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: M.SC

PROGRAMME CODE : PSCS

ACADEMIC YEAR : 2023– 2024

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 G
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 Compute 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 - COREL DRAW
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

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Members present

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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 19PG3B13 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
19PG73B13	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 3/4/23 Srimala 3.4.2023

03/04/2023 3/4/2023. (Dr. N. Rajeswari)

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

- 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 committed researchers who would be desirous for the "more" in all aspects
PEO 2	They will be efficient individual and team performers who would deliver excellent professional service exhibiting progress, flexibility, transparency, accountability and in taking up initiatives 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)

On completion of M.Sc. Computer Science Programme, the learner will be able to

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

PROGRAMME SPECIFIC OUTCOMES (PSO)

On completion of M.Sc. Computer Science programme, the learner will 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
PSO 7	Use research-based knowledge and research methods to design, analyse, and interpret data and to synthesize information to provide valid findings to serve community

FATIMA COLLEGE (AUTONOMOUS), MADURAI-18
DEPARTMENT OF COMPUTER SCIENCE
For those who joined in June 2023 onwards
MAJOR CORE – 60 CREDITS

PROGRAMME CODE: PSCS

S. No	SEM.	COURSE CODE	COURSE TITLE	HRS	CREDITS	CIA Mks	ESE Mks	TOT. MKs
1.	**I**	23PG1B1	Core – I :Analysis& Design of Algorithms	6	5	40	60	100
2.		23PG1B2	Core – II : Python Programming	6	5	40	60	100
3.		23PG1B3	Core - III: Python Programming Lab	6	4	40	60	100
4.		23PG1BE1 23PG1BE2	**Elective I:** Advanced Software Engineering Advanced Computer Graphics	5	3	40	60	100
5.		23PG1BE3 23PG1BE4	**Elective II** Advanced Database Systems Object Oriented Analysis and Design & C++	5	3	40	60	100
6.		23PG1BAE	Web Development	2	1	40	60	100
			TOTAL	**30**	**21**			
7.	**II**	23PG2B4	Core –IV : AdvancedJava Programming	6	5	40	60	100
8.		23PG2B5	Core – V: Data Mining and Warehousing	6	5	40	60	100
9.		23PG2B6	Core – VI : AdvancedJava Programming Lab	6	4	40	60	100
10.		23PG2BE5 23PG2BE6	**Elective - III :** Data MiningLabusing R Operating System Lab	4	3	40	60	100
11.		23PG2BE7 23PG2BE8	**Elective –IV :** Advanced Operating System Multimedia Technologies	4	3	40	60	100
12.		23PG2BAE	WEB Designing using CSS & JavaScript	4	2	40	60	100
			TOTAL	**30**	**22**			

S. No	SEM.	COURSE CODE	COURSE TITLE	HRS	CREDITS	CIA Mks	ESE Mks	TOT. MKs
13.	III	22PG3B12	Machine Learning	5	5	40	60	100
14.		19PG3B13	Data Mining and Data Warehousing	5	5	40	60	100
15.		22PG3B14	Lab V – Machine Learning Lab with Python	5	3	40	60	100
16.		19PG3B15	Lab VI – Data Mining And Data Warehousing	5	3	40	60	100
17.	IV	19PG4B16	Principles Of Internet Of Things (Self Study)	-	4	40	60	100

MAJOR ELECTIVE / EXTRA DEPARTMENTAL COURSE / INTERNSHIP/ PROJECT

S. No	SEM.	COURSECODE	COURSE TITLE	HRS	CREDITS	CIA Mks	ESE Mks	TOT. Mks
1.	III	19PG3BE5	PYTHON PROGRAMMING	5	5	40	60	100
2.		19PG3BE6	CRYPTOGRAPHY AND NETWORK SECURITY	5	5	40	60	100
3.		19PG3BE7	DISTRIBUTED DATABASE MANAGEMENT SYSTEM	5	5	40	60	100
4.		19PG3BE8	COMPILER DESIGN	5	5	40	60	100
5.		19PG3BE9	CLOUD COMPUTING	5	5	40	60	100
6.		19PG3BE10	ADVANCED COMPUTER GRAPHICS & ANIMATION	5	5	40	60	100
7.		19PG3BE11	BIG DATA ANALYTICS	5	5	40	60	100
8.		19PG3BE12	CYBER FORENSICS	5	5	40	60	100
9.		19PG3BE13	MOBILE COMMUNICATION	5	5	40	60	100
10.		19PG3BSI	SUMMER INTERNSHIP/ TRAINING/ ONLINE CERTIFICATION	-	3	40	60	100
11.	IV	19PG4BPR	PROJECT	-	6	40	60	100

EXTRA CREDIT COURSES

Course Code	Courses	Hrs.	Credits	Semester in which the course is offered	CIA Mks	ESE Mks	Total Marks
19PGBSL1	**SELF LEARNING COURSE for ADVANCED LEARNERS** BIOINFORMATICS	-	5	III & IV	40	60	100
21PGBSL2	**SELF LEARNING COURSE for ADVANCED LEARNERS** DEVELOPING WEB SERVICES	-	5	III & IV	40	60	100
21PGBSL3	**SELF LEARNING COURSES for ADVANCED LEARNERS** EVOLUTIONARY COMPUTING	-	5	III & IV	40	60	100
	MOOC COURSES (Department Specific Courses) * Students can opt other than the listed course from UGC-SWAYAM portal as well as from NPTEL	-	Respective Credits allotted by UGC	-	-	-	100

OFF-CLASS PROGRAMMES
ADD-ON COURSES

COURSE CODE	COURSES	HRS.	CREDITS	SEMESTER IN WHICH THE COURSE IS OFFERED
23PAD1SS	**SOFT SKILLS**	40	3	I
23PAD2CS	**Cyber Security**	Online	1	I and II
23PADAJ	**Scripting using Angular JS** (Offered by Dept. Of Computer Science)	40	2	II
23PAD4CV	**COMPREHENSIVE VIVA** (Question bank to be prepared for all the papers by the respective course teachers)	-	2	IV
23PAD4RC	**READING CULTURE**	20/ Year	2	I - IV

I M.Sc. Computer Science

SEMESTER –I

For those who joined in 2023 onwards

PROGRAMME CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS/ WEEK	CREDITS
PSCS	23PG1B1	ANALYSIS AND DESIGN OF ALGORITHMS	CORE	6	5

COURSE DESCRIPTION

This course explains many algorithms and how to solve various problems using same or different kind of algorithms with efficient manner.

COURSE OBJECTIVES

- To stress the importance of the efficiency in writing programs
- To write algorithms efficient in terms of design and time complexity

UNITS

UNIT I : INTRODUCTION (18 hrs)

Introduction: - Algorithm Definition and Specification – Space complexity- Time Complexity- Asymptotic Notations - Elementary Data Structure: Stacks and Queues – Binary Tree - Binary Search Tree - Heap – Heap sort- Graph.

