FATIMA COLLEGE (AUTONOMOUS)

Re-Accredited with "A++" Grade by NAAC (4th Cycle)

Maryland, Madurai- 625 018, Tamil Nadu, India

NAME OF THE DEPARTMENT : COMPUTER SCIENCE

NAME OF THE PROGRAMME : B.Sc. COMPUTER SCIENCE

PROGRAMME CODE : UACS

ACADEMIC YEAR : 2023 – 2024 (For those who joined in June 2023)

(Syllabus with TANSCHE Grid)

Fatima College (Autonomous), Madurai

The Minutes of the Board of Studies meeting

Name of the Department : Computer Science

Programme : B.Sc

To be implemented from the academic year 2023-2024 onwards. Convened on 3.4.2023 at 2 pm in the Department of Computer Scien

Members present

1. Dr. G. Germine Mary — Chairman
   Head, Dept. of Computer Science
   Fatima College
   GerrineMary 3/4/23

2. Dr. P. Kabilan — University Nominee
   Assistant Professor
   Dept. of Computer Science
   Madurai Kamaraj University College
   3/4/23

3. Dr. S. Vimala — Subject Expert
   Associate Professor
   Dept. of Computer Science
   MTWU, Kodaikanal
   Absent

4. Dr. Sr. Shantha Mary Joshita — Subject Expert
   Associate Prof. & Head
   Dept. of Computer Science
   Jayaraj Annapackiam College
   Periyakulam
   3/4/23

5. Mr. G. Sahaya Raj — Industrialist
Principal Software Engineer
Dell International Pvt. Ltd.
Bangalore
3/4/23

6 Dr. S. Shaik Parveen — Alumna
Assistant Professor
Dept. of Computer Science
The American college
Madurai
3/4/23

7. Dr. A. Rajeswari — Dean of Academic Affairs – Science
Assistant Prof in chemistry
Fatima College
3/4/2023

Staff Members of the Department

8. Dr. S. Vidya
Associate Professor
Vidya

9. Dr. K. Rosemary Euphrasia
Associate Professor
K. Rosemary Euphrasia
3/4/2023

10. Dr. A. Vimala
Associate Professor
Vimala
3.4.2023

11. Dr. P. Meenakshi Sundari
Assistant Professor
P. Meenakshi

12. Dr. S. Arul Jothi
Assistant Professor
Absent

13. Dr. T. Vasantha
Assistant Professor
T. Vasantha 3/4/2023

14. Ms. C. Swetha
Assistant Professor.

AGENDA

1. Presentation of the action taken report of the previous BoS.
2. To pass the UG framework as suggested by TANSCHE
3. To pass the detailed syllabus for all the courses offered by the dept. in I & II. semesters.
4. To pass the changes in the syllabus of the courses offered in IV, V and VI semesters
5. To pass the syllabus of the Value added online course "Latest Computing Technologies"
6. To pass the syllabus for the Computer Application courses offered by the Dept. of Sociology with Computer Applications

1. Action Taken Report on previous BoS

Suggestion	Action Taken
* To organise more sessions with Alumnae to keep the students aware of the current trends in the industry	3 sessions were organised with Alumnae and students interacted with them
* To create awareness about the work from home opportunities.	An interactive guest lecture was organised to create awareness about work from home opportunities.

2. The framework for UG as suggested by TANSCHE fitting in all the papers for all the 6 semesters was created and passed in the board.

The following are the core courses offered.

SEMESTER	COURSE TITLE
I	1. Python Programming
	2. LAB I – Python Programming
II	3. Data Structures & Algorithms
	4. LAB II – Data Structures using C
III	5. Relational Database System Concepts
	6. LAB III – RDBMS
IV	7. Industry Module – Programming in JAVA
	8. LAB IV – Programming in JAVA
V	9. J2EE Programming
	10. Operating System Concepts
	11. LAB V – J2EE Programming.
	12. Project I
VI	13. PHP Programming
	14. Project II
	15. LAB VI – PHP Programming

Need for introduction – All the papers offered under core courses are mandatory courses for every student learning Computer Science at the UG level.

The following are the general and discipline specific elective courses offered during all 6 semesters.

Generic – G Discipline Specific – DS

Generic/ DS-SEM	Course Title
G-I	1. Programming in C
G-I	2. Web Development
G-II	3. Computer System Architectur
G-II	4. Object Oriented Programming in C
G-III	5. Programming in JAVA
G-III	6. Client side programming using JAVA Script.
G-IV	7. Python Programming
G-IV	8. RDBMS
DS-V	9. Software Engineering
DS-V	10. Cloud Computing
DS-V	11. Computer Graphics
DS-V	12. Data Mining and Warehousi
DS-VI	13. Data Communications and Networking
DS-VI	14. Software Testing
DS-VI	15. Introduction to Artificia Intelligence
DS-VI	16. Big Data Analytics

Need for introduction - The preliminary courses of Computer Science are offered as Generic Electives.

Courses offered as DS are courses which will provide completeness to the Comput Science Programme at the UG level.

The following are the various Skill Enhancement Courses (SEC), Foundation, Internship and Professional competency

Courses Offered under Part IV

Type & Sem	Course Title
SEC I	1. Still Graphics using CORELDRAW (Non Major Elective)
FC - I	2. Desktop Applications
SEC - II	3. Still Graphics using Photoshop
SEC - II	4. Web designing using HTML & CSS
SEC - III	5. ~~DTP - CORELDRAW~~
SEC - III	6. Client side programming using JAVA Script.
SEC - IV	7. Server side programming using ASP .NET
SEC - IV	8. Web services Development using XML
Internship - V	9. Internship (II year summer vacation)
SEC - VI	10. Advanced Excel

All the courses offered under core, elective and Part IV have Global relevance and have scope for employability Entrepreneurship and skill development.

3. The detailed syllabus for all the papers offered in the I and II semesters were framed and passed in the BOard.

4. Revision of Courses

All the 3 courses mentioned below have Global relevance and have scope for employability, entrepreneurship and

skill development:

S.No	Course code	Course Title	No. of UNITS and the title revised and need for revision	% revised
1.	22B4CC8	LAB IV – RDBMS and Data Analytics using Spreadsheets to LAB IV – RDBMS	Spreadsheets removed and focus only on SQL	20
2.	19B5CC9	Programming in JAVA	UNIT III & V – few concepts removed. To facilitate detailed study some advanced topics are removed	20
3.	19B6CC12	J2EE Programming	UNIT I & III modified Advanced topics dealt in PG are removed	15

5. Introduction of online Value added certificate course on "Latest computing Technologies" meant for advanced learners.

Course Title	MOU with industry	Skills Sharpened
Latest Computing Technologies	—	Acquire knowledge of latest technologies like mobile computing & cloud computing

6. The syllabus for the computer Applications courses offered by the Dept. of Sociology and Social work was passed in the board.

SUGGESTIONS & RECOMMENDATIONS: The TANSCHE framework & the syllabus for I year was reviewed and passed.

3/4/23. P. Moenakshi 3/4 T. Vasantha 3/4/2023

3/4/23 3/4/2023 K. Durgapri 3/4/2023

3/4/'23 3/4/2023

3/4/23 3/4/2023

3/4/23 Srimala 3.4.2023

03/04/2023

Fatima College (Autonomous), Madurai
The minutes of the Board of Studies meeting

Name of the Department : Computer Science
Programme : M.Sc

To be implemented from the academic year 2023-2024 onwards. Convened on 3.4.2023 at 2pm in the Department of Computer Science

Members present

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K. Rosemary Euphrasia 3/4/2023

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Avimala 3.4.2023

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P. Meenakshi

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Assistant Prof.
Absent

13. Dr. T. Vasantha
Assistant Prof.
T. Vasantha 3.4.2023

14. Ms. C. Swetha
Assistant Prof.

C. Swetha

AGENDA

1. To pass the PG framework as suggested by TANSCHE
2. To pass the detailed syllabus for all the courses offered by dept for M.Sc Computer Science in I and II semesters
3. To pass the changes made in 19PGCB13 course of the III semester.

1. The framework for PG as suggested by TANSCHE filling in all the courses for all the 4 semesters were created and passed in the board.

The following are the core courses offered.

SEMESTER	COURSE TITLE
I	1. Advanced programming in JAVA
	2. Theory of computation
	3. Practical I – Advanced Programming in JAVA
II	4. Design and Analysis of Algorithm
	5. Object oriented Software Engineering
	6. LAB-II – Extreme Programming – ASP.NGT
III	7. Digital Image Processing
	8. Data mining and Data Warehousing
	9. LAB-III – Digital Image Processing
	10. Software Testing – Industry
IV	11. Machine Learning

	12. Network Security & Cryptography 13. Lab IV – Machine Learning 14. Project

Need for introduction – All the papers offered under core courses will facilitate students to have indepth knowledge while learning at the PG level.

The following are the generic [G] and discipline specific [DS] elective courses offered during all IV semesters.

G/DS & SEM	Course Title
DS – I	1. Advanced Computer Graphics
DS – I	2. Advanced Database Systems Concepts
DS – I	3. Distributed operating Systems
DS – I	4. LAB – Computer Graphics
DS – I	5. LAB – Advanced RDBMS
DS – I	6. LAB – LINUX for networking
G – II	7. Web Development & Advanced Excel
DS – II	8. Multimedia Technologies
DS – II	9. Computational Data Processing using Python
DS – II	10. Advanced Communication Networks
DS – III	11. Neural networks in Image Processing
DS – III	12. Big Data Analytics
DS – III	13. Security in Computing
DS – IV	14. Introduction to Video processing

DS – IV	15. Web Database and information System
DS – IV	16. Principles of IoT

Need for introduction – The preliminary course of Computer Science are offered as Generic elective.

Courses offered as DS are courses which will facilitate specialization at the PG level.

The following are the Skill Enhancement courses offered:

SEM	Course Title
I	Lab – Python Programming
II	Lab – Mobile Application Development Using Android Studio
III	UGC – NET Syllabus – Part – I
IV	UGC – NET Syllabus – Part – II

All the courses offered under core, Generic / DS electives and skill enhancement have Global relevance and have scope for employability, Entrepreneurship and skill development.

2. The detailed syllabus for the courses offered in the I and II semesters were framed and passed in the board.

3. Revision of Courses:

The course mentioned below has global relevance and scope for employability, entrepreneurship and skill development.

Course code	Course Title	No. of units revised and need for revision	% revised
19PGI3B13	Data Mining and Data Warehousing	UNIT II, III & IV modified. To facilitate indepth study of the topics, some topics were removed.	10

SUGGESTIONS & RECOMMENDATIONS —

* Libraries and frameworks to be introduced
* Industry module to be replaced with cloud computing trends. * Knowledge of Devops to be imparted.

3/4/23 P. Meenakshi 3/4/23 3/4/2023

3/4/23 K. Ramyasree 3/4/23 3/4/23 T. Vasantha 3/4/2023

3/4/23 3/4/23 3.4.2023

03/04/2023 3/4/2023.

VISION OF THE DEPARTMENT

To be in the Zenith of Scholastic Excellence in Computer Science by imparting Value Based, Skill Based and Career Oriented Education for Holistic Development.

MISSION OF THE DEPARTMENT

As a Department, we are committed to

- Empower Women and First generation learners
- Inculcate lateral thinking and make them professionally competent to meet the global challenge in the field of Computer Science
- Develop the programming skills of the young learners to meet the current trends of Computer Science
- Motivate the students to be socially responsible and acquire entrepreneurial skills to become global leaders
- Promote quality and ethics among the students through Value Based Education

PROGRAMME EDUCATIONAL OBJECTIVES (PEO)

PEO 1	Our graduates will be academic, digital and information literates; creative, inquisitive, innovative and desirous for the "more" in all aspects
PEO 2	They will be efficient individual and team performers, exhibiting progress, flexibility, transparency and accountability in their professional work
PEO 3	The graduates will be effective managers of all sorts of real – life and professional circumstances, making ethical decisions, pursuing excellence within the time framework and demonstrating apt leadership skills
PEO 4	They will engage locally and globally ,evincing social and environmental stewardship demonstrating civic responsibilities and employing right skills at the right moment.

