 75

Course Objective

➢ To help the students to develop cognizance of the importance of human behaviour.

➢ To enable students to describe how people behave under different conditions and understand why people behave as they do.

➢ To provide the students to analyse specific strategic human resources demands for future action.

Course Outcome

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

CO No.	CO Statement	Knowledge Level
CO 1	Define the conceptual framework of organization behaviour	K1
CO2	Explain what leadership is and what makes an effective leader	K2
CO3	Identify the individual characteristics that influence work behaviour and organizational effectiveness.	K3
CO4	Analyse specific strategic human resources demands for future action	K4

Syllabus

Unit – I Fundamentals of Organisational Behaviour (15 Hours)

Definition – Nature – Scope and Goals of Organisation Behaviour – Fundamentals Concepts – Models – Foundation of Individual Behaviour – Human Behaviour - TQM – Managing Cultural Diversity – Total Employee Involvement.

Unit – II Personality, Perception & Motivation (15 Hours)

Definition – Determinants – Theories of Personality – Trait Theory: Big Five Model Type of Theory –Types of Personality. Perception: Meaning – Factors Affecting Perception – Motivation – Needs and Importance of Motivation – Process and Models of Motivation – Theories of Motivation: Maslow's Need Hierarchy Theory, Mc Gregors's Theory "X" and Theory "Y" and Herzberg's Two factor theory of Motivation - Techniques of Motivation.

Unit – III Job Satisfaction & Job Stress (15 Hours)

Meaning – Factors – Importance of Satisfaction – Morale – Importance – Employee Attitude and Behaviour and Their Significance to Employee Productivity – Job Enrichment – Job Enlargement - Job Stress - Nature - Kinds of Stressors – Managing Stress – Job Frustration.

Unit – IV Groups and Conflict in Organisation (15 Hours)

Group: Meaning - Nature - Types – Group Dynamics – Cohesiveness – Group Norms. Conflict: Concept

– Process – Types – Resolution of Conflict – Sociometry – Power and Politics – Meaning – Distinction betweenPower and Politics – Organisational Politics – Types of Power.

Unit – V Learning & Leadership   **(15 Hours)**

Learning - Components of Learning, Theories of Learning - Leadership – Types – Theories – Trait – Managerial Grid - Fielders Contingency Theory – Organisational Climate – Organisational Effectiveness –Counselling and Guidance – Importance – Types of Counselling.

Text Book

.No.	Authors	Title	Publishers	of Publication
1.	L.M. Prasad	Organisational Behaviour	Sultan Chand & Sons	2008
2.	K. Aswathappa	Organisational Behaviour Text, Cases & Games	Himalaya Publications	2013

Reference

.No.	Authors	Title	Publishers	of Publication
1.	P. Subba Rao	Management & Organisational Behaviour	Himalaya Publications	2009
2.	S.S. Khanka	Organisational Behaviour Text & Cases	Sultan Chand & Co. Ltd	2008
3.	Fred Luthans	Organisational Behaviour Text & Cases	Mc Graw Hill	2014

Pedagogy

Lecture, Power Point Presentation, Assignment, Quiz, Google Classroom, Moodle, Seminar & Group Discussions.

Course Designer

Ms. D. Indumathi – Assistant Professor, Department of Commerce.

SKILL BASED ELECTIVE-I
PRACTICAL – A - ANIMATION PRACTICALS

Course Code	Course Title	Category	Learning Hours	Theory Hours/Week	Practical Hours/Week	Credit
19UCA4SBE1AP	Animation Practicals	SBE	30	_	2	2

PREAMBLE
- To impart training on Animation practicals

COURSE OUTCOMES (CO)

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

CO NUMBER	CO STATEMENT	KNOWLEDGE LEVEL
CO1	Recall pen, brush tools in Photoshop	K1
CO2	Apply resolution, grayscale, black and white toan image	K3
CO3	Using layers, masking, rotation,overlapping of an image	K3
CO4	Creating custom colors, gradients,grouping, tweening	K5

MAPPING WITH PROGRAMME SPECIFIC OUTCOMES

	PSO1	PSO2	PSO3	PSO4
CO1	S	S	M	M
CO2	M	S	S	S
CO3	M	S	S	S
CO4	S	S	S	S

S-Strong; M-Medium; L-Low

LIST OF PRACTICALS PHOTOSHOP

1. BRUSH TOOL

   Create a multicolor real life image using brush tool.

2. IMAGE SIZE, RESOLUTION AND COLOR CHANGE

   a. Changing size, resolution and gray scale of an image.

   b. Convert black and white image into color image.

3. IMAGE MODIFICATION

   Cropping, rotating, overlapping, super imposing an image.

4. COMMERCIAL BROCHURE

   Develop a commercial brochure with background tints.

5. LAYERS

   Working with layers (creation, deletion, merge).

6. FILTERS AND MASKS

   Applying masks and filtering on images.

FLASH

1. STROKES AND FILLS

   Working with strokes and fills.

2. WORKING WITH COLOURS

   Creating custom colors, gradients, grouping of objects.

3. CONVERSION

   Converting text to shapes.

4. TWEENING

   Applying tweening (motion, shape)

COURSE DESIGNER

Ms. P. Ranjani, Assistant Professor, Department of Computer Applications.

PRACTICAL – B - HTML 5 PRACTICALS

Course Code	Course Title	Category	Learning Hours	Theory Hours / Week	Practical Hours / Week	Credit
19UCA4SBE1BP	HTML 5 Practicals	SBE	30	-	2	2

PREAMBLE
To know the basic concepts of HTML 5.

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

CO NUMBER	CO STATEMENT	KNOWLEDGE LEVEL
CO1	Understand basic HTML tags	K1
CO2	Create a HTML page using keygen, meter and menu Elements	K5
CO3	Apply audio components and datalist in HTML 5	K3

MAPPING WITH PROGRAMME SPECIFIC OUTCOMES (PSO)

	PSO1	PSO2	PSO3	PSO4
CO1	S	S	M	M
CO2	M	M	M	M
CO3	M	S	S	M

S- Strong; M-Medium; L-Low

LIST OF PRACTICALS

1. BASIC ELEMENTS OF HTML

   a. Design a webpage using SCRIPT & NOSCRIPT tags using HEADER & FOOTER

   b. Design a webpage using Citations, Quotations & Definitions

2. PHRASE TAGS

   a. Create a web page using Canvas element in HTML.

   b. Design a webpage by applying Keygen element of HTML.

3. PRESENTATION TAGS
   Create a web page using Background image & color properties

4. LIST PROPERTY

   Design a webpage using list-style-type property.

5. LINKS AND IMAGES

   a. Create a web page using HYPERLINK

   b. Create a web page using IMAGES.

6. TABLES

   Design a webpage using Table elements

7. FORMS

   Design a webpage by applying Form elements of HTML.

8. FRAMES

   Create a web page using frames

9. JAVASCRIPT

   Write JAVASCRIPT to display the result of any calculation, using HTML output element.

COURSE DESIGNER

   Ms.Lakshna Arun, Assistant Professor, Department of Computer Applications