UNIT II : TRAVERSAL AND SEARCH TECHNIQUES (18 hrs)

Basic Traversal And Search Techniques: Techniques for Binary Trees- Techniques for Graphs -Divide and Conquer: - General Method – Binary Search – Merge Sort – Quick Sort.

UNIT III : GREEDY METHOD (18 hrs)

The Greedy Method:- General Method–Knapsack Problem– Minimum Cost Spanning Tree– Single Source Shortest Path.

UNIT IV : DYNAMIC PROGRAMMING (18 hrs)

Dynamic Programming – General Method – Multistage Graphs –All Pair Shortest Path – Optimal Binary Search Trees – 0/1 Knapsacks – Travelling Salesman Problem – Flow Shop Scheduling.

UNIT V : BACKTRACKING (16 hrs)

Backtracking:- General Method–8-Queens Problem–Sum Of Subsets–Graph Coloring– Hamiltonian Cycles – Branch And Bound: - The Method – Travelling Salesperson.

UNIT VI : CONTEMPORARY ISSUES (2 hrs)

Expert lectures, online seminars – webinars

SELF STUDY:

UNIT II

TEXT BOOK

1. Computer Algorithms, EllisHorowitz, Galgotia Publications.
2. Data Structures and Algorithms, Alfred V.Aho, JohnE. Hopcroft, JeffreyD.Ullman.

REFERENCES:

1. Data Structures & Algorithms in Java, *Goodrich, Wiley 3rd edition.*
2. The Algorithm Design Manual, *Skiena, Second Edition, Springer, 2008.*
3. Introduction to the Design and Analysis of algorithm, *Anany Levith, Pearson Education Asia, 2003.*
4. An Introduction to the Analysis of Algorithms, *Robert Sedgewick,Phillipe Flajolet, Addison-Wesley Publishing Company, 1996.*

Digital Open Educational Resources (DOER)

1. https://nptel.ac.in/courses/106/106/106106131/
2. https://www.tutorialspoint.com/design_and_analysis_of_algorithms/index.htm
3. https://www.javatpoint.com/daa-tutorial

Levels	C1	C2	C3	C4	C5	Total Scholastic Marks	Non Scholastic Marks C6	CIA Total	% of Assessment
	T1 10 Mks.	T2 10 Mks.	Seminar 5 Mks.	Assignment 5 Mks	OBT/PPT 5 Mks	35 Mks.	5 Mks.	40Mks.	
K2	4	4	-	-	-	8	-	8	20 %
K3	2	2	-	5	-	9	-	9	22.5 %
K4	2	2	-	-	5	9	-	9	22.5 %
K5	2	2	5	-	-	9	-	9	22.5 %
Non Scholastic	-	-	-	-	-		5	5	12.5 %
Total	10	10	5	5	5	35	5	40	100 %

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

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

K1- Remember, **K2**-Understand, **K3**-Apply, **K4**-Analyse, **K5**-Synthesis

EVALUATION PATTERN

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

C1 – Conducted for 30 marks and converted into 10 marks

COURSE OUTCOMES (CO)

NO.	COURSE OUTCOMES	KNOWLEDGE LEVEL (ACCORDING TO REVISED BLOOM'S TAXONOMY)	PSOs ADDRESSED	POs ADDRESSED
CO 1	Get knowledge about algorithms and determines their time complexity. Demonstrate specific search and sort algorithms using divide and conquer technique.	K3/K4	PSO1& PSO2	PO3
CO 2	Gain good understanding of Greedy method and its algorithm.	K1/K2	PSO3& PSO4	PO2
CO 3	Able to describe about graphs using dynamic programming technique.	K3/K4	PSO5	PO1
CO 4	Demonstrate the concept of back tracking & branch and bound technique.	K3/K4	PSO6	PO4
CO 5	Explore the traversal and searching technique and apply it for trees and graphs.	K1/K2	PSO7	PO3

Mapping COs Consistency with PSOs

CO/ PSO	PSO1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO1	1	2	2	2	2	2	2
CO2	2	2	2	1	2	2	2
CO3	2	2	2	2	3	2	2
CO4	2	2	2	2	2	2	2
CO5	2	2	2	2	2	1	3

Mapping COs Consistency with POs

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

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

COURSE DESIGNER:
Dr.S.Arul Jothi

Forwarded By

(Dr.S.Vidya)

HOD'S Signature & Name

I M.Sc. Computer Science

SEMESTER –I

For those who joined in 2023 onwards

PROGRAMME CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS/ WEEK	CREDITS
PSCS	23PG1B2	PYTHON PROGRAMMING	CORE	6	5

COURSE DESCRIPTION

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

COURSE OBJECTIVES

- Presents an introduction to Python, creation of web applications, network applications and working in the clouds
- Use functions for structuring Python programs
- Understand different Data Structures of Python
- Represent compound data using Python lists, tuples and dictionaries

UNITS

UNIT I: INTRODUCTION (18 HRS)

Python: Introduction–Numbers–Strings–Variables–Lists–Tuples–Dictionaries–Sets– Comparison.

Unit II: CODE STRUCTURES (18 HRS)

Code Structures: if, elseif, and else – Repeat with while – Iterate with for – Comprehensions – Functions – Generators – Decorators – Namespaces and Scope – Handle Errors with try and except – User Exceptions.

Unit III: MODULES, PACKAGES AND CLASSES (18 HRS)

Modules, Packages, and Programs: Standalone Programs – Command-Line Arguments – Modules and the import Statement – The Python Standard Library.

Objects and Classes: Define a Class with class – Inheritance – Override a Method – Add a Method – Get Help from Parent with super – In self Defense – Get and Set Attribute Values with Properties –Name Mangling for Privacy – Method Types – Duck Typing – Special Methods –Composition.

Unit IV: DATA TYPES AND WEB (18 HRS)

Data Types: Text Strings–Binary Data.

Storing and Retrieving Data: File Input/Output– Structured Text Files –

Structured Binary Files - Relational Databases – No SQL Data Stores.

Unit V: SYSTEMS AND NETWORKS (16 HRS)

Web: Web Clients –Web Servers

Systems: Files–Directories–Programs and Processes–Calendars and Clocks.
Concurrency: Queues– Processes–Threads

UNIT VI : CONTEMPORARY ISSUES (2 hrs)

Expert lectures, online seminars – webinars

SELF STUDY:

Unit 4: Data Types: Text Strings–Binary Data.
Unit 5: Web: Web Clients –Web Servers

Text Books:

- Bill Lubanovic, "Introducing Python", O'Reilly, First Edition-Second Release, 2014.

Chapter : 2,3,4,5,6,7,8, 9 (Pg.no : 223 – 242) ,10, 11 (Pg.no : 267 – 273)

Reference Books:

- David M. Beazley, "Python Essential Reference", Developer's Library, Fourth Edition,2009.
- Sheetal Taneja, Naveen Kumar, "Python Programming-A Modular Approach, Pearson Publications.