GRADUATE ATTRIBUTES (GA)

Fatima College empowers her women graduates holistically. A Fatimite achieves all-round empowerment by acquiring Social, Professional and Ethical competencies. A graduate would sustain and nurture the following attributes:

I. SOCIAL COMPETENCE	
GA 1	Deep disciplinary expertise with a wide range of academic and digital literacy
GA 2	Hone creativity, passion for innovation and aspire excellence
GA 3	Enthusiasm towards emancipation and empowerment of humanity
GA 4	Potentials of being independent
GA 5	Intellectual competence and inquisitiveness with problem solving abilities befitting the field of research

GA 6	Effectiveness in different forms of communications to be employed in personal and professional environments through varied platforms
GA 7	Communicative competence with civic, professional and cyber dignity and decorum
GA 8	Integrity respecting the diversity and pluralism in societies, cultures and religions
GA 9	All – inclusive skill - sets to interpret, analyse and solve social and environmental issues in diverse environments
GA 10	Self-awareness that would enable them to recognise their uniqueness through continuous self-assessment in order to face and make changes building their strengths and improving on their weaknesses
GA 11	Finesse to co-operate exhibiting team-spirit while working in groups to achieve goals
GA 12	Dexterity in self-management to control their selves in attaining the kind of life that they dream for
GA 13	Resilience to rise up instantly from their intimidating setbacks
GA 14	Virtuosity to use their personal and intellectual autonomy in being life-long learners
GA 15	Digital learning and research attributes
GA 16	Cyber security competence reflecting compassion, care and concern towards the marginalised
GA 17	Rectitude to use digital technology reflecting civic and social responsibilities in local, national and global scenario
II. **PROFESSIONAL COMPETENCE**	
GA 18	Optimism, flexibility and diligence that would make them professionally competent
GA 19	Prowess to be successful entrepreneurs and employees of trans-national societies
GA 20	Excellence in Local and Global Job Markets
GA 21	Effectiveness in Time Management
GA 22	Efficiency in taking up Initiatives
GA 23	Eagerness to deliver excellent service
GA 24	Managerial Skills to Identify, Commend and tap Potentials
III. **ETHICAL COMPETENCE**	
GA 25	Integrity and discipline in bringing stability leading a systematic life promoting good human behaviour to build better society
GA 26	Honesty in words and deeds
GA 27	Transparency revealing one's own character as well as self-esteem to lead a genuine and authentic life
GA 28	Social and Environmental Stewardship

GA 29	Readiness to make ethical decisions consistently from the galore of conflicting choices paying heed to their conscience
GA 30	Right life skills at the right moment

PROGRAMME OUTCOMES (PO)

The learner will be able to

PO 1	Apply acquired scientific knowledge to solve complex issues.
PO 2	Attain Analytical skills to solve complex cultural, societal and environmental issues.
PO 3	Employ latest and updated tools and technologies to analyse complex issues.
PO 4	Demonstrate Professional Ethics that foster Community, Nation and Environment Building Initiatives

PROGRAMME SPECIFIC OUTCOMES (PSO)

On completion of three years of B.Sc. Computer Science programme, the graduates would be able to

PSO 1	Develop professionally competent citizens by applying the scientific knowledge of Computer Science with the ability to think clearly, rationally and creatively to support in evolving solutions to the social/public/scientific issues with responsible democratic participation
PSO 2	Enterprising resourcefulness to identify, plan, formulate, design and evaluate solutions for complex computing problems that address the specific needs with appropriate consideration for Societal, Cultural, Environmental and Industrial domains.
PSO 3	Holistic development to ignite the lateral thinking ability in problem solving, acquisition of new skills, open-minded and organized way of facing problems with self awareness and evolving analytical solutions
PSO 4	Create and initiate innovations effectively and communicate efficiently with the computing community and society at large to bridge the gap between computing industry and academia
PSO 5	Through Digital Literacy, understand, assess and commit to professional and ethical principles, norms and responsibilities of the cyber world and the ability for work efficacy as a part of a team and engage effectively with diverse stakeholders
PSO 6	Ability and willingness to embark on new ventures and initiatives with critical thinking and desire for more continuous learning focusing on life skills.

FATIMA COLLEGE (AUTONOMOUS), MADURAI-18
DEPARTMENT OF COMPUTER SCIENCE
For those who joined in June 2023 onwards
PROGRAMME CODE: UACS

PART – I – TAMIL / FRENCH / HINDI– 12 CREDITS

PART – I – TAMIL

Offered by the Research Centre of Tamil

S.NO	SEM.	COURSE CODE	COURSE TITLE	HRS	CREDITS	CIA Mks	ESE Mks	TOT. MKs
1.	I	23TL1C1	Language-Modern Literature -	5	3	40	60	100
2.	II	23TL2C2	Language - Bakthi Literature -	5	3	40	60	100
3.	III	23TL3C3	Language- Epic Literature	5	3	40	60	100
4.	IV	23TL4C4	Language-Sangam Literature	5	3	40	60	100
			Total	20	12			

PART – I – FRENCH

Offered by The Department of French

S.NO	SEM.	COURSE CODE	COURSE TITLE	HRS	CREDITS	CIA Mks	ESE Mks	TOT. MKs
1.	I	23RL1C1	PART 1 LANGUAGE FRENCH - LE NIVEAU INTRODUCTIF	5	3	40	60	100
2.	II	23RL2C2	PART 1 LANGUAGE FRENCH - LE NIVEAU DÉCOUVERTE	5	3	40	60	100
3.	III	23RL3C3	PART 1 LANGUAGE FRENCH - LE NIVEAU INTERMEDIAIRE – LA CIVILISATION, LA LITTERATURE ET LA GRAMMAIRE	5	3	40	60	100
4.	IV	23RL4C4	PART 1 LANGUAGE FRENCH - LE NIVEAU DE SUIVRE – LA CIVILISATION, LA LITTERATURE ET LA GRAMMAIRE	5	3	40	60	100
			Total	20	12			

PART – I – HINDI

Offered by The Department of Hindi

S.NO	SEM.	COURSE CODE	COURSE TITLE	HRS	CREDITS	CIA Mks	ESE Mks	TOT. MKs
1.	**I**	23DL1C1	PART 1 LANGUAGE HINDI - बोलचाल की हिंदी	5	3	40	60	100
2.	**II**	23DL2C2	PART 1 LANGUAGE HINDI - कार्यालयीन हिंदी	5	3	40	60	100
3.	**III**	23DL3C3	PART 1 LANGUAGE HINDI - हिंदी साहित्य का आदिकाल और भक्तिकाल	5	3	40	60	100
4.	**IV**	23DL4C4	PART 1 LANGUAGE HINDI - हिंदी साहित्य का आधुनिक काल	5	3	40	60	100
			Total	**20**	**12**			

PART – II -ENGLISH – 24 CREDITS

Offered by The Research Centre of English

S.NO	SEM.	COURSE CODE	COURSE TITLE	HRS	CREDITS	CIA Mks	ESE Mks	TOT. MKs
1.	**I**	23EL1LB	BASIC COMMUNICATIVE ENGLISH	5	3	40	60	100
2.		23EL1LI	INTERMEDIATE COMMUNICATIVE ENGLISH			40	60	
3.		23EL1LA	ADVANCED COMMUNICATIVE ENGLISH			40	60	
4.	**II**	23EL2LB	ENGLISH COMMUNICATION SKILLS	5	3	40	60	100
5.		23EL2LI	ENGLISH FOR EMPOWERMENT			40	60	
6.		23EL2LA	ENGLISH FOR CREATIVE WRITING			40	60	
7.	**III**	23EL3LN	ENGLISH FOR DIGITAL ERA	5	3	40	60	100
8.	**IV**	23EL4LN	ENGLISH FOR INTEGRATED DEVELOPMENT	5	3	40	60	100
			Total	**20**	**12**			

PART – III -MAJOR & ELECTIVES – 92 CREDITS

MAJOR CORE COURSES INCLUDING PRACTICALS : 60 CREDITS

B.SC. COMPUTER SCIENCE CURRICULUM (TANSCHE Grid)

First Year

Semester-I

Part	List of Courses	Credit	Hours per week (L/T/P)
Part-I	Language (23TL1C1/23RL1C1/23DL1C1)	3	5
Part-II	English (23EL1LB/23EL1LI/23EL1LA)	3	5
Part-III	23B1CC1 - Python Programming	5	5
	23B1CC2 – Practical I : Python Programming	5	5
	Elective Course (Generic) 23B1GE1 - Programming in C 23B1GE2 - Web Development	3	5
Part-IV	Skill Enhancement Course (NME) 23B1SE1 - Web Designing using HTML	2	2
	23B1FC – Problem Solving Techniques	2	2
	23UAD1ES - Value Education	1	1
		24	**30**

Semester-II

Part	List of Courses	Credit	Hours per week(L/T/P)
Part-I	Language 23TL2C2/23RL2C2/23DL2C2	3	5
Part-II	English (23EL2LB/23EL2LI/23EL2LA)	3	5
Part-III	23B2CC3– Data Structures and Algorithms	5	5
	23B2CC4 – Practical II: Data Structures using C++	5	5
	Elective Course (Discipline Specific) – 23B2EC1 - Object Oriented Programming in C++ 23B2EC2 - Computer System Architecture	3	5
Part-IV	Skill Enhancement Course (NME) 23B2SE2– Web Designing using HTML	2	2
	Skill Enhancement Course (Discipline Specific) 23B2SE3 -Web Designing Using HTML & CSS	2	2
	23UAD2ES - Value Education	1	1
		24	**30**

PART – IV –23 CREDITS

- NON MAJOR ELECTIVE FOUNDATION COURSE
- SKILL ENHANCEMENT COURSES
- VALUE EDUCATION ENVIRONMENTAL STUDIES
- INDUSTRIAL TRAINING

UG CREDIT DISTRIBUTION							
PART	Sem. I	Sem. II	Sem. III	Sem. IV	Sem. V	Sem. VI	Total Credits
Part I	3	3	3	3	-	-	12
Part II	3	3	3	3	-	-	12
Part III	13	13	13	13	22	18	92
Part IV	5	5	3	6	4	2	25
Part V	-	-	-	-	-	1	1
Total	23	23	22	25	26	21	142

ADD-ON CREDITS(OFF- CLASS)			
SEMESTER	COURSE TITLE	HRS.	CREDITS
I/II	Programming in C(offered in lieu of Computer Literacy course)	30	2
I	Online Self Learning Courses-Multidisciplinary Course For Arts	Online	1
II	ONLINE SELF LEARNING Course-Multidisciplinary course For Science	Online	1
III	Professional Ethics	15	1
IV	Personality Development & Gender Studies	15	1
V	Human Rights Education	15	1
V & VI	Cyber Security	Online	1
V & VI	ROSA Extension Activity		3
III to VI	Reading Culture	20 hrs/year	2
		TOTAL CREDITS	13

SKILL DEVELOPMENT, ENTREPRENEURSHIP, EMPLOYABILITY

I B.Sc. Computer Science
SEMESTER –I
For those who joined in 2023 onwards

PROGRAMME CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS/WEEK	CREDITS
UACS	23B1CC1	Python Programming	Major Core	5	5

COURSE DESCRIPTION

Python is an interpreted, high-level, general-purpose programming language. It provides program constructs that enable clear programming on both small and large scales.

COURSE OBJECTIVES

- To learn how to design and write dynamic python applications.
- To develop applications using arrays and strings.
- To learn how to use lists, tuples, and dictionaries in python programs
- To build real-world applications using Files.

UNITS

UNIT I: BASICS OF PYTHON PROGRAMMING (15 HRS)

Features of Python-History of Python-The Future of Python-Writing and Executing First Python Program-Literal Constants-Variables and Identifiers-Data Types- Input Operation-Comments-Reserved Words-Indentation- Operation and Expressions-Expression in Python –Operations on Strings-Other Data Types-Type Conversion.

UNIT II: DECISION CONTROL STATEMENTS (15 HRS)

Introduction to Decision Control Statements-Selection /Conditional Branching Statements-Basic Loop Structure /Iterative Statements-Nested Loops-The Break Statement-The Continue Statement-The Pass Statement-The Else Statement used with Loops.

UNIT III: ARRAYS AND STRINGS (15 HRS)

Arrays in Python : Array – Advantages of Array – Creating an Array – Indexing and slicing on Arrays – Processing the Arrays – Mathematical operations on Arrays.

Concatenating ,Appending ,and Multiplying Strings-String Formatting Operator-Build in String Methods and Functions-Slice Operation-Ord()and Chr() Function-Comparing String-Iterating String.