Digital Open Educational Resources (DOER)

1. https://www.programiz.com/python-programming/
2. https://www.tutorialspoint.com/python/index.htm
3. https://onlinecourses.swayam2.ac.in/aic20_sp33/preview

Levels	C1	C2	C3	C4	C5	Total Scholastic Marks	Non Scholastic Marks C6	CIA Total	% of Assessment
	T1 10 Mks.	T2 10 Mks.	Seminar 5 Mks.	Assignment 5 Mks	OBT/PPT 5 Mks	35 Mks.	5 Mks.	40Mks.	
K2	4	4	-	-	-	8	-	8	20 %
K3	2	2	-	5	-	9	-	9	22.5 %
K4	2	2	-	-	5	9	-	9	22.5 %
K5	2	2	5	-	-	9	-	9	22.5 %
Non Scholastic	-	-	-	-	-		5	5	12.5 %
Total	10	10	5	5	5	35	5	40	100 %

CIA	
Scholastic	35
Non Scholastic	5
	40

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

K1- Remember, **K2**-Understand, **K3**-Apply, **K4**-Analyse, **K5**-Synthesis

EVALUATION PATTERN

	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 OUTCOMES	KNOWLEDGE LEVEL (ACCORDING TO REVISED BLOOM'S TAXONOMY)	PSOs ADDRESSED	POs ADDRESSED
CO 1	Understand the basic concepts of Python Programming	K3/K4	PSO1& PSO2	PO1
CO 2	Understand File operations, Classes and Objects	K1/K2	PSO3& PSO4	PO2
CO 3	Acquire Object Oriented Skills in Python	K3/K4	PSO5	PO4
CO 4	Develop web applications using Python	K3/K4	PSO6	PO2
CO 5	Develop Client Server Networking applications	K1/K2	PSO7	PO3

Mapping COs Consistency with PSOs

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

Mapping COs Consistency with POs

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

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

COURSE DESIGNER:
Dr.P.Meenakshi Sundari

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(Dr.S.Vidya)

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I M.Sc. Computer Science

SEMESTER –I

For those who joined in 2023 onwards

PROGRAMME CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS/ WEEK	CREDITS
PSCS	**23PG1B3**	**PYTHON PROGRAMMING LAB**	**CORE**	**6**	**4**

COURSE DESCRIPTION

The objective of the course is to develop knowledge and skills on python programming

COURSE OBJECTIVES

- This course presents an overview of elementary data items, lists, dictionaries, sets and tuples
- To understand and write simple Python programs
- To Understand the OOPS concepts of Python
- To develop web applications using Python

LIST OF PROGRAMS **75hours**

Implement the following in Python:

1. Programs using elementary data items, lists, dictionaries and tuples
2. Programs using conditional branches
3. Programs using loops.
4. Programs using functions
5. Programs using exception handling
6. Programs using inheritance
7. Programs using polymorphism
8. Programs to implement file operations.
9. Programs using modules.
10. Programs for creating dynamic and interactive web pages using forms.

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

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

K1- Remember, **K2-**Understand, **K3-**Apply, **K4-**Analyse, **K5-** Synthesis

EVALUATION PATTERN

SCHOLASTIC		NON - SCHOLASTIC	MARKS		
C1	**C2**	**C3**	**CIA**	**ESE**	**Total**
25	**10**	**5**	**40**	**60**	**100**

C1 – Average of Two Monthly Tests

C2 – Average of Weekly Tests

C3 – Non – Scholastic

COURSE OUTCOME (CO)

NO.	COURSE OUTCOME	KNOWLEDGE LEVEL (ACCORDING TO BLOOM'S TAXONOMY)	PSOS ADDRESSED	POS ADDRESSED
CO 1	To know the basics of algorithmic problem solving	K3	PSO1& PSO2	PO1
CO 2	To execute Python programs	K4	PSO3& PSO4	PO2
CO 3	To develop algorithmic solutions to simple computational problems	K3,K4	PSO5	PO3
CO 4	To represent compound data using Python lists, tuples, dictionaries	K3,K4	PSO6	PO3
CO 5	To implement input/output with files in Python	K4	PSO7	PO4

Mapping COs Consistency with PSOs

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

Mapping of COs with POs

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

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

COURSE DESIGNER:
Dr.P.Meenakshi Sundari

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(Dr.S.Vidya)

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I M.Sc. Computer Science

SEMESTER –I

For those who joined in 2023 onwards

PROGRAMME CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS/ WEEK	CREDITS
PSCS	23PG1BE1	ADVANCED SOFTWARE ENGINEERING	ELECTIVE	5	3

COURSE DESCRIPTION

Object Oriented software Engineering provides object oriented programming techniques. And explains various object oriented development cycles with appropriate testing methods. And gives how to design and construct modular, reusable, extensible and portable object-oriented software.

COURSE OBJECTIVES

The main objectives of this course are to:

1. Introduce to Software Engineering, Design, Testing and Maintenance.
2. Enable the students to learn the concepts of Software Engineering.
3. Learn about Software Project Management, Software Design & Testing.

UNITS

UNIT I : INTRODUCTION (15 Hrs)

Introduction: The Problem Domain – Software Engineering Challenges - Software Engineering Approach – Software Processes: Software Process – Characteristics of a Software Process – Software Development Process Models – Other software processes.

Unit:2 SOFTWARE REQUIREMENTS (15 Hrs)

Software Requirements Analysis and Specification : Requirement engineering – Type of Requirements – Feasibility Studies – Requirements Elicitation – Requirement Analysis – Requirement Documentation – Requirement Validation – Requirement Management – SRS - Formal System Specification – Axiomatic Specification – Algebraic Specification - Case study: Student Result management system. Software Quality Management –Software Quality, Software Quality Management System, ISO 9000, SEI CMM.

Unit:3 PROJECT MANAGEMENT (15 Hrs)

Software Project Management: Responsibilities of a software project manager – Project planning – Metrics for Project size estimation – Project Estimation Techniques – Empirical Estimation Techniques – COCOMO – Halstead"s software science – Staffing level estimation – Scheduling– Organization and Team Structures – Staffing – Risk management – Software Configuration

Management – Miscellaneous Plan.

Unit:4 SOFTWARE DESIGN (15 Hrs)

Software Design: Outcome of a Design process – Characteristics of a good software design – Cohesion and coupling - Strategy of Design – Function Oriented Design – Object Oriented Design - Detailed Design - IEEE Recommended Practice for Software Design Descriptions.

Unit:5 SOFTWARE TESTING (13 Hrs)

Software Testing: A Strategic approach to software testing – Terminologies – Functional testing– Structural testing – Levels of testing – Validation testing - Regression testing – Art of Debugging–Testingtools-Metrics-ReliabilityEstimation.SoftwareMaintenance -Maintenance Process - Reverse Engineering – Software Re-engineering - Configuration Management Activities.

Unit:6 Contemporary Issues (2 Hrs)

Expert lectures, online seminars –webinars

Text Books

1. An Integrated Approach to Software Engineering– Pankaj Jalote, Narosa Publishing House, Delhi, 3rd Edition.
2. Fundamentals of Software Engineering –Rajib Mall, PHI Publication, 3rd Edition.

Reference Books

1. Software Engineering –K. K. Aggarwaland Yogesh Singh, New Age International Publishers, 3rd edition.

2. A Practitioners Approach – Software Engineering- R.S.Pressman, McGraw Hill.

3. Fundamentals of Software Engineering-Carlo Ghezzi, M.Jarayeri, D.Manodrioli, PHI Publication.

Digital Open Educational

1. **https://www.javatpoint.com/software-engineering-tutorial**
2. **https://onlinecourses.swayam2.ac.in/cec20_cs07/preview**
3. **https://onlinecourses.nptel.ac.in/noc19_cs69/preview**

Levels	C1	C2	C3	C4	C5	Total Scholastic Marks	Non Scholastic Marks C6	CIA Total	% of Assessment
	T1 10 Mks.	T2 10 Mks.	Seminar 5 Mks.	Assignment 5 Mks	OBT/PPT 5 Mks	35 Mks.	5 Mks.	40Mks.	
K2	4	4	-	-	-	8	-	8	20 %
K3	2	2	-	5	-	9	-	9	22.5 %
K4	2	2	-	-	5	9	-	9	22.5 %
K5	2	2	5	-	-	9	-	9	22.5 %
Non Scholastic	-	-	-	-	-		5	5	12.5 %
Total	10	10	5	5	5	35	5	40	100 %

CIA	
Scholastic	35
Non Scholastic	5
	40

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

K1- Remember, **K2**-Understand, **K3**-Apply, **K4**-Analyse, **K5**-Synthesis

EVALUATION PATTERN

	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 OUTCOMES	KNOWLEDGE LEVEL (ACCORDING TO REVISED BLOOM'S TAXONOMY)	PSOs ADDRESSED	POs ADDRESSED
CO 1	Understand about Software Engineering process	K2	PSO1& PSO2	PO2
CO 2	Understand about Software project management skills , design and quality management	K2, K3	PSO3& PSO4	PO3
CO 3	Analyze on Software Requirements and Specification	K2, K4	PSO5	PO4
CO 4	Analyze on Software Testing, Maintenance and Software Re-Engineering	K2, K3 & K4	PSO6	PO4
CO 5	Design and conduct various types and levels of software quality for a software project	K3& K5	PSO7	PO5

Mapping COs Consistency with PSOs

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

Mapping COs Consistency with POs

CO/ PO	PO1	PO2	PO3	PO4	PO5
CO1	1	2	2	2	2
CO2	1	2	3	2	2
CO3	2	2	2	2	2
CO4	2	2	2	2	1
CO5	2	2	2	1	3

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

COURSE DESIGNER:
Sr.Margaret Mary

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(Dr.S.Vidya)

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I M.Sc. Computer Science

SEMESTER –I

For those who joined in 2023 onwards

PROGRAMME CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS/ WEEK	CREDITS
PSCS	23PG1BE2	ADVANCED COMPUTER GRAPHICS	ELECTIVE	5	3

COURSE DESCRIPTION

To make the students familiar with techniques of clipping, three dimensional graphics and three dimensional transformations.

COURSE OBJECTIVES

- To understand the basics of geometry processing.
- To understand the fundamentals of pipelined rasterization rendering of meshed objects and curved surfaces.
- To understand and work with advanced rendering methods such as radiosity.
- To design programs for advanced animation methods and
- To become proficient at graphics programming using OpenGL

UNITS

UNIT I: Output Primitive Of Attributes (15 Hrs)

Points and Lines – Line-drawing algorithms – Loading the frame buffer – Line function – Circle-generating algorithms – Ellipse-generating algorithms – Other curves – Parallel curve algorithms – Curve functions – Pixel addressing – Filled-area primitives – Line attributes – Curve attributes – Color and grayscale levels – Area-fill attributes – Character attributes.

UNIT II: Two-Dimensional Geometric Transformations (15 Hrs)

Basic Transformations – Matrix representations – Composite transformations – Other transformations – Transformations between coordinate systems.

UNIT III: Two-Dimensional Viewing (15 Hrs)

The viewing pipeline – Viewing coordinate reference frame – Window-to-viewport coordinate transformation - Two-Dimensional viewing functions – Clipping operations – Point clipping – Line clipping – Polygon clipping – Curve clipping – Text clipping.

UNIT IV: Introduction To Animation, Interpolation (15 Hrs)

Perception – The heritage of animation – Animation production – Computer Animation production – A Brief history of computer animation – Interpolation – Controlling the motion of a point – Interpolation of orientations.

UNIT V: Interpolation-Based Animation (15 Hrs)

Key-frame systems – Animation languages – Deforming objects – Morphing.

SELF STUDY:

UNIT I: Output Primitive: Color& grayscale levels, Area-fill attributes, Character attributes.

UNIT II: Two-Dimensional Geometric Transformations : Basic Transformations– Matrix representations

UNIT III: Two-Dimensional Viewing Window-to-viewport coordinate transformation

UNIT IV: Introduction To Animation, Interpolation : Controlling the motion of a point.

UNIT V: Interpolation-Based Animation: Deforming objects

TEXT BOOKS

1. ***Computer Graphics***, Donald D. Hearn, M. Pauline Baker, 4th Edition, Pearson Education Publication, 2014.

Chapters: 3.1 – 3.11, 4.1 – 4.5, 5.1 – 5.5, 6.1 – 6.10

2. ***Computer Animation-Algorithms and Techniques***, Rick Parent, Morgan Kaufman Publishers, 2nd Edition, 2009.

Chapters: 1, 3.1 – 3.2, 4.1 – 4.3,4.5

REFERENCES:

1. ***Computer Graphics, Multimedia and Animation***, Malay K.Pakhira, 2nd Edition, PHI Learning Pvt. Ltd., 2010.
2. ***Interactive Computer Graphics: A top-down approach with OpenGL***, Edward Angel and Dave Shreiner, 6th Edition, Addison Wesley, 2012.
3. ***Computer Graphics Principles and Practice***, Foley, Van Dam, Feiner, Hughes, 3rd Edition, C. Addison Wesley, 2014.