UNIT IV: FUNCTIONS AND MODULE (15 HRS)

Introduction –Function Declaration and Definition-Function Call-Variables Scope and Lifetime-The Return Statement-More On Defining Function-Lambda Functions or Anonymous Functions-Documentation Strings. Recursive Functions – Modules.

UNIT V: DATA STRUCTURES - FILE HANDLING (15 HRS)

Sequence-Lists-Functional Programming-Tuple-Sets-Dictionaries.
File Handling: Introduction - File Path-Types of Files-Opening and Closing Files-Reading and Writing Files-write() and writelines() methods – append() method – The read() and readline() methods – Opening files using with keyword – Splitting words – File Positions-Renaming and Deleting Files-Directory Methods.

DYNAMISM :(For CIA Only)

SELF STUDY :

UNIT I: Arithmetic Operators

UNIT II: DECISION CONTROL STATEMENTS

The Break Statement-The Continue Statement-The Pass Statement-The Else Statement used with Loops.

TEXT BOOK:

1. Python Programming using Problem Solving Approach, Reema Thareja, Published By Oxford Higher Education, First Edition 2017.
2. ***Core Python Programming,*** Dr. R. Nageswara Rao, Dream Tech Publishers, First Edition 2017

Chapters : 3, 4, 5, 6, 7, 8

REFERENCES:

1. Problem Solving and Python Programming, S.A. Kulkarni, Published By Yesdee,2017
2 .Python for Software Design How to Think Like a computer scientist, Allen B.Downey Cambridge University Press,2018
3 .Introduction to Programming using Python ,Y.Daniel Liang, Published By Pearson,2018.

WEB REFERENCES:

1.http://spoken-tutorial.org/tutorial-search/python
2.https://docs.python.org

EVALUATION PATTERN

Levels	C1	C2	C3	C4	C5	Total Scholastic Marks	Non Scholastic Marks C6	CIA Total	% of Assessment
	T1 10 Mks.	T2 10 Mks.	Quiz 5 Mks.	Assignment 5 Mks	OBT/ PPT 5 Mks	35 Mks.	5 Mks.	40Mks.	
K1	2	2	-	-	-	4	-	4	10 %
K2	2	2	5	-	-	9	-	9	22.5 %
K3	3	3	-	-	5	11	-	11	27.5 %
K4	3	3	-	5	-	11	-	11	27.5 %
Non Scholastic	-	-	-	-	-		5	5	12.5 %
Total	10	10	5	5	5	35	5	40	100 %

CIA	
Scholastic	35
Non Scholastic	5
TOTAL	40

✔ **The levels of CIA Assessment based on Revised Bloom's Taxonomy are :**

K1- Remember, **K2-**Understand, **K3-**Apply, **K4-**Analyse

SCHOLASTIC					NON - SCHOLASTIC	MARKS		
C1	C2	C3	C4	C5	C6	CIA	ESE	Total
10	10	5	5	5	5	40	60	100

COURSE CONTENTS &LECTURE SCHEDULE

Module No.	Topic	No. of Lectures	Content Delivery Method	Teaching Aids
UNIT I : [15 HRS]				
1.1	Features of Python-History of Python-The Future of Python-Writing and Executing First Python Program-Literal Constants-Variables and Identifiers-	6	Lecture	PPT &Smart Board
1.2	Data Types- Input Operation-Comments-Reserved Words-Indentation-	6	Chalk & Talk Lecture	Black Board
1.3	Operation and Expressions-Expression in Python –Operations on Strings-Other Data Types-Type Conversion.	3	Chalk & Talk Lecture	Black Board
UNIT II : [15 HRS]				
2.1	Introduction to Decision Control Statements-Selection /Conditional Branching Statements-Basic Loop Structure /Iterative Statements-Nested Loops-	8	Lecture	PPT &Smart Board
2.2	The Break Statement-The Continue Statement-The Pass Statement-The Else Statement used with Loops.	7	Chalk & Talk Lecture	Black Board
UNIT III : [15 HRS]				
3.1	Arrays in Python : Array – Advantages of Array – Creating an Array – Indexing and slicing on Arrays – Processing the Arrays – Mathematical operations on Arrays.	6	Lecture	PPT &Smart Board

3.2	Concatenating ,Appending ,and Multiplying Strings-String Formatting Operator-	6	Lecture	PPT &Smart Board
3.3	Built in String Methods and Functions-Slice Operation-Ord()and Chr() Function-Comparing String-Iterating String	3	Chalk & Talk Lecture	Black Board
UNIT IV : [15 HRS]				
4.1	Introduction –Function Declaration and Definition-Function Call-Variables Scope and Lifetime.	6	Lecture	PPT &Smart Board
4.2	The Return Statement-More On Defining Function-Lambda Functions or Anonymous Functions-Documentation Strings. Recursive Functions – Modules.	6	Chalk & Talk Lecture	Black Board
4.3	Built in Function-Built in Class Attributes-Garbage Collection-Class Methods-Static Methods	3	Chalk & Talk Lecture	Black Board
UNIT V : [15 HRS]				
5.1	Sequence-Lists-Functional Programming-Tuple-Sets-Dictionaries	6	Lecture	PPT &Smart Board
5.2	File Handling: Introduction - File Path-Types of Files-Opening and Closing Files-Reading and Writing Files	6	Lecture	PPT &Smart Board
5.3	write() and writelines() methods – append() method – The read() and readline() methods – Opening files using with keyword – Splitting words – File Positions-Renaming	3	Chalk & Talk Lecture	Black Board

	and Deleting Files-Directory Methods.			

COURSE OUTCOMES (CO)

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

NO.	COURSE OUTCOMES	KNOWLEDGE LEVEL (ACCORDING TO REVISED BLOOM'S TAXONOMY)	PSOs ADDRESSED
CO 1	Learn the basics of python, Do simple programs on python.	K1	PSO1& PSO2
CO 2	Solve problems requiring the writing of well-documented programs in the Python language, including use of the logical constructs of that language.	K2, K3, K4	PSO2& PSO3
CO 3	Implementing the use of arrays and strings in various application.	K2 & K3	PSO3,PSO5
CO 4	Identify the structure and components of a python program. Implement Modular programs using Functions and Modules.	K1 & K3	PSO4
CO 5	Apply lists, tuples, and dictionaries to develop robust programs in python. Usage of File handlings in python, Concept of reading and writing files, Do programs using files.	K2 & K4	PSO6

Mapping COs Consistency with PSOs

CO/ PSO	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6
CO1	3	3	2	1	2	1
CO2	2	3	3	1	2	1
CO3	2	2	3	2	3	1
CO4	2	2	1	3	2	1
CO5	2	2	1	2	1	3

Mapping COs Consistency with POs

CO/ PO	PO 1	PO 2	PO 3	PO 4
CO1	3	2	2	1
CO2	3	2	1	2
CO3	2	3	2	1
CO4	2	3	3	1
CO5	2	1	1	3

Note: ♦ Strongly Correlated – **3** ♦ Moderately Correlated – **2**
♦ Weakly Correlated -**1**

COURSE DESIGNER: Dr.A.Vimala

Forwarded By

(Dr. S. Vidya)
HOD'S Signature& Name

SKILL DEVELOPMENT, ENTREPRENEURSHIP, EMPLOYABILITY

I B.Sc. Computer Science
I SEMESTER
(For those who joined in 2023 onwards)

PROGRAMME CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS/ WEEK	CREDITS
UACS	23B1CC2	LAB II – PYTHON PROGRAMMING	MAJOR LAB	5	5

COURSE DESCRIPTION

This course focus on imparting the practical knowledge of using Python Language for problem solving with basic constructs and functions. Also it aims to provide a clear understanding of the compound data using lists, tuples and dictionaries.

COURSE OBJECTIVES

- To write, test and debug simple Python programs.
- To use functions and various string operations to write efficient

Python programs.

- To read and write data from/to files in Python.

SYLLABUS

Programs to be written using the following concepts.

1. Simple Programs
2. Data types/data type conversion
3. Decision control and conditional branching
4. Arrays
5. Various string operations
6. Functions and Modules
7. Sequence & lists
8. Files

EVALUATION PATTERN

SCHOLASTIC		NON - SCHOLASTIC	MARKS		
C1	C2	C3	CIA	ESE	Total
20	15	5	40	60	100

C1 – Average of Two Model Tests

C2 – Average of class Performance and Record work

C3 – Non - Scholastic

COURSE OUTCOMES (CO)

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

NO.	COURSE OUTCOMES	KNOWLEDGE LEVEL (ACCORDING TO REVISED BLOOM'S TAXONOMY)	PSOs ADDRESSED
CO1	Write programs using basic programming constructs	K1,K3,K5	PSO1, PSO2 & PSO4
CO 2	Express different Decision Making statements and Functions.	K2	PSO1, PSO2 & PSO3
CO 3	Implement Arrays and Strings, Math functions,	K2, K3, K4	PSO3 & PSO4
CO 4	Develop applications using Functions and modules.	K2, K3 & K5	PSO5 & PSO6
CO5	Write programs that List and Tuple in Python programs.	K2,K3,K4	PSO3, PSO4 & PSO6

Mapping COs Consistency with PSOs

CO/ PSO	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6
CO1	**3**	3	**2**	3	1	2
CO2	3	**3**	3	2	1	1
CO3	2	1	3	**3**	1	2
CO4	2	2	1	**1**	3	3
CO5	2	2	3	**3**	1	3

Mapping COs Consistency with Pos

CO/ PO	PO 1	PO 2	PO 3	PO 4
CO1	**3**	**1**	**2**	**2**
CO2	**2**	**3**	**1**	**1**
CO3	**2**	**2**	**1**	**3**
CO4	**2**	**3**	**2**	**1**
CO5	**2**	**2**	**3**	**1**

Note: ♦ Strongly Correlated – **3** ♦ Moderately Correlated – **2**
♦ Weakly Correlated -**1**

COURSE DESIGNER:
Dr.A.Vimala

Forwarded By

(Dr. S.Vidya)
HOD'S Signature& Name

SKILL DEVELOPMENT, ENTREPRENEURSHIP, EMPLOYABILITY

I B.Sc. Mathematics

SEMESTER – I

For those who joined in 2023 onwards

PROGRAMME CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS/ WEEK	CREDITS
UAMA/USMA	23B1GE1	PROGRAMMING IN C	GENERAL ELECTIVE	5	3

COURSE DESCRIPTION

This course helps to provide the fundamental knowledge of a programming language and provides skills in designing and writing simple programs in C.

COURSE OBJECTIVES

- To introduce and form a firm foundation in programming
- To stress the importance of clarity , simplicity and the efficiency in writing programs
- To enable the students to learn the basic concepts of data input, output, operators, expressions, control statements , arrays, handling of strings and user – defined functions.

UNIT I: C FUNDAMENTALS, OPERATORS AND EXPRESSIONS [15 HRS.]

Character Set – C Tokens – Keywords and Identifiers – Constants – Variables – Data types – Declaration of Variables – Assigning Values to Variables – Defining Symbolic Constants – Operators & Expressions : Introduction – Arithmetic of operators – Relational operators – Logical operators – Assignment operators – Increment and decrement operators – Conditional operator – Bitwise operators – Special operators – Arithmetic expressions – Evaluation of expressions – Precedence of arithmetic operators – Some computational problems – Type conversions in expressions – Operator precedence and associativity – Mathematical functions.

UNIT II: DATA INPUT, OUTPUT & CONTROL STATEMENTS [15 HRS.]

Reading a character – Writing a character – Formatted input – Formatted output - Decision Making and Branching : IF Statement – the IF ELSE statement – Nesting of IF..ELSE statements – The ELSE IF ladder – The switch statement - The ?: Operator – the GOTO statement – Decision Making and Looping : The WHILE statement – the DO statement – the FOR statement – Jumps in loops.

UNIT III: ARRAYS [15 HRS.]

One Dimensional Array – Two Dimensional Arrays – Initializing Two Dimensional Arrays

UNIT IV: HANDLING OF STRINGS [15 HRS.]

Handling of Character Strings : Declaring and Initializing String Variables – Reading String from Terminal – Writing Strings to Screen – Arithmetic Operations on Characters – Putting Strings together – Comparison of two Strings – String Handling Functions – Table of Strings

UNIT V: USER – DEFINED FUNCTIONS [15 HRS.]