Digital Open Educational Resources (DOER)

1. https://en.wikipedia.org/wiki/Computer_graphics
2. http://what-when-how.com/advanced-methods-in-computer-graphics/introduction-to-advanced-methods-in-computer-graphics/
3. https://inst.eecs.berkeley.edu/~cs294-13/fa09/

Levels	C1	C2	C3	C4	C5	Total Scholastic Marks	Non Scholastic Marks C6	CIA Total	% of Assessment
	T1 10 Mks.	T2 10 Mks.	Seminar 5 Mks.	Assignment 5 Mks	OBT/PPT 5 Mks	35 Mks.	5 Mks.	40Mks.	
K2	**4**	**4**	**-**	**-**	**-**	**8**	-	**8**	20 %
K3	**2**	**2**	**-**	**5**	**-**	**9**	-	**9**	22.5 %
K4	**2**	**2**	**-**	**-**	**5**	**9**	-	**9**	22.5 %
K5	**2**	**2**	**5**	**-**	**-**	**9**	-	**9**	22.5 %
Non Scholastic	**-**	**-**	**-**	**-**	-		**5**	**5**	12.5 %
Total	**10**	**10**	**5**	**5**	**5**	**35**	**5**	**40**	**100 %**

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

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

K1- Remember, **K2-**Understand, **K3-**Apply, **K4-**Analyse, **K5-**Synthesis

EVALUATION PATTERN

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

C1 – Conducted for 30 marks and converted into 10 marks

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	POs ADDRESSED
CO 1	Explain the basic concepts in computer graphics.	K2	PSO1& PSO2	PO1
CO 2	Analyze various algorithms and to convert the basic geometrical primitives.	K2, K3	PSO3& PSO4	PO2
CO 3	Demonstrate the importance of viewing and clipping.	K2, K4	PSO5	PO4
CO 4	Discuss the fundamentals of animation	K2, K3 & K4	PSO6	PO2
CO 5	Describe Interpolation-Based Animation	K3& K5	PSO7	PO3

Mapping COs Consistency with PSOs

CO/ PSO	PSO1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO1	3	3	1	1	1	2	2
CO2	1	1	3	3	1	2	2
CO3	2	2	2	2	3	2	2
CO4	2	2	2	2	1	3	1
CO5	2	2	2	2	1	1	3

Mapping COs Consistency with POs

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

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

COURSE DESIGNER:
Dr.S.Arul Jothi

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HOD'S Signature & Name

I M.Sc. Computer Science

SEMESTER –I

For those who joined in 2023 onwards

PROGRAMME CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS/ WEEK	CREDITS
PSCS	23PG1BE3	ADVANCED DATABASE SYSTEMS	Elective	5	3

COURSE DESCRIPTION

Advanced Database System Concepts provides in-depth level knowledge of SQL for design of relational Database and process the data using PL/SQL. It also facilitates the students to acquire the knowledge of different types of Databases.

COURSE OBJECTIVES

- To understand intermediate and advanced SQL.
- To learn different types of normalisation techniques and Transaction Mechanism
- To learn Parallel and Distributed Data Bases.

UNITS

UNIT I: INTRODUCTION TO SQL (15 HRS)

Overview of the SQL Query Language - SQL Data Definition - Basic Structure of SQL Queries - Additional Basic Operations - Set Operations - Null Values Aggregate Functions - Nested Sub queries -Modification of the Database.

INTERMEDIATE SQL: Join Expressions -Views -Transactions -Integrity Constraints -SQL Data Types and Schemas - Authorization.

UNIT II: ADVANCED SQL: (15 HRS)

Accessing SQL From a Programming Language -Functions and Procedures - Triggers -Recursive Queries-Advanced Aggregation Features, OLAP.

UNIT III: RELATIONAL DATABASE DESIGN : (15 HRS)

Features of Good Relational Designs - Atomic Domains and First Normal Form -Decomposition Using Functional Dependencies - Functional-Dependency Theory - Algorithms for Decomposition .

UNIT IV: TRANSACTION: (15 HRS)

Transaction Concept - A Simple Transaction Model - Storage Structure - Transaction Atomicity and Durability - Transaction Isolation - Serializability - Transaction Isolation and Atomicity -Transaction Isolation Levels - Implementation of Isolation Levels - Transactions as SQL Statements

UNIT V: PARALLEL AND DISTRIBUTED DATABASES (15 HRS)

Introduction -I/O Parallelism -Interquery Parallelism -Intraquery Parallelism -Intraoperation Parallelism -Interoperation Parallelism.

Distributed Databases : Homogeneous and Heterogeneous Databases - Distributed Data Storage -Distributed Transactions -Commit Protocols - Concurrency Control in Distributed Databases .

.

SELF STUDY:

UNIT V:

TEXT BOOK

1. Database System Concepts-— 6th ed. ,Abraham Silberschatz, Henry F. Korth S. Sudarshan, McGraw-Hill Companies, Inc., 1221 Avenue of the Americas, New York, NY 10020. Copyright © 2011

Chapter: 3, 4, 5, 8.1-8.5, 14, 18.1- 18.6, 19.1 -19.5

REFERENCES:

1. Database Management Systems,*by* *RaghRamakrishnan and* *Johannes Gehrke* , 3rd *Edition* , McGraw Hill Education,2014

2. ***Database system Concepts***, Abraham silberschatz, Henry F.Korth, S.Sudharshan, MGH, 6th Edition, 2013.

3. Fundamentals of Database System, RamezElmasri, Shamkant B. Navathe, Pearson Education Publications, 6th Edition, 2017

Digital Open Educational Resources (DOER)

1. https://www.geeksforgeeks.org/introduction-of-dbms-database-management-system-set-1/
2. https://www.bmc.com/blogs/dbms-database-management-systems/
3. https://www.tutorialspoint.com/dbms/index.htm

Levels	C1	C2	C3	C4	C5	Total Scholastic Marks	Non Scholastic Marks C6	CIA Total	% of Assessment
	T1 10 Mks.	T2 10 Mks.	Seminar 5 Mks.	Assignment 5 Mks	OBT/PPT 5 Mks	35 Mks.	5 Mks.	40Mks.	
K2	4	4	-	-	-	8	-	8	20 %
K3	2	2	-	5	-	9	-	9	22.5 %
K4	2	2	-	-	5	9	-	9	22.5 %
K5	2	2	5	-	-	9	-	9	22.5 %
Non Scholastic	-	-	-	-	-		5	5	12.5 %
Total	10	10	5	5	5	35	5	40	100 %

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

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

K1- Remember, **K2**-Understand, **K3**-Apply, **K4**-Analyse, **K5**-Synthesis

EVALUATION PATTERN

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

C1 – Conducted for 30 marks and converted into 10 marks

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	POs ADDRESSED
CO 1	Demonstrate Database operations using SQL Procedures Functions and Triggers	K3/K4	PSO1& PSO2	PO1
CO 2	Identify approaches for accessing SQL from general purpose Programming Languages.	K1/K2	PSO3& PSO4	PO2
CO 3	Analyse different types of Normalisation techniques.	K3/K4	PSO5	PO4
CO 4	Apply the concepts of Transaction Mechanism using PL/SQL	K3/K4	PSO6	PO2
CO 5	Understand the concept of Parallel and Distributed Databases.	K1/K2	PSO7	PO3

Mapping COs Consistency with PSOs

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

Mapping COs Consistency with POs

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

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

COURSE DESIGNER:
Dr.T.Vasantha

Forwarded By

(Dr.S.Vidya)

HOD'S Signature & Name

I M.Sc. Computer Science

SEMESTER –I

For those who joined in 2023 onwards

PROGRAMME CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS/ WEEK	CREDITS
PSCS	23PG1BE4	OBJECT ORIENTED ANALYSIS AND DESIGN & C++	ELECTIVE	5	3

COURSE DESCRIPTION

This course helps to provide the fundamental knowledge of a programming language and its features which enhances the user to write general purpose application programs..