Need for User-Defined Functions – A Multi-function Program – Form of C Functions – Return Values and their Types – Calling a Function – Category of Functions – No Arguments and No Return Values – Arguments but No Return Values – Arguments with Return Values – Handling of Non-Integer Functions – Nesting of Functions – Recursion – Functions with Arrays - the scope and lifetime of variables in functions.

TEXT BOOK:

1. E. Balagurusamy - Programming in ANSI C - Tata McGraw-Hill Publishing Company Ltd. – Sixth Edition - 2014 **(NO CASE STUDY**)

UNIT I : Chapters: 2, 3
UNIT II : Chapters: 4, 5, 6
UNIT III : Chapter: 7: Section 7.1 – 7.6
UNIT IV : Chapter 8
UNIT V : Chapter: 9

REFERENCES:

1. Byron S. Gotfried - Theory and problems of programming with C (Schaums Series) Tata – McGraw Hills Edition - 1991.
2. Kernighan & Brian.W - The C programming language, Prentice – Hall of India, Private Limited, New Delhi - 1999.

LIST OF PROGRAMS

1) To find the area of a square
2) To find the area of a circle
3) To find the area of a triangle
4) To find Simple interest
5) Solving Quadratic equations
6) Checking primes
7) Arranging numbers in ascending order
8) Reversing digits of a number
9) Finding the values of ncr, npr.
10) Palindrome
11) Matrix addition
12) Matrix multiplication
13) Transpose of a matrix

14) Trace of a matrix
15) Alphabetizing names
16) Mean and Standard deviation
17) To find Correlation Coefficient
18) Straight line fitting by the method of least squares
19) To print n th Fibonacci number
20) To read a series of words form a terminal

EVALUATION PATTERN

Levels	C1	C2	C3	C4	C5	Total Scholastic Marks	Non Scholastic Marks C6	CIA Total	% of Assessment
	T1 10 Mks.	T2 10 Mks.	Quiz 5 Mks.	Assignment 5 Mks	OBT/PPT 5 Mks	35 Mks.	5 Mks.	40Mks.	
K1	2	2	-	-	-	4	-	4	10 %
K2	2	2	5	-	-	9	-	9	22.5 %
K3	3	3	-	-	5	11	-	11	27.5 %
K4	3	3	-	5	-	11	-	11	27.5 %
Non Scholastic	-	-	-	-	-		5	5	12.5 %
Total	10	10	5	5	5	35	5	40	100 %

CIA	
Scholastic	35
Non Scholastic	5
TOTAL	40

✔ **The levels of CIA Assessment based on Revised Bloom's Taxonomy are :**

K1- Remember, **K2-**Understand, **K3-**Apply, **K4-**Analyse

	SCHOLASTIC				NON - SCHOLASTIC	MARKS		
C1	C2	C3	C4	C5	C6	CIA	ESE	Total
10	10	5	5	5	5	40	60	100

COURSE DESIGNER:

Dr.K.RosemaryEuphrasia

Forwarded by

(Dr. S. Vidya)

HOD'S Signature& Name

SKILL DEVELOPMENT, ENTREPRENEURSHIP, EMPLOYABILITY

I B.Sc. Mathematics

SEMESTER – I

For those who joined in 2023 onwards

PROGRAMME CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS/WEEK	CREDITS
UAMA/USMA	23B1GE2	WEB DEVELOPMENT	GENERAL ELECTIVE	5	3

COURSE DESCRIPTION

This Course introduces basic web design using Hypertext Markup Language (HTML). And this course provides knowledge to plan and design effective web pages with different text formatting and images to create website.

COURSE OBJECTIVES

- To enhance the knowledge of the students in effective webpage designing.
- To provide skills to sharply focus on needed information to be presented in a website.
- To improve the quality of the students by giving strong base in fundamental and advanced concepts.
- To give courage to face the real-world scenarios as it is practical oriented
- To inculcate the ability to explain, analyze, identify and define the technology required to build and implement a web site.

UNITS

UNIT I: ESSENTIAL HTML (15 Hrs)

The history of HTML – HTML – Browser Wars – Creating a Web Page – Installing a Web Page – Viewing a Web Page – Checking Your Web Page.<!DOCTYPE> -<HTML> – Creating The structures of a Web page's: Head and Body – Setting Web Page Colors – Adding Text to a Web Page - basic Text formatting - <!..> Comments and server-Side

includes - </Body>- </HTML>

UNIT II: WORKING WITH TEXT (15Hrs)

Formatting with HTML tags – Physical HTML styles – Logical HTML styles – Setting Fonts – Headings - some remove tags - Displaying Plain text - <H1> Through <H6>- Creating Web Page Headings - <B> -<I> - <TT> - <U> - <S> and <Strike> - <BIG> - -<SMALL> - <SUB> - <SUP> -<EM> - <Strong> - <CODE> - <SAMP> -<KBD> - <VAR> - <DFN> - <CITE> - <ABBR> - <Acronym> - <FONT> – setting font point size directly- <BASEFONT> - <Q> - <Blink> - <INS> - <DEL> - <Address>- <BDO> – Displaying Special Characters: Character Entities

UNIT III: PRESENTING AND ARRANGING TEXT (15 Hrs)

Arranging text - Using <DIV> and <SPAN> - Using Layers – More Formatting Power – preformatting Text - Avoiding Plain text Wrapping -
 -<NOBR> - - <WBR> - <P> - <HR> - <CENTER><BlockQuote> - <PRE> - <MULTICOL> - <SPACER> - <MARQUEE> - <DIV> - <SPAN> - Formatting text with tables–- <Layer> - <NOLAYER> - <ILAYER> Positioning text with <DIV> - <Ruby>and <RT> Creating Ruby (Captioned) Text.

UNIT IV: CREATING LIST (15 Hrs)

Creating List - <LI> - <UL> - <OL>– Creating Customized Unordered lists - Creating Customized ordered lists - <DL>, <DT> and DD> - Creating Definition Lists – Nesting Lists - <DIR> and <Menu>- Deprecated Lists. The Parts of a table – Creating a Table – Adding Border – Padding Your Cells – Widening the cell spacing – Aligning your data Horizontally – Aligning your data vertically – Spanning Columns – Spanning Rows- Setting Colors.

UNIT V: TABLES (15 HRS)

<TABLE> - <TR>- <TH> - <TD> - <CAPTION> - setting table Border Widths – Setting Cell padding – Setting cell spacing – Setting table column and widths – Setting table Colors – Aligning table in Web Pages – Aligning Cell text – Using images in tables – Nesting tables - Spanning multiple columns - Spanning multiple rows - <THEAD>, <TBODY>, and <TFOOT> - Grouping and Formatting Rows – Formatting text with tables.

DYNAMISM (FOR CIA ONLY)

UNIT II – Displaying special characters (2 hrs)

UNIT III – Attributes of Marquee tag, Creating Ruby text (2 hrs)

UNIT IV – Nested list creation (2hrs)

UNIT V – – Nesting tables - Spanning multiple columns - Spanning multiple rows (4 hrs)

TEXT BOOK

1. ***HTML Black Book, Steven Holzner***, Dreamtech Press, 2000

Chapters: 1, 2, 3, 5, 6,7

REFERENCE BOOKS

1. ***Mastering HTML, CSS &Javascript web Publishing,*** Laura Lemay, Rafe Colburn & Jennifer Kyrnin, BPB publications, 2016

2. ***HTML & CSS the complete reference,*** Thomas A Powell, 5th edition, McGrawHill, New Delhi, 2017.

3. **Official Website of Wordpress**

COURSE CONTENTS & LECTURE SCHEDULE

Module No.	Topic	No. of Lectures	Content Delivery Method	Teaching Aids
Unit -1	**ESSENTIAL HTML**			
1.1	The history of HTML – HTML – Browser Wars – Creating a Web Page – Installing a Web Page – Viewing a Web Page – Checking Your Web Page	5	Chalk & Talk	Black Board
1.2	.<!DOCTYPE> -<HTML> – Creating The structures of a Web page's: Head and Body – Setting Web Page Colors	5	Chalk & Talk	Black Board
1.3	– Adding Text to a Web Page - basic Text formatting - <!..> Comments and server-Side includes - </Body>- </HTML>	5	Demonstration	LCD
UNIT II: WORKING WITH TEXT				
2.1	Formatting with HTML tags – Physical HTML styles – Logical HTML styles – Setting Fonts – Headings - some remove tags - Displaying Plain text - <H1> Through <H6>- Creating Web Page Headings - <B> -<I> - <TT> - <U> - <S> and <Strike> - <BIG> - -<SMALL> - <SUB> - <SUP> -<EM> - <Strong> - <CODE> -	8	Demonstration	LCD

2.2	<SAMP> -<KBD> - <VAR> - <DFN> - <CITE> - <ABBR> - <Acronym> - <FONT> – setting font point size directly- <BASEFONT> - <Q> - <Blink> - <INS> - <DEL> - <Address>- <BDO> – Displaying Special Characters: Character Entities.	7	Demonstration	LCD
UNIT III: PRESENTING AND ARRANGING TEXT				
3.1	Arranging text - Using <DIV> and <SPAN> - Using Layers – More Formatting Power – preformatting Text - Avoiding Plain text Wrapping - -<NOBR> - - <WBR> - <P> - <HR> - <CENTER><BlockQuote> - <PRE> - <MULTICOL> - <SPACER> - <MARQUEE> - <DIV> - <SPAN> - Formatting text with tables–-	8	PPT	LCD
3.2	<Layer> - <NOLAYER> - <ILAYER> Positioning text with <DIV> - <Ruby>and <RT> Creating Ruby (Captioned) Text.	7	Demonstration	LCD
UNIT IV: CREATING LISTAND TABLES				
4.1	Creating List - <LI> - <UL> - <OL>– Creating Customized Unordered lists - Creating Customized ordered lists - <DL>, <DT> and DD> - Creating Definition Lists – Nesting Lists - <DIR> and <Menu>- Deprecated Lists. The Parts of a table – Creating a Table – Adding Border – Padding Your Cells – Widening the cell spacing – Aligning your data Horizontally – Aligning your data vertically – Spanning Columns – Spanning Rows- Setting Colors.	8	Demonstration	LCD
4.2	<TABLE> - <TR>- <TH> - <TD> - <CAPTION> - setting table Border Widths – Setting Cell padding – Setting cell spacing – Setting table column and widths – Setting table Colors – Aligning table in Web Pages – Aligning Cell text – Using images in tables – Nesting tables - Spanning multiple columns - Spanning multiple rows - <THEAD>, <TBODY>, and <TFOOT> - Grouping and Formatting Rows – Formatting text with tables.	7	Demonstration	LCD

UNIT V: WORKING WITH FRAMES				
5.1	What are style sheets?-External style sheets - Internal style sheets - Inline styles- creating style classes- Background properties-	8	Demonstration	PPT &Smart Board
5.2	Position and block properties-Font properties-List properties-Text properties-Table properties.	7	Chalk & Talk Lecture	Black Board

EVALUATION PATTERN

Levels	C1	C2	C3	C4	C5	Total Scholastic Marks	Non Scholastic Marks C6	CIA Total	% of Assessment
	T1 10 Mks.	T2 10 Mks.	Quiz 5 Mks.	Assignment 5 Mks	OBT/PPT 5 Mks	35 Mks.	5 Mks.	40Mks.	
K1	2	2	-	-	-	4	-	4	10 %
K2	2	2	5	-	-	9	-	9	22.5 %
K3	3	3	-	-	5	11	-	11	27.5 %
K4	3	3	-	5	-	11	-	11	27.5 %
Non Scholastic	-	-	-	-	-		5	5	12.5 %
Total	10	10	5	5	5	35	5	40	100 %

CIA	
Scholastic	35
Non Scholastic	5

TOTAL	40

✔ **The levels of CIA Assessment based on Revised Bloom's Taxonomy are :**

K1- Remember, **K2-**Understand, **K3-**Apply, **K4-**Analyse

	SCHOLASTIC				NON - SCHOLASTIC	MARKS		
C1	C2	C3	C4	C5	C6	CIA	ESE	Total
10	10	5	5	5	5	40	60	100

COURSE OUTCOMES (CO)