COURSE OBJECTIVES

The main objectives of this course are to:

1. Present the object model, classes and objects, object orientation, machine view and model management view.
2. Enables the students to learn the basic functions, principles and concepts of object oriented analysis and design.
3. Enable the students to understand C++ language with respect to OOAD

UNITS

Unit:1 OBJECTMODEL (15 Hrs)

The Object Model: The Evolution of the Object Model – Elements of the Object Model – Applying the Object Model. Classes and Objects: The Nature of an Object – Relationship among Objects.

Unit:2 CLASSES AND OBJECTS (15 Hrs)

Classes and Object: Nature of Class – Relationship Among classes – The Interplay of classes and Objects. Classification: The importance of Proper Classification –identifying classes and objects –Key Abstractions and Mechanism.

Unit:3 C++ INTRODUCTION (15 Hrs)

Introduction to C++- Input and output statements in C++-Declarations-control structures – Functions in C++.

Unit:4 INHERITANCE AND OVERLOADING (13 Hrs) Classes and Objects– Constructors and Destructors–operators overloading–Type Conversion- Inheritance – Pointers and Arrays.

Unit:5 POLYMORPHISM AND FILES (15 Hrs)

MemoryManagementOperators-Polymorphism–Virtualfunctions–Files–Exception Handling – String Handling -Templates.

Unit:6 Contemporary Issues (2 Hrs)

Expert lectures, online seminars – webinars

TEXT BOOKS

"Object Oriented Analysis and Design with Applications", Grady Booch, Second Edition, Pearson Education.

"Object-Oriented Programming with ANSI & TurboC++", Ashok N.Kamthane, First Indian Print -2003, Pearson Education.

Reference Books

Balagurusamy "Object Oriented Programming with C++", TMH, Second Edition, 2003.

Digital Open Educational Resources (DOER)

1. https://onlinecourses.nptel.ac.in/noc19_cs48/preview
2. https://nptel.ac.in/noc/courses/noc16/SEM2/noc16-cs19/
3. https://www.tutorialspoint.com/object_oriented_analysis_design/ooad_object_oriented_analysis.htm

Levels	C1	C2	C3	C4	C5	Total Scholastic Marks	Non Scholastic Marks C6	CIA Total	% of Assessment
	T1 10 Mks.	T2 10 Mks.	Seminar 5 Mks.	Assignment 5 Mks	OBT/PPT 5 Mks	35 Mks.	5 Mks.	40Mks.	
K2	4	4	-	-	-	8	-	8	20 %
K3	2	2	-	5	-	9	-	9	22.5 %
K4	2	2	-	-	5	9	-	9	22.5 %
K5	2	2	5	-	-	9	-	9	22.5 %
Non Scholastic	-	-	-	-	-		5	5	12.5 %
Total	10	10	5	5	5	35	5	40	100 %

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

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

K1- Remember, **K2**-Understand, **K3**-Apply, **K4**-Analyse, **K5**-Synthesis

EVALUATION PATTERN

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

C1 – Conducted for 30 marks and converted into 10 marks

COURSE OUTCOMES (CO)

NO.	COURSE OUTCOMES	KNOWLEDGE LEVEL (ACCORDING TO REVISED BLOOM'S TAXONOMY)	PSOs ADDRESSED	POs ADDRESSED
CO 1	Understand the concept of Object-Oriented development and modelling techniques	K2,K3	PSO1& PSO2	PO1
CO 2	Gain knowledge about the various steps performed during object design	K2,K3	PSO3& PSO4	PO2
CO 3	Abstract object-based views for generic software systems	K3,K4	PSO2 &PSO5	PO3
CO 4	Link OOAD with C++ language	K4,K5	PSO6 &PSO7	PO2 & PO3
CO 5	Apply the basic concept of OOPs and familiarize to write C++ program	K3,K5	PSO1 &PSO3	PO4

Mapping COs Consistency with PSOs

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

Mapping COs Consistency with POs

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

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

COURSE DESIGNER:
Dr.T.Vasantha

Forwarded By

(Dr.S.Vidya)

HOD'S Signature & Name

I M.Sc. Computer Science

SEMESTER –I

For those who joined in 2023 onwards

PROGRAMME CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS/WEEK	CREDITS
PSCS	23PG1BAE	WEB DEVELOPMENT	Ability Enhancement Course	2	1

COURSE DESCRIPTION

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

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 a 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: OVERVIEW OF HTML (6 Hrs)

Fundamentals of HTML - Root Elements-Metadata Elements- Section Elements-Heading Elements-Flow Elements- Phrasing Elements- Embedded Elements- Interactive Elements –Working with Headings-Character Entities – Horizontal Rules – Line Breaks – Paragraph – Citations – Quotations – Definitions - Comments.

UNIT II: WORKING WITH TEXT (6Hrs) Working with Text - Formatting Text with HTML Elements – Physical styles – Logical styles – Defining the MARK Element- Defining the STRONG Element- Defining the CODE Element- Defining the SMALL Element.

UNIT III: ORGANIZING TEXT (6 Hrs)

Organizing Text in HTML -Arranging text – Allowing Word Breaks- Defining the preformatted Text - DIV Element and SPAN Element – Formatting Text in Tables - Creating Ruby (Captioned) Text – Displaying List-Immediate Solutions : Allowing Word Breaks Using the WBR Element – Displaying The

Preformatted Text – Using the DIV Element - Positionaing Text Using the DIV Element – Using the SPAN Element – Formatting Text Using Tables – Creating the Ruby Text – Creating Lists.

UNIT IV: CREATING TABLES (6 Hrs)

Creating Tables - Understanding Tables – Describing the TABLE Elements – CAPTION –COLGROUP – COL – TBODY – THEAD – TFOOT – TR – TD and TH - Creating a Simple Table – Adding a Title to a Table – Caption to a Table – Specifying the Properties of the Columns – Spanning Rows and Columns – Using Images in a Table.

UNIT V: UNDERSTANDING CSS (6 Hrs)

Overview of CSS – Discussing the Evolution of CSS – Understanding the Syntax of CSS – Exploring CSS Selectors – Inserting CSS in an HTML Document.

SELF STUDY:

UNIT I: Working with Headings-Character Entities – Horizontal Rules – Line Breaks – Paragraph – Citations – Quotations – Definitions - Comments

UNIT III: Arranging text – Allowing Word Breaks- Defining the preformatted Text - DIV Element and SPAN Element – Formatting Text in Tables - Creating Ruby (Captioned) Text

UNIT IV: Adding a Title to a Table – Caption to a Table – Specifying the Properties of the Columns

TEXT BOOK

HTML5 Black Book, Kogent Learning Solutions Inc., Dreamtech Press, 2012. Chapters (Page Numbers) : 2(31-50 & 68-76) ; 3(77-94); 4(113-128) ; 6 (145-164) ; 18 (465-476)

REFERENCES

1. ***Sergey's HTML5 & CSS3 Quick Reference: Color Edition,*** Sergey Mavrody, Published 16 Nov 2009.
2. ***HTML5: The Missing Manual,*** Matthew MacDonald,Published in 2011.
3. ***Head First HTML5 Programming: Building Web Apps with JavaScript,*** Elisabeth Freeman and Eric Freeman, Published in 2011.
4. ***Beginning HTML5 and CSS3 For Dummies,*** Chris Minnick and Ed Tittel, Published 2013.