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

No.	Course Outcome	Knowledge Level (According to Bloom's Taxonomy)	PSOs ADDRESSED	POs ADDRESSED
CO 1	Create simple web page using physical tags	K1	PSO1	PO1
CO 2	Present the information in standard form in a web page using structure tags supported by the browsers	K2	PSO1	PO2
CO 3	Design the layout for a web page using browser support tags	K2&K3	PSO2& PSO4	PO2
CO 4	Develop a web site with Tables and list of items	K3	PSO3	PO3
CO 5	Grouping and Formatting Rows – Formatting text with tables.	K2&K3	PSO5	PO4

Mapping COs Consistency with PSOs

CO/ PSO	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO1	**3**	**2**	**1**	**2**	**1**	**2**	**2**
CO2	**3**	**2**	**2**	**1**	**2**	**1**	**2**
CO3	**2**	**3**	**2**	**3**	**2**	**1**	**2**
CO4	**2**	**1**	**3**	**1**	**1**	**1**	**1**
CO5	**1**	**2**	**1**	**2**	**3**	**2**	**1**

Note: ♦ Strongly Correlated – **3** ♦ Moderately Correlated – **2**

♦ Weakly Correlated **-1**

Mapping of COs with POs

CO/ PSO	PO1	PO2	PO3	PO4
CO1	**3**	2	1	2
CO2	2	**3**	1	1
CO3	2	**3**	2	1
CO4	2	1	**3**	2
CO5	1	2	1	**3**

COURSE DESIGNER:

Dr.K.RosemaryEuphrasia

Forwarded by

(Dr. S. Vidya)

HOD'S Signature& Name

SKILL DEVELOPMENT, ENTREPRENEURSHIP, EMPLOYABILITY

I B.Sc. Computer Science

SEMESTER –I

For those who joined in 2023 onwards

PROGRAMME CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS/ WEEK	CREDITS
UACS	23B1SE1	WEB DESIGNING USING HTML	(SEC I) (Non Major Elective) LAB	2	2

COURSE DESCRIPTION

This Course introduces basic web design using Hypertext Markup Language (HTML). And this course provides knowledge to plan and design effective web pages with different text formatting and images to create website.

COURSE OBJECTIVES

- To enhance the knowledge of the students in effective webpage designing.
- To provide skills to sharply focus on needed information to be presented in a website.
- To improve the quality of the students by giving strong base in fundamental and concepts.
- To give courage to face the real-world scenarios as it is practical oriented
- To inculcate the ability to explain, analyze, identify and define the technology required to build and implement a web site.

UNITS

UNIT I: ESSENTIAL HTML (6 Hrs)

The history of HTML .<!DOCTYPE> -<HTML> – Creating The structures of a Web page's: Head and Body – Setting Web Page Colors – Adding Text to a Web Page - basic Text formatting - Comments and server-Side includes - </Body>- </HTML>

UNIT II: WORKING WITH TEXT (6 Hrs)

Formatting with HTML tags – Physical HTML styles – Logical HTML styles – Setting Fonts – Headings - some remove tags - Displaying Plain text - <H1> Through <H6>- Creating Web Page Headings - <B> -<I> - <TT> - <U> - <S> and <Strike> - <BIG> - -<SMALL> - <SUB> - <SUP> -<EM> - <Strong> - <CODE> - <CITE> - <ABBR> - <Acronym> -

<FONT> – setting font point size directly- <BASEFONT> - <Q> - <Blink> - <INS> - <DEL> - <Address>- <BDO> – Displaying Special Characters: Character Entities

UNIT III: PRESENTING AND ARRANGING TEXT, IMAGE and LINK (6 Hrs)

Arranging text - Using <DIV> and <SPAN> - Using Layers – More Formatting Power – preformatting Text - Avoiding Plain text Wrapping -
 -<NOBR> - - <WBR> - <P> - <HR> - <CENTER><BlockQuote> - <PRE> - <MARQUEE> - <DIV> - <SPAN> - Formatting text with tables–- <Layer> - <NOLAYER> - <ILAYER>

UNIT IV: CREATING LIST (6 Hrs)

Creating List - <LI> - <UL> - <OL>– Creating Customized Unordered lists - Creating Customized ordered lists - <DL>, <DT> and DD> - Creating Definition Lists – Nesting Lists - <DIR> and <Menu>- Deprecated Lists.

UNIT V: TABLES (6 Hrs)

<TABLE> - <TR>- <TH> - <TD> - <CAPTION> - setting table Border Widths – Setting Cell padding – Setting cell spacing – Setting table column and widths – Setting table Colors – Aligning table in Web Pages – Aligning Cell text – Using images in tables – Nesting tables - Spanning multiple columns - Spanning multiple rows - <THEAD>, <TBODY>, and <TFOOT> - Grouping and Formatting Rows – Formatting text with tables.

TEXT BOOK

2. *HTML Black Book, Steven Holzner*, Dreamtech Press, 2000

Chapters: 1, 2, 3, 5, 6,7

REFERENCE BOOKS

4. *Mastering HTML, CSS &Javascript web Publishing,* Laura Lemay, Rafe Colburn & Jennifer Kyrnin, BPB publications, 2016
5. *HTML & CSS the complete reference,* Thomas A Powell, 5th edition, McGrawHill, New Delhi, 2017.

COURSE CONTENTS & LECTURE SCHEDULE

Module No.	Topic	No. of Lectures	Content Delivery Method	Teaching Aids
Unit -1 ESSENTIAL HTML				
1.1	.<!DOCTYPE> -<HTML> – Creating The structures of a Web page's: Head and Body – Setting Web Page Colors	3	Chalk & Talk	Black Board
1.2	– Adding Text to a Web Page - basic Text formatting - <!..> Comments and server-Side includes - </Body>- </HTML>	3	Demonstration	LCD
UNIT II: WORKING WITH TEXT				
2.1	Formatting with HTML tags – Physical HTML styles – Logical HTML styles – Setting Fonts – Headings - some remove tags - Displaying Plain text - <H1> Through <H6>- Creating Web Page Headings - <B> -<I> - <TT> - <U> - <S> and <Strike> - <BIG> - -<SMALL> - <SUB> - <SUP> -<EM> - <Strong> - <CODE> -	3	Demonstration	LCD
2.2	<CITE> - <ABBR> - <Acronym> - <FONT> – setting font point size directly- <BASEFONT> - <Q> - <Blink> - <INS> - <DEL> - <Address>- <BDO> – Displaying Special Characters: Character Entities.	3	Demonstration	LCD
UNIT III: PRESENTING AND ARRANGING TEXT				
3.1	Arranging text - Using <DIV> and <SPAN> - Using Layers – More Formatting Power – preformatting Text - Avoiding Plain text Wrapping -- -<NOBR> - - <WBR> - <P> - <HR> - <CENTER><BlockQuote> - <PRE> - <MULTICOL> - <SPACER> - <MARQUEE> - <DIV> - <SPAN> -	3	PPT	LCD
3.2	Use <img> and <a> tag	3	Demonstration	LCD

UNIT IV: CREATING LISTS				
4.1	Creating List - <LI> - <UL> - <OL>– Creating Customized Unordered lists - Creating Customized ordered lists - <DL>, <DT> and DD> -	3	Demonstration	LCD
4.2	Creating Definition Lists – Nesting Lists - <DIR> and <Menu>- Deprecated Lists.	3	Demonstration	LCD
UNIT V: WORKING WITH TABLES				
5.1	Setting table Border Widths – Setting Cell padding – Setting cell spacing – Setting table column and widths	3	Demonstration	PPT &Smart Board
5.2	Setting table Colors – Aligning table in Web Pages – Aligning Cell text – Using images in tables – Nesting tables - Spanning multiple columns - Spanning multiple rows - <THEAD>, <TBODY>, and <TFOOT> - Grouping and Formatting Rows – Formatting text with tables.	3	Chalk & Talk Lecture	Black Board

EVALUATION PATTERN

SCHOLASTIC		NON - SCHOLASTIC	MARKS		
C1	**C2**	**C3**	**CIA**	**ESE**	**Total**
20	**15**	**5**	**40**	**60**	**100**

C1 – Average of Two Model Tests

C2 – Average of class Performance and Record work

C3 – Non - Scholastic

COURSE OUTCOMES (CO)

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

No.	Course Outcome	Knowledge Level (According to Bloom's Taxonomy)	PSOs ADDRESSED	POs ADDRESSED
CO 1	Create simple web page using physical tags	K1	PSO1	PO1
CO 2	Present the information in standard form in a web page using different formatting tags	K2	PSO1	PO2
CO 3	Design the layout for a web page using image and links	K2&K3	PSO2& PSO4	PO2
CO 4	Develop a web site with a list of items	K3	PSO3	PO3
CO 5	Grouping and Formatting tables, – Formatting text with tables.	K2&K3	PSO5	PO4

Mapping COs Consistency with PSOs

CO/PSO	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	3	2	1	2	1	2	2
CO2	3	2	2	1	2	1	2
CO3	2	3	2	3	2	1	2
CO4	2	1	3	1	1	1	1
CO5	1	2	1	2	3	2	1

Note: ♦ Strongly Correlated – 3 ♦ ModeratelyCorrelated – 2

♦ WeaklyCorrelated -1

Mapping of COs with POs

CO/ PSO	PO1	PO2	PO3	PO4
CO1	3	2	1	2
CO2	2	3	1	1
CO3	2	3	2	1
CO4	2	1	3	2
CO5	1	2	1	3

COURSE DESIGNER:

Dr.G.Germine Mary

Forwarded By

(Dr. S. Vidya)

HOD'S Signature& Name

SKILL DEVELOPMENT, ENTREPRENEURSHIP, EMPLOYABILITY

I B.Sc. Computer Science

SEMESTER –I

For those who joined in 2023 onwards

PROGRAMME CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS/ WEEK	CREDITS
UACS	23B1FC	Problem Solving Techniques	FOUNDATION COURSE	2	2

COURSE DESCRIPTION

This course aims to provide basic knowledge to understand the Fundamental Concepts of Computer Science and Methodology of solving problems.

COURSE OBJECTIVES

- Familiarize with writing of algorithms, fundamentals of C and philosophy of problem solving.
- Implement different programming constructs and decomposition of problems into functions.
- Use data flow diagram, Pseudo code to implement solutions.
- Define and use of arrays with simple applications
- Understand about operating system and their uses

SYLLABUS

UNIT I :

Introduction: History, characteristics and limitations of Computer. Hardware/Anatomy of Computer: CPU, Memory, Secondary storage devices, Input Devices and Output devices. Types of Computers: PC, Workstation, Minicomputer, Main frame and Supercomputer. Software: System software and Application software. **Programming Languages:** Machine language, Assembly language, High-level language, 4 GL and 5GL-Features of good programming language. Translators: Interpreters and Compilers.

UNIT II :

Data: Data types, Input, Processing of data, Arithmetic Operators, Hierarchy of operations and Output. Different phases in Program Development Cycle (PDC).**Structured Programming: Algorithm:** Features of good algorithm, Benefits and drawbacks of algorithm. **Flowcharts:** Advantages and limitations of flowcharts, when to use flowcharts, flowchart symbols and types of flowcharts.**Pseudocode:** Writing a pseudocode. Coding,

documenting and testing a program: Comment lines and types of errors. **Program design:** Modular Programming.

UNIT III :

Selection Structures:

Relational and Logical Operators -Selecting from Several Alternatives – Applications of Selection Structures. **Repetition Structures:** Counter Controlled Loops –Nested Loops– Applications of Repetition Structures.

UNIT IV :

Data: Numeric Data and Character Based Data. **Arrays:** One Dimensional Array - Two Dimensional Arrays – Strings as Arrays of Characters.

UNIT V :

Data Flow Diagrams: Definition, DFD symbols and types of DFDs. **Program Modules:** Subprograms-Value and Reference parameters- Scope of a variable - Functions – Recursion. **Files:** File Basics-Creating and reading a sequential file- Modifying Sequential Files.

Text books :

- **Stewart Venit,** "Introduction to Programming: Concepts and Design", Fourth Edition, 2010, Dream Tech Publishers.

Web Resource:

- https://www.codesansar.com/computer-basics/problem-solving-using-computer.htm
- http://www.nptel.iitm.ac.in/video.php?subjectId=106102067
- http://utubersity.com/?page_id=876

EVALUATION PATTERN

Levels	C1	C2	C3	C4	C5	Total Scholastic Marks	Non Scholastic Marks C6	CIA Total	% of Assessment
	T1 10 Mks.	T2 10 Mks.	Quiz 5 Mks.	Assignment 5 Mks	OBT/PPT 5 Mks	35 Mks.	5 Mks.	40Mks.	
K1	2	2	-	-	-	4	-	4	10 %
K2	2	2	5	-	-	9	-	9	22.5 %
K3	3	3	-	-	5	11	-	11	27.5 %
K4	3	3	-	5	-	11	-	11	27.5 %
Non Scholastic	-	-	-	-	-		5	5	12.5 %
Total	10	10	5	5	5	35	5	40	100 %

CIA	
Scholastic	35
Non Scholastic	5
TOTAL	40

✔ **The levels of CIA Assessment based on Revised Bloom's Taxonomy are :**

K1- Remember, **K2-**Understand, **K3-**Apply, **K4-**Analyse

	SCHOLASTIC				NON - SCHOLASTIC	MARKS		
C1	C2	C3	C4	C5	C6	CIA	ESE	Total
10	10	5	5	5	5	40	60	100

COURSE OUTCOMES (CO)

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

No.	Course Outcome	Knowledge Level(According to Bloom's Taxonomy)	PSOs ADDRESSED	POs ADDRESSED
CO 1	Study the basic knowledge of Computers. Analyze the programming languages.	K2	PSO1	PO1
CO 2	Study the data types and arithmetic operations. Know about the algorithms. Develop program using flow chart and pseudo code.	K3	PSO2 & PSO3	PO2
CO 3	Determine the various operators. Explain about the structures. Illustrate the concept of Loops	K4	PSO6	PO3
CO 4	Study about Numeric data and character-based data. Analyze about Arrays.	K3	PSO5	PO3
CO 5	Explain about DFD Illustrate program modules. Creating and reading Files	K3	PSO4	PO4

Mapping COs Consistency with PSOs

CO/ PSO	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6
CO1	**3**	**2**	**2**	**2**	**1**	**2**
CO2	**2**	**3**	**3**	**2**	**2**	**1**
CO3	**2**	**1**	**2**	**2**	**2**	**3**
CO4	**2**	**2**	**2**	**1**	**3**	**2**
CO5	**2**	**2**	**2**	**3**	**1**	**1**

Note: ♦ Strongly Correlated – **3**

♦ ModeratelyCorrelated – **2**

♦ WeaklyCorrelated -**1**

Mapping of COs with POs

CO/ PO	PO1	PO2	PO3	PO4
CO1	3	2	2	1
CO2	1	3	2	1
CO3	1	1	3	2
CO4	2	1	3	1
CO5	1	2	1	3

COURSE DESIGNER:

Dr.G.Germine Mary

Forwarded By

(Dr. S. Vidya)

HOD'S Signature& Name

SKILL DEVELOPMENT, EMPLOYABILITY

I B.Sc. Computer Science

SEMESTER –II

For those who joined in 2023 onwards

PROGRAMME CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS/ WEEK	CREDITS
UACS	23B2CC3	DATA STRUCTURES AND ALGORITHMS	MAJOR CORE	5	5

COURSE DESCRIPTION

This course aims to impart fundamental knowledge on application of data structures in problem solving and about predefined algorithms

COURSE OBJECTIVES

- To impart knowledge and skill on identifying apt data structures to solve problems efficiently.
- To impart skill to write time and space efficient algorithms.
- To provide basic knowledge about predefined algorithms and where they could be applied.

UNITS

UNIT I : BASIC CONCEPTS & ARRAYS [15 HRS]

Overview: System Life Cycle – Object Oriented Design – Data Abstraction and Encapsulation - Algorithm Specification – Performance Analysis and Measurement - - Abstract Data Types and the C++ Class – The array as an Abstract Data Type – The Polynomial Abstract Data Type – Sparse Matrices Transpose and Fast Transpose Methods – Representation of Arrays

UNIT II: STACKS AND QUEUES [15 HRS]

Templates in C++ - The Stack Abstract Data Type – The Queue Abstract Data Type – Sub typing and Inheritance in C++ - A Mazing problem – Evaluation of Expressions.

UNIT III: LINKED LISTS [15 HRS]

Singly linked lists and chains– Representing Chains in C++ - The Template class chain - Circular lists – Available Space lists - Linked stacks and queues – Polynomials – Sparse matrices.

UNIT IV: TREES [15 HRS]

Introduction - Binary trees – Binary tree traversal - Additional binary tree operations

UNIT V: ALGORITHM [15 HRS]

Divide and Conquer: The general method - Binary search

Greedy method: The general method – Knapsack problem

Dynamic Programming: The general method - Multi-stage graphs.

UNIT – VI DYNAMISM (For CIA only)

UNIT III: Available Space lists - Polynomials

TEXT BOOKS

1. ***Fundamentals of Data Structures in C++,*** Ellis Horowitz, Sartaj Sahni, Dinesh Mehta, 2nd Edition, Universities Press, 2016.

Chapter: 1, 2, 3, 4.1 - 4.9, 5.1 - 5.5

2. ***Computer Algorithms/C++,*** Ellis Horowitz, Sartaj Sahni, Sanguthevar Rajasekaran, 1st Edition, Galgotia Publications, 2016.

Chapter: 3.1, 3.2, 4.1, 4.2, 5.1, 5.2

REFERENCES:

1. ***Fundamentals of Data Structures in C++,*** Ellis Horowitz, SartajSahni, Galgotia Publications, 2006.

2. ***Fundamentals of Computer Algorithms***, Ellis Horowitz, SartajSahni, Galgotia Publications, 2010.

3. ***Data structures with C***, Seymour Lipschutz., Tata McGraw Hill, New Delhi, 2011.

COURSE CONTENTS & LECTURE SCHEDULE

Module No.	Topic	No. of Lectures	Content Delivery Method	Teaching Aids
Unit -1 HEADING				
1.1	Overview: System Life Cycle – Object Oriented Design – Data Abstraction and Encapsulation -	4	Chalk & Talk	Black Board
1.2	Algorithm Specification – Performance Analysis and Measurement - -	3	Chalk & Talk	Black Board
1.3	Abstract Data Types and the C++ Class – The array as an Abstract Data Type – The Polynomial Abstract Data Type	3	Chalk & Talk	Black Board
1.4	Sparse Matrices – Representation of Arrays –	3	Chalk & Talk	Black Board
1.5	The String Abstract Data Type	2	Chalk & Talk	Black Board
Unit -2				
2.1	Templates in C++ -	4	Chalk & Talk	Black Board
2.2	The Stack Abstract Data Type	3	Chalk & Talk	Black Board
2.3	– The Queue Abstract Data Type –	3	Chalk & Talk	Black Board
2.4	Subtyping and Inheritance in C++ -	3	Chalk & Talk	Black Board
2.5	A Mazing problem – Evaluation of Expressions.	2	Chalk & Talk	Black Board
Unit -3				
3.1	Singly linked lists and chains– Representing Chains in C++ - The Template class chain	5	Chalk & Talk	Black Board
3.2	Circular lists – Available Space lists	3	Chalk & Talk	Black Board
3.3	Linked stacks and queues – Polynomials –	4	Chalk & Talk	Black Board
3.4	Sparse matrices.	3	Chalk & Talk	Black Board
Unit -4				
4.1	Introduction - Binary trees –	5	Chalk & Talk	Black Board
4.2	Binary tree traversal and Tree Iterators –	5	Chalk & Talk	Black Board
4.3	Additional binary tree operations –	5	Chalk & Talk	Black Board
Unit – 5				
5.1	Divide and Conquer: The general method-Binary search	5	Chalk & Talk	Black Board
5.2	Greedy method: The general method – Knapsack problem	5	Chalk & Talk	Black Board
5.3	Dynamic Programming: The general method - Multi-stage graphs	5	Chalk & Talk	Black Board

EVALUATION PATTERN

Levels	C1	C2	C3	C4	C5	Total Scholastic Marks	Non Scholastic Marks C6	CIA Total	% of Assessment
	T1 10 Mks.	T2 10 Mks.	Quiz 5 Mks.	Assignment 5 Mks	OBT/PPT 5 Mks	35 Mks.	5 Mks.	40Mks.	
K1	2	2	-	-	-	4	-	4	10 %
K2	2	2	5	-	-	9	-	9	22.5 %
K3	3	3	-	-	5	11	-	11	27.5 %
K4	3	3	-	5	-	11	-	11	27.5 %
Non Scholastic	-	-	-	-	-		5	5	12.5 %
Total	10	10	5	5	5	35	5	40	100 %

CIA	
Scholastic	35
Non Scholastic	5
TOTAL	40

✔ **The levels of CIA Assessment based on Revised Bloom's Taxonomy are :**

K1- Remember, **K2-**Understand, **K3-**Apply, **K4-**Analyse

	SCHOLASTIC				NON - SCHOLASTIC	MARKS		
C1	C2	C3	C4	C5	C6	CIA	ESE	Total
10	10	5	5	5	5	40	60	100

COURSE OUTCOMES

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

No.	Course Outcome	Knowledge Level(According to Bloom's Taxonomy)	PSOs ADDRESSED	POs ADDRESSED
CO 1	Identify data structures needed to solve specific problems	K1	PSO1& PSO2	PO2
CO 2	Analyze the data structures for effective use in problem solving	K2	PSO3	PO1
CO 3	Design and develop efficient algorithms in terms of Space and Time	K3	PSO5	PO3
CO 4	Troubleshoot algorithms	K4	PSO6	PO2
CO 5	Analyze time complexity of algorithms	K3	PSO4	PO2 &PO3

Mapping COs Consistency with PSOs

CO/ PSO	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6
CO1	**3**	**3**	1	1	2	1
CO2	2	1	**3**	2	2	2
CO3	2	2	1	1	**3**	1
CO4	1	2	2	2	1	**3**
CO5	1	1	2	**3**	1	2

Mapping COs Consistency with POs

CO/ PO	PO1	PO2	PO3	PO4
CO1	2	3	2	2
CO2	3	2	1	1
CO3	2	2	3	2
CO4	2	3	1	2
CO5	2	3	3	1

Note: ♦ Strongly Correlated – **3**

♦ Moderately Correlated – **2**

♦ Weakly Correlated **-1**

COURSE DESIGNER:

Dr. S. Vidya

Forwarded By

(Dr. S. Vidya)

HOD'S Signature & Name

SKILL DEVELOPMENT, EMPLOYABILITY

I B.Sc. Computer Science

SEMESTER –II

For those who joined in 2023 onwards

PROGRAMME CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS/WEEK	CREDITS
UACS	23B2CC4	LAB II DATA STRUCTURES IN C ++	MAJOR CORE - LAB	5	5

COURSE DESCRIPTION

This practical course is to provide students the laboratory skill to apply all that they have learnt in the Major Core Theory course 23B2CC3. The lab work goes in parallel with the theory course.

COURSE OBJECTIVES

- To develop programming skill
- To impart the skill of debugging
- To effectively utilize the apt data structures to solve problems
- To write efficient algorithms for solving problems

SYLLABUS

Programs to be written using the following concepts.

1. Arrays
2. Stacks
3. Queues
4. String Processing
5. Basic operations on linked lists – Creation, Insertion, Deletion
6. Problems using linked lists
7. Recursive tree traversals

EVALUATION PATTERN

SCHOLASTIC		NON - SCHOLASTIC	MARKS		
C1	C2	C3	CIA	ESE	Total
20	15	5	40	60	100

C1 – Average of Two Model Tests

C2 – Average of class Performance and Record work

C3 – Non - Scholastic

COURSE OUTCOMES (CO)

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

No.	Course Outcome	Knowledge Level(According to Bloom's Taxonomy)	PSOs ADDRESSED	POs ADDRESSED
CO 1	Write efficient programs consuming less memory	K3	PSO1& PSO3	PO1
CO 2	Compile and Execute programs using required data structures	K4	PSO2	PO2
CO 3	Implement the algorithms using C++	K2	PSO4	PO4
CO 4	Debug programs	K2	PSO6	P03

Mapping COs Consistency with PSOs

CO/ PSO	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6
CO1	**3**	2	**3**	1	1	2
CO2	2	**3**	2	2	1	1
CO3	2	1	2	**3**	2	2
CO4	1	2	2	1	1	**3**

Mapping COs Consistency with POs

CO/ PO	P O1	PO2	PO3	PO4
CO1	3	1	2	2
CO2	2	3	1	1
CO3	2	2	1	3
CO4	2	1	3	2

Note: ♦ Strongly Correlated – **3** ♦ Moderately Correlated – **2**

♦ Weakly Correlated **-1**

COURSE DESIGNER:

Dr. S. Vidya

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SKILL DEVELOPMENT, ENTREPRENEURSHIP, EMPLOYABILITY

I B.Sc. Computer Science

SEMESTER – II

For those who joined in 2023 onwards

PROGRAMME CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS/ WEEK	CREDITS
USCS	23B2EC1	OBJECT ORIENTED PROGRAMMING IN C++	Discipline Specific Elective	5	3

COURSE DESCRIPTION

This course introduces the student to object-oriented programming through a study of the concepts of program specification and design, and algorithm development.