Digital Open Educational Resources (DOER)

1. https://www.tutorialspoint.com/html5/index.htm
2. https://www.w3schools.com/html/default.asp
3. https://www.tutorialrepublic.com/html-tutorial/
4. https://www.cs.uct.ac.za/mit_notes/web_programming.html

Levels	C1	C2	C3	C4	C5	Total Scholastic Marks	Non Scholastic Marks C6	CIA Total	% of Assessment
	T1 10 Mks.	T2 10 Mks.	Seminar 5 Mks.	Assignment 5 Mks	OBT/PPT 5 Mks	35 Mks.	5 Mks.	40Mks.	
K2	4	4	-	-	-	8	-	8	20 %
K3	2	2	-	5	-	9	-	9	22.5 %
K4	2	2	-	-	5	9	-	9	22.5 %
K5	2	2	5	-	-	9	-	9	22.5 %
Non Scholastic	-	-	-	-	-		5	5	12.5 %
Total	10	10	5	5	5	35	5	40	100 %

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

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

K1- Remember**,** **K2-**Understand**,** **K3-**Apply**,** **K4-**Analyse, **K5-** Synthesis

EVALUATION PATTERN

	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 OUTCOMES	KNOWLEDGE LEVEL (ACCORDING TO REVISED BLOOM'S TAXONOMY)	PSOs ADDRESSED	POs ADDRESSED
CO 1	Define various tags of HTML	K1	PSO1& PSO2	PO1
CO 2	Design a web page with attractive display	K3	PSO3& PSO7	PO2
CO 3	Create a Layout for a webpage using Block tags	K3	PSO4	PO4
CO 4	Explain how and where to apply CSS	K3	PSO6	PO3
CO 5	Analyze content to design website	K4	PSO5	PO4

Mapping COs Consistency with PSOs

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

Mapping COs Consistency with POs

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

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

COURSE DESIGNER:

Dr.S.Arul jothi

Forwarded By

(Dr.S.Vidya)

HOD'S Signature & Name

I M.Sc. Computer Science

SEMESTER –II

For those who joined in 2023 onwards

PROGRAMME CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS/ WEEK	CREDITS
PSCS	23PG2B4	ADVANCED JAVA PROGRAMMING	CORE	6	5

COURSE DESCRIPTION

Advanced Programming in Java consists of Networking concepts, GUI Programming with Swing and Swing Menus, JDBC and JSP.

COURSE OBJECTIVES

- To understand the Networking concept using TCP/IP and RMI.
- To design and develop java program using Swings Components.
- To implement Server Side Program with Servlets.
- To understand and develop java program using JSP.

UNITS

UNIT I: NETWORKING (18 Hrs)

Networking: Networking Basics – The Networking Classes and Interfaces – Inet Address – Inet4Address and Inet6Address - TCP/IP Client Sockets – URL – URL Connection – HttpURLConnection – The URI Class – Cookies – TCP/IP Server Sockets – Datagrams. Regular Expressions and other Packages: The Core Java API Packages - Regular Expression Processing – Reflection – RMI.

UNIT II: SWINGS (18 Hrs)

GUI Programming with Swing: Introducing Swing – Two key swing features – The MVG Connection – Components and Containers – Swing Packages – Event Handling – Swing Applet – Painting in Swing.

Exploring Swing: JLabel and ImageIcon – JTextField – The Swing Buttons – JTabbedPane – JScrollPane – JList – JComboBox – Trees – JTable.

UNIT III: SWING MENUS (18 Hrs)

Swing Menus: Menu Basics – Overview of JMenuBar, JMenu, and JMenuItem – Create a Main Menu – Add Mnemonics and Accelerators to Menu Items – Add Images and Tooltips to Menu Items – Use JRadioButtonMenuItem and JCheckBoxMenuItem – Create a Popup Menu – Create a Toolbar – Use Actions – Entire MenuDemo Program Together.

UNIT IV: JDBC **(18 Hrs)**

JDBC- Java Database Connectivity: Introducing JDBC Driver Types - Creating Your First First JDBC Program – Performing Batch Updates – Using Save points - Configuring the JDBC-ODBC Bridge- Explaining Database Connection pools and data sources-Revisiting DBProcessor-Using the RowSet Interface. Servlets: The Life Cycle of a Servlet – Servlet Development Options – Using Tomcat – Simple Servlet – The Servlet API – The javax.servlet Package – Reading Servlet Parameters – The javax.servlet.http Package – Handling HTTP Requests and Responses – Using Cookies – Session Tracking.

UNIT V: JSP **(18 Hrs)**

JSP: Introducing JSP – Examining MVC and JSP - JSP Scripting Elements and Directives –Working with Variable Scopes – Error pages – Using java Beans – Designing an online Store with JSP – Simple programs using JSP. Using JSP Tag Extensions– Use of Tag Extensions - Explaining custom tag concepts – Explaining taglib mapping – Understanding Tag Handlers – Exploring Dynamic Attributes.

SELF STUDY:

UNIT II: The MVG Connection – Components and Containers

UNIT III: Create a Popup Menu – Create a Toolbar

UNIT IV: Servlet Development Options – Using Tomcat – Simple Servlet

UNIT V: Using JSP Tag Extensions– Use of Tag Extensions - Explaining custom tag concepts

TEXT BOOKS

1. ***Java The Complete Reference,*** Herbert Schildt 9th Edition, Mc Graw Hill Education, 2016.

Chapters: 22, 30, 31, 32, 33,38

2. ***James McGovern***, Rahim Adatia and others, ***J2EE 1.4 Bible,*** 1st Edition, Wiley India (P) Ltd, (2008).

Chapters: 6,7,18

REFERENCES:

1. ***Java How to program,*** Paul Deitel& Harvey Deitel, 10th Edition, Pearson Publications, 2014.

2. ***Java in a Nutshell,*** David Flnagan, 5th Edition, O'Reilly Media Inc., 2014.

3. ***J2EE : The Complete Reference,*** Jim Keogh, Tata McGraw-Hill Publishing Company Limited , New Delhi, 1st Edition, 18th Reprint 2008.

4. ***Thinking in Java,*** Harry H.Chaudhary, Bruce Eckel, 4th Edition, Prentice Hall Publications, 2006.

5. ***Java2 (JDK 5 edition) Programming Black Book,*** Steven Holzner et al., Dreamtech Press, New Delhi 2006.