COURSE OBJECTIVES

In the expanding field of computer education, one of the fastest growing, versatile and much sought after languages is C++. This course enables the students to understand the fundamentals of the language, the concepts related to the syntax of the language.

UNIT I: BEGINNING WITH C++ (15 HRS.)

What is C++ - Applications of C++ - A simple C++ program – More C++ statements – Structure of C++ program – Tokens – Keywords – Identifiers – Variables – Operators – Manipulators – Expressions – Control structures. Introduction – The main function – Function prototyping – Call by reference – Return by reference – Return by reference – Inline function – Default arguments – Const arguments –
Function overloading – Friend and virtual functions – Math library functions.

UNIT II: CLASSES AND OBJECTS (15 HRS.)

Introduction – C structures revisited – Specifying a class – Defining member functions – A C++ program with class – Making an outside function inline – Nesting of member functions – Private member functions – Arrays within a class – Memory allocation for objects – Static data members – Static member functions – Arrays of objects – Objects as function arguments – Friendly functions – Returning objects –
Const member functions – Pointers to members – Local classes.

UNIT III: CONSTRUCTORS, DESTRUCTORS AND OPERATOR OVERLOADING (15 HRS.)

Introduction – Constructors and destructors - Defining operator overloading – Overloading unary operators - Overloading binary operators - Overloading binary operators using friends – Manipulation of strings using operators – Rules for overloading operators – Type conversions.

UNIT IV: INHERITANCE (15 HRS.)

Introduction – Defining derived classes – Single inheritance – Making a private member inheritable – Multilevel inheritance – Multiple inheritance – Hierarchical inheritance – Hybrid inheritance – Virtual base classes – Abstract classes – Constructors in derived classes – Member classes: Nesting of classes.

UNIT V: POINTERS, VIRTUAL FUNCTIONS AND POLYMORPHISM (15 HRS.)

Introduction – Pointers – Pointers to objects –this pointer – Pointers to derived classes – Virtual functions – Pure virtual functions – Polymorphism.

TEXT BOOK:

1. E. Balagurusamy - Object Oriented Programming with C++, Tata McGraw-Hill Publishing Company Limited – Fourth Edition - 2007.

UNIT I : Chapter 2- 2.1 to 2.4, 2.6, Chapter 3- 3.2 to 3.24
Chapters 4- 4.1 to 4.11
UNIT II : Chapter 5- 5.1 to 5.19,
UNIT III: Chapter 6-6.1 to 6.11 Chapter 7- 7.1 to 7.8,
UNIT IV: Chapter 8-8.1 to 8.12
UNIT V : Chapter 9- 9.1 to 9.7

REFERENCES:

1. Robert Lafore – Object-Oriented Programming in Microsoft C++ - Galgotia publication – Third Edition – 2004.
2. Stephen Prata - C++ primer plus - Galgotia publication pvt. Ltd. – 1997.

List of Programs

1. To add two integers
2. Multiply two integers.
3. Divide one integer by the other.
4. To find if the number is odd or even.
5. To find if the given number is negative or non-negative
6. To find the area of the square
7. To find the greatest between two integers
8. To find the area of rectangle
9. To find the area of triangle
10. To find Simple Interest
11. To illustrate the use of dereference operator
12. To illustrate the use of default arguments.

13. Using Function overloading to find the areas of square, rectangle,triangle and circle.
14. To illustrate the use of object arrays.
15. To swap private data of classes
16. To illustrate returning objects
17. To show the use of overloaded constructors
18. To overload binary operators
19. To illustrate single inheritance
20. To illustrate multiple inheritance

EVALUATION PATTERN

Levels	C1	C2	C3	C4	C5	Total Scholastic Marks	Non Scholastic Marks C6	CIA Total	% of Assessment
	T1 10 Mks.	T2 10 Mks.	Quiz 5 Mks.	Assignment 5 Mks	OBT/PPT 5 Mks	35 Mks.	5 Mks.	40Mks.	
K1	2	2	-	-	-	4	-	4	10 %
K2	2	2	5	-	-	9	-	9	22.5 %
K3	3	3	-	-	5	11	-	11	27.5 %
K4	3	3	-	5	-	11	-	11	27.5 %
Non Scholastic	-	-	-	-	-		5	5	12.5 %
Total	10	10	5	5	5	35	5	40	100 %

CIA	
Scholastic	**35**
Non Scholastic	**5**
TOTAL	**40**

✔ **The levels of CIA Assessment based on Revised Bloom's Taxonomy are :**

K1- Remember, **K2-**Understand, **K3-**Apply, **K4-**Analyse

	SCHOLASTIC				NON - SCHOLASTIC	MARKS		
C1	**C2**	**C3**	**C4**	**C5**	**C6**	**CIA**	**ESE**	**Total**
10	**10**	**5**	**5**	**5**	**5**	**40**	**60**	**100**

COURSE DESIGNER:

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SKILL DEVELOPMENT, ENTREPRENEURSHIP, EMPLOYABILITY

I B.Sc. Computer Science

SEMESTER –II

For those who joined in 2023 onwards

PROGRAMME CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS/ WEEK	CREDITS
UACS	23B2EC2	COMPUTER SYSTEM ARCHITECTURE	Discipline Specific ELECTIVE	5	3

COURSE DESCRIPTION

This course aims to impart knowledge about internal architecture of a computer system and the techniques used to connect various input/output system with the computer.

COURSE OBJECTIVES

- To understand the organization and design of basic digital computer.
- To understand the procedure for implementing the arithmetic algorithm in digital hardware.
- To discuss the techniques that computers use to communicate with I/O devices and Memory.

UNITS

UNIT I: BASIC COMPUTER ORGANIZATION AND DESIGN (15 Hrs)

Instruction Codes – Computer Registers – Computer Instructions – Timing and Control – Instruction Cycle – Memory-Reference Instructions – Input-Output and Interrupt - Complete Computer Description – Design of Basic Computer – Design of Accumulator Logic.

UNIT II: CENTRAL PROCESSING UNIT (15 Hrs)

Introduction – General Register Organization – Stack Organization – Instruction Formats - Addressing Modes – Data Transfer and Manipulation – Program Control

UNIT III: COMPUTER ARITHMETIC (15 Hrs)

Introduction – Addition and Subtraction - Multiplication Algorithms – Division Algorithms – Floating-point Arithmetic Operations

UNIT IV: INPUT-OUTPUT ORGANIZATION (15 Hrs)

Peripheral Devices – Input-Output Interfaces – Asynchronous Data Transfer – Modes of Transfer – priority Interrupt - Direct Memory Access (DMA)

UNIT V: MEMORY ORGANIZATION (15 Hrs)

Memory Hierarchy – Main Memory – Auxiliary memory – Associative Memory – Cache Memory – Virtual Memory – Memory Management Hardware

DYNAMISM (For CIA only):

Unit-I: Complete Flow Chart of a basic computer system

Unit-II: Data Transfer and Manipulation Instructions

Unit-IV: Peripheral Devices

Unit-V: Auxiliary Memory

TEXT BOOK

Computer System Architecture, M.Morris Mano, Revised 3rdEdition, Pearson Publication , New Delhi, 2017. Chapters : 5, 8.1-8.7, 10.1-10.5, 11.1 – 11.6, 12

REFERENCE BOOKS

1. ***Computer Organization and Architecture,***Rajaraman.V and Radhakrishnan, 1st Edition,Prentice Hall of India Private Limited, 2009

2. ***Computer Organization and Architecture*** – Designing for Performance, William Stallings, 5th Edition, Pearson Edition, 2010

3. ***Computer Organisation, V.CarlHamacher, Zvonko G***. Uranesic.&SafwatZaky, 5thEdition, 2011

COURSE CONTENTS & LECTURE SCHEDULE

Module No.	Topic	No. of Lectures	Content Delivery Method	Teaching Aids
Unit -1				
1.1	Introduction- Instruction code- computer registers	3	Chalk & Talk	Black Board
1.2	Timing and control unit- instruction cycle	3	Chalk & Talk	Black Board
1.3	Memory & Register reference instructions	3	Chalk & Talk	Black Board
1.4	Input-Output instructions- computer design	3	Chalk & Talk	Black Board
1.5	Design of accumulator logic	3	Chalk & Talk	Black Board
Unit -2				
2.1	Introduction to CPU- General register organization – stack organization	3	Chalk & Talk	Black Board
2.2	Instruction formats, Addressing modes	3	Chalk & Talk	Black Board
2.3	Computer instructions: classification	3	Chalk & Talk	Black Board

2.4	Program control instructions	3	Chalk & Talk	Black Board
2.5	Interrupts	3	Chalk & Talk	Black Board
Unit -3				
3.1	Addition & subtraction algorithm	3	Chalk & Talk	Black Board
3.2	Fixed point & Booth Multiplication Division algorithm	3	Chalk & Talk	Black Board
3.3	Fixed point Division algorithm	3	Chalk & Talk	Black Board
3.4	Floating point : Addition & subtraction algorithm	3	Chalk & Talk	Black Board
3.5	Floating point: Multiplication & Division algorithm	3	Chalk & Talk	Black Board
Unit -4				
4.1	Peripheral devices	3	Chalk & Talk	Black Board
4.2	I/O interface	3	Chalk & Talk	Black Board
4.3	Asynchronous data transfer	3	Chalk & Talk	Black Board
4.4	Modes of data transfer- Programmed I/O	3	Chalk & Talk	Black Board
4.5	Interrupt I/O, DMA data transfer	3	Chalk & Talk	Black Board
Unit – 5				
5.1	Memory Hierarchy, main memory	3	Chalk & Talk	Black Board
5.2	Auxiliary memory, Associative memory	3	Chalk & Talk	Black Board
5.3	Cache memory	3	Chalk & Talk	Black Board
5.4	Virtual memory	3	Chalk & Talk	Black Board

5.5	Memory management hardware	3	Chalk & Talk	Black Board

EVALUATION PATTERN

Levels	C1	C2	C3	C4	C5	Total Scholastic Marks	Non Scholastic Marks C6	CIA Total	% of Assessment
	T1 10 Mks.	T2 10 Mks.	Quiz 5 Mks.	Assignment 5 Mks	OBT/PPT 5 Mks	35 Mks.	5 Mks.	40Mks.	
K1	2	2	-	-	-	4	-	4	10 %
K2	2	2	5	-	-	9	-	9	22.5 %
K3	3	3	-	-	5	11	-	11	27.5 %
K4	3	3	-	5	-	11	-	11	27.5 %
Non Scholastic	-	-	-	-	-		5	5	12.5 %
Total	10	10	5	5	5	35	5	40	100 %

CIA	
Scholastic	35
Non Scholastic	5
TOTAL	40

✔ **The levels of CIA Assessment based on Revised Bloom's Taxonomy are :**

K1- Remember, **K2-**Understand, **K3-**Apply, **K4-**Analyse

	SCHOLASTIC				NON - SCHOLASTIC	MARKS		
C1	C2	C3	C4	C5	C6	CIA	ESE	Total
10	10	5	5	5	5	40	60	100

COURSE OUTCOMES (CO)

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

No.	Course Outcome	Knowledge Level (According to Bloom's Taxonomy)	PSOs ADDRESSED	POs ADDRESSED
CO 1	Outline the structure of a basic computer system and explain the role of functional units	K1	PSO1	PO1
CO 2	Explain the instruction cycle according to the type and addressing mode of the instruction	K1,K2	PSO3	PO1
CO 3	Design the control logic circuit for various digital circuits such as registers, memory and adder - logic circuit of a basic computer system	K2,K3	PSO2 & PSO5	PO2
CO 4	Identify the memory requirement of a CPU, select the memory chips and design a mapping circuit	K1,K2	PSO4	PO4
CO 5	Explain the structure and the usage of various interfacing devices needed for connecting peripheral devices with the CPU	K1,K4	PSO5	PO3

Mapping COs Consistency with PSOs

CO/ PSO	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO1	**3**	2	2	2	2	2	1
CO2	2	2	**3**	2	2	2	1
CO3	2	**3**	2	2	**3**	2	1
CO4	2	2	2	**3**	2	2	1
CO5	2	2	2	2	**3**	2	1

Note: ♦ Strongly Correlated – **3** ♦ Moderately Correlated – **2**

♦ Weakly Correlated -**1**

Mapping COs Consistency with POs

CO/ PSO	PO1	PO2	PO3	PO4
CO1	**3**	2	2	1
CO2	**3**	2	2	1
CO3	2	**3**	2	1
CO4	2	2	2	**3**
CO5	2	**3**	2	1

COURSE DESIGNER:

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Forwarded By

(Dr. S. Vidya)

HOD'S Signature& Name

SKILL DEVELOPMENT, ENTREPRENEURSHIP, EMPLOYABILITY

I B.Sc. Computer Science

SEMESTER –II

For those who joined in 2023 onwards

PROGRAMME CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS/ WEEK	CREDITS
UACS	23B2SE2	WEB DESIGNING USING HTML	(Non Major Elective) LAB	2	2

COURSE DESCRIPTION

This Course introduces basic web design using Hypertext Markup Language (HTML). And this course provides knowledge to plan and design effective web pages with different text formatting and images to create website.

COURSE OBJECTIVES

- To enhance the knowledge of the students in effective webpage designing.
- To provide skills to sharply focus on needed information to be presented in a website.
- To improve the quality of the students by giving strong base in fundamental and concepts.
- To give courage to face the real-world scenarios as it is practical oriented
- To inculcate the ability to explain, analyze, identify and define the technology required to build and implement a web site.

UNITS

UNIT I: ESSENTIAL HTML (6 Hrs)

The history of HTML .<!DOCTYPE> -<HTML> – Creating The structures of a Web page's: Head and Body – Setting Web Page Colors – Adding Text to a Web Page - basic Text formatting - Comments and server-Side includes - </Body>- </HTML>

UNIT II: WORKING WITH TEXT (6 Hrs)

Formatting with HTML tags – Physical HTML styles – Logical HTML styles – Setting Fonts – Headings - some remove tags - Displaying Plain text - <H1> Through <H6>- Creating Web Page Headings - <B> -<I> - <TT> - <U> - <S> and <Strike> - <BIG> - -<SMALL> - <SUB> - <SUP> -<EM> - <Strong> - <CODE> - <CITE> - <ABBR> - <Acronym> - <FONT> – setting font point size directly- <BASEFONT> - <Q> - <Blink> - <INS> - <DEL> - <Address>- <BDO> – Displaying Special Characters: Character Entities

UNIT III: PRESENTING AND ARRANGING TEXT, IMAGE and LINK (6 Hrs)

Arranging text - Using <DIV> and <SPAN> - Using Layers – More Formatting Power – preformatting Text - Avoiding Plain text Wrapping -
 -<NOBR> - - <WBR> - <P> -

<HR> - <CENTER><BlockQuote> - <PRE> - <MARQUEE> - <DIV> - <SPAN> - Formatting text with tables–- <Layer> - <NOLAYER> - <ILAYER>

UNIT IV: CREATING LIST (6 Hrs)

Creating List - <LI> - <UL> - <OL>– Creating Customized Unordered lists - Creating Customized ordered lists - <DL>, <DT> and DD> - Creating Definition Lists – Nesting Lists - <DIR> and <Menu>- Deprecated Lists.

UNIT V: TABLES (6 Hrs)

<TABLE> - <TR>- <TH> - <TD> - <CAPTION> - setting table Border Widths – Setting Cell padding – Setting cell spacing – Setting table column and widths – Setting table Colors – Aligning table in Web Pages – Aligning Cell text – Using images in tables – Nesting tables - Spanning multiple columns - Spanning multiple rows - <THEAD>, <TBODY>, and <TFOOT> - Grouping and Formatting Rows – Formatting text with tables.

TEXT BOOK

1. *HTML Black Book, Steven Holzner*, Dreamtech Press, 2000

   Chapters: 1, 2, 3, 5, 6,7

REFERENCE BOOKS

2. *Mastering HTML, CSS &Javascript web Publishing,* Laura Lemay, Rafe Colburn & Jennifer Kyrnin, BPB publications, 2016
3. *HTML & CSS the complete reference,* Thomas A Powell, 5th edition, McGrawHill, New Delhi, 2017.

COURSE CONTENTS & LECTURE SCHEDULE

Module No.	Topic	No. of Lectures	Content Delivery Method	Teaching Aids
Unit -1 ESSENTIAL HTML				
1.1	.<!DOCTYPE> -<HTML> – Creating The structures of a Web page's: Head and Body – Setting Web Page Colors	3	Chalk & Talk	Black Board
1.2	– Adding Text to a Web Page - basic Text formatting - <!..> Comments and server-Side includes - </Body>- </HTML>	3	Demonstration	LCD
UNIT II: WORKING WITH TEXT				
2.1	Formatting with HTML tags – Physical HTML styles – Logical HTML styles – Setting Fonts – Headings - some remove tags - Displaying Plain text - <H1> Through <H6>- Creating Web Page Headings - <B> -<I> - <TT> - <U> - <S> and <Strike> - <BIG> - -<SMALL> - <SUB> - <SUP> -<EM> - <Strong> - <CODE> -	3	Demonstration	LCD
2.2	<CITE> - <ABBR> - <Acronym> - <FONT> – setting font point size directly- <BASEFONT> - <Q> - <Blink> - <INS> - <DEL> - <Address>- <BDO> – Displaying Special Characters: Character Entities.	3	Demonstration	LCD
UNIT III: PRESENTING AND ARRANGING TEXT				
3.1	Arranging text - Using <DIV> and <SPAN> - Using Layers – More Formatting Power – preformatting Text - Avoiding Plain text Wrapping -- -<NOBR> - - <WBR> - <P> - <HR> - <CENTER><BlockQuote> - <PRE> - <MULTICOL> - <SPACER> - <MARQUEE> - <DIV> - <SPAN> -	3	PPT	LCD
3.2	Use <img> and <a> tag	3	Demonstration	LCD
UNIT IV: CREATING LISTS				
4.1	Creating List - <LI> - <UL> - <OL>– Creating Customized Unordered lists - Creating Customized ordered lists - <DL>, <DT> and DD> -	3	Demonstration	LCD

4.2	Creating Definition Lists – Nesting Lists - <DIR> and <Menu>- Deprecated Lists.	3	Demonstration	LCD
UNIT V: WORKING WITH TABLES				
5.1	Setting table Border Widths – Setting Cell padding – Setting cell spacing – Setting table column and widths	3	Demonstration	PPT &Smart Board
5.2	Setting table Colors – Aligning table in Web Pages – Aligning Cell text – Using images in tables – Nesting tables - Spanning multiple columns - Spanning multiple rows - <THEAD>, <TBODY>, and <TFOOT> - Grouping and Formatting Rows – Formatting text with tables.	3	Chalk & Talk Lecture	Black Board

EVALUATION PATTERN

SCHOLASTIC		NON - SCHOLASTIC	MARKS		
C1	**C2**	**C3**	**CIA**	**ESE**	**Total**
20	**15**	**5**	**40**	**60**	**100**

C1 – Average of Two Model Tests

C2 – Average of class Performance and Record work

C3 – Non - Scholastic

COURSE OUTCOMES (CO)

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

No.	Course Outcome	Knowledge Level (According to Bloom's Taxonomy)	PSOs ADDRESSED	POs ADDRESSED
CO 1	Create simple web page using physical tags	K1	PSO1	PO1
CO 2	Present the information in standard form in a web page using different formatting tags	K2	PSO1	PO2
CO 3	Design the layout for a web page using image and links	K2&K3	PSO2& PSO4	PO2
CO 4	Develop a web site with a list of items	K3	PSO3	PO3
CO 5	Grouping and Formatting tables, – Formatting text with tables.	K2&K3	PSO5	PO4

Mapping COs Consistency with PSOs

CO/ PSO	PSO1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	3	2	1	2	1	2	2
CO 2	3	2	2	1	2	1	2
CO 3	2	3	2	3	2	1	2
CO 4	2	1	3	1	1	1	1
CO 5	1	2	1	2	3	2	1

Note: ♦ Strongly Correlated – 3 ♦ ModeratelyCorrelated – 2

♦ WeaklyCorrelated -1

Mapping of COs with POs

CO/ PSO	PO1	PO2	PO3	PO4
CO1	3	2	1	2
CO2	2	3	1	1
CO3	2	3	2	1
CO4	2	1	3	2
CO5	1	2	1	3

COURSE DESIGNER:

Dr.G.Germine Mary

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SKILL DEVELOPMENT, ENTREPRENEURSHIP, EMPLOYABILITY

I B.Sc. Computer Science

SEMESTER –II

For those who joined in 2023 onwards

PROGRAMME CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS/ WEEK	CREDITS
UACS	23B2SE3	WEB DESIGNING USING HTML & CSS	SKILL ENHANCEMENT COURSE (LAB) (SEC 3)	2	2

COURSE DESCRIPTION

To provide an overview of the markup language – HTML and to facilitate the learner to equip the knowledge to develop web based applications.

COURSE OBJECTIVES

- To enhance the knowledge of the students in effective webpage designing.
- To provide skills to sharply focus on needed information to be presented in a website.
- To improve the quality of the students by giving strong base in fundamental and advanced concepts.
- To give courage to face the real-world scenarios as it is practical oriented
- To inculcate the ability to explain, analyze, identify and define the technology required to build and implement a web site.

Programs that can be practiced

1. Create a document, include heading tag <H1> to <H6> and include basic text formatting tags.

2. Create a document with suitable page and paragraph breaks, Include marquee tag

3. Create a document with ordered and unordered list

4. Create a document with table with suitable formatting

5. Create a website using internal links and images

6. Design a calendar using table tag.

7. Create a HTML document to display a list of five flowers and link each one to another document displaying brief description of the flower, Add pictures wherever possible

8. Write an HTML code to display a list of 5 cars in a frame, Link each one to a brief description in second frame. The left frame should display the list and the right frame should display the paragraph about the frame

EVALUATION PATTERN

SCHOLASTIC		NON - SCHOLASTIC	MARKS		
C1	C2	C3	CIA	ESE	Total
20	15	5	40	60	100

C1 – Average of Two Model Tests

C2 – Average of class Performance and Record work

C3 – Non - Scholastic

COURSE OUTCOMES (CO)

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

No.	Course Outcome	Knowledge Level(According to Bloom's Taxonomy)	PSOs ADDRESSED	POs ADDRESSED
CO 1	Create simple web page using physical tags	K2	PSO1	PO1
CO 2	Present the information in standard form in a web page using structure tags supported by the browsers	K3	PSO2 & PSO3	PO2
CO 3	Design the layout for a web page using browser support tags	K3	PSO6	PO3
CO 4	Develop a web site with Tables and list of items	K4	PSO5	PO3
CO 5	Grouping and Formatting Rows – Formatting text with tables.	K3	PSO4	PO4

Mapping COs Consistency with PSOs

CO/ PSO	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6

CO1	**3**	**2**	**2**	**2**	**1**	**2**
CO2	**2**	**3**	**3**	**2**	**2**	**1**
CO3	**2**	**1**	**2**	**2**	**2**	**3**
CO4	**2**	**2**	**2**	**1**	**3**	**2**
CO5	**2**	**2**	**2**	**3**	**1**	**1**

Note: ♦ Strongly Correlated – **3**

♦ Moderately Correlated – **2** ♦ Weakly Correlated **-1**

Mapping of COs with POs

CO/ PO	**PO1**	**PO2**	**PO3**	**PO4**
CO1	**3**	**2**	**2**	**1**
CO2	**1**	**3**	**2**	**1**
CO3	**1**	**1**	**3**	**2**
CO4	**2**	**1**	**3**	**1**
CO5	**1**	**2**	**1**	**3**

COURSE DESIGNER:

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