Digital Open Educational Resources (DOER)

1.https://www.udemy.com/course/advanced-java-programming

2. https://nareshit.in/advanced-java-training/

3.https://www.youtube.com/watch?v=Ae-r8hsbPUo

Levels	C1	C2	C3	C4	C5	Total Scholastic Marks	Non Scholastic Marks C6	CIA Total	% of Assessment
	T1 10 Mks.	T2 10 Mks.	Seminar 5 Mks.	Assignment 5 Mks	OBT/PPT 5 Mks	35 Mks.	5 Mks.	40 Mks.	
K2	4	4	-	-	-	8	-	8	20 %
K3	2	2	-	5	-	9	-	9	22.5 %
K4	2	2	-	-	5	9	-	9	22.5 %
K5	2	2	5	-	-	9	-	9	22.5 %
Non Scholastic	-	-	-	-	-		5	5	12.5 %
Total	10	10	5	5	5	35	5	40	100 %

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

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

K1- Remember, **K2**-Understand, **K3**-Apply, **K4**-Analyse, **K5**-Synthesis

EVALUATION PATTERN

	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)

NO.	COURSE OUTCOMES	KNOWLEDGE LEVEL (ACCORDING TO REVISED BLOOM'S TAXONOMY)	PSOs ADDRESSED	POs ADDRESSED
CO 1	Describe client/server applications, TCP/IP socket programming and distributed applications using RMI.	K2,K3	PSO1& PSO2	PO1
CO 2	Analyze and design Window based applications using Swing Objects.	K2,K3	PSO3& PSO4	PO2
CO 3	Develop and design Java programs using Swing components	K3,K4	PSO2 &PSO5	PO3
CO 4	Discuss the various JDBC drivers and demonstrate J2EE application using JDBC connection and server side programs with Servlets.	K4,K5	PSO6 &PSO7	PO2 & PO3
CO 5	Write component-based Java programs using. JavaBeans.	K3,K5	PSO1 &PSO3	PO4

Mapping COs Consistency with PSOs

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

Mapping COs Consistency with POs

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

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

COURSE DESIGNER:
Dr.T.Vasantha

Forwarded By

(Dr.S.Vidya)

HOD'S Signature & Name

I M.Sc. Computer Science

SEMESTER –II

For those who joined in 2023 onwards

PROGRAMME CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS/ WEEK	CREDITS
PSCS	23PG2B5	DATA MINING AND WAREHOUSING	CORE	6	5

COURSE DESCRIPTION

Data Mining and Data Warehousing consists of introduction about data mining, data pre-processing, mining frequent pattern, association, classification and cluster analysis and applications of data mining

COURSE OBJECTIVES

- To interpret the contribution of data mining and data warehousing to the decision support level of organizations
- To understand different models used for OLAP and data pre-processing
- To categorize and differentiate between situations for applying different data mining techniques: mining frequent pattern, association, classification and cluster analysis
- To utilize Data Mining techniques in various real applications

UNITS

UNIT I: INTRODUCTION (18 Hrs)

Introduction to Data Mining-its importance — Data Mining on what kind of Data- Data Mining Functionalities-What Kinds of Patterns Can Be Mined – Are All of the Patterns Interesting – Classification of Data Mining Systems – Data Mining Task Primitives – Integration of Data Mining System with a Database or Data Warehouse System – Major Issues in Data Mining.

UNIT II: DATA PREPROCESSING (18 Hrs)

Need to Pre-process the Data - Descriptive Data Summarization – Data Cleaning – Data Integration and Transformation – Data Reduction – Data Discretization and Concept Hierarchy Generation. Data Warehouse and OLAP Technology : An Overview - What is a Data Warehouse – A Multidimensional Data Model – Data Warehouse Architecture – Data Warehouse Implementation.

UNIT III: MINING FREQUENT PATTERNS AND CLASSIFICATION (18 Hrs)

Efficient and Scalable Frequent Itemset Mining Methods: The Apriori

Algorithm : Finding Frequent Itemsets Using Candidate Generation- Generating Association Rules from Frequent Itemsets- Improving the Efficiency of Apriori – Mining Frequent Itemsets without Candidate Generation- Mining Frequent Itemsets Using Vertical Data Format – Mining Closed Frequent Itemsets. Classification - Prediction – Issues Regarding Classification and Prediction – Classification by Decision Tree Induction – Bayesian Classification – Rule-Based Classification – Classification by Back propagation.

UNIT IV: CLUSTER ANALYSIS (18 Hrs)

What is Cluster Analysis – Types of Data in Cluster Analysis – A Categorization of Major Clustering Methods – Partitioning Methods – Hierarchical Methods – Density-Based Methods – Grid-Based Methods – Model.

UNIT V: APPLICATIONS AND TRENDS IN DATA MINING (18 Hrs)

Data Mining Applications – Data Mining System Products and Research Prototypes – Additional Themes on Data Mining – Social Impacts of Data Mining – Trends in Data Mining.

SELF STUDY:

UNIT I: Integration of Data Mining System with a Database or Data Warehouse System

UNIT II: A Multidimensional Data Model – Data Warehouse Architecture

UNIT IV: Grid-Based Methods – Model-Based Clustering Methods.

UNIT V: Data Mining System Products and Research Prototypes – Additional Themes on Data Mining

TEXT BOOK

Data Mining Concepts and Techniques, Jiawei Han and Micheline Kamber, 2nd Edition, Morgan Kaufmann Publishers An Imprint of Elsevier, 2009.

Chapters:1, 2, 3, 5.2, 6.1 - 6.7, 7.1 – 7.8, 11

REFERENCES:

1. ***Data Mining Techniques and Applications: An Introduction,***Hongbo DLL, Cengage Lmg Business Press, 2010.
2. ***Data Warehousing: Concepts, Techniques, Products and Applications***, 3rd Edition, PHI Learning, Delhi, 2012.
3. ***Data Mining & Data Warehousing***, Udit Agarwal, 1st Edition, S.K.Kataria& sons Publication, 2016.
4. ***Data Mining: Concepts and Techniques***, Jiawei Han, Micheline Kamber, 3rd Edition Morgan Kauffmann Publishers, 2011.

Digital Open Educational Resources (DOER)

1. https://hanj.cs.illinois.edu/bk3/bk3_slidesindex.htm
2. https://www.guru99.com/data-mining- tutorial.html
3. https://www.youtube.com/watch?v=syY4tCAxGfk

Levels	C1	C2	C3	C4	C5	Total Scholastic Marks	Non Scholastic Marks C6	CIA Total	% of Assessment
	T1 10 Mks.	T2 10 Mks.	Seminar 5 Mks.	Assignment 5 Mks	OBT/ PPT 5 Mks	35 Mks.	5 Mks.	40Mks.	
K2	4	4	-	-	-	8	-	8	20 %
K3	2	2	-	5	-	9	-	9	22.5 %
K4	2	2	-	-	5	9	-	9	22.5 %
K5	2	2	5	-	-	9	-	9	22.5 %
Non Scholastic	-	-	-	-	-		5	5	12.5 %
Total	10	10	5	5	5	35	5	40	100 %

CIA	
Scholastic	35
Non Scholastic	5
	40

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

K1- Remember, **K2-**Understand, **K3-**Apply, **K4-**Analyse, **K5-** Synthesis

EVALUATION PATTERN

	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 OUTCOMES	KNOWLEDGE LEVEL (ACCORDING TO REVISED BLOOM'S TAXONOMY)	PSOs ADDRESSED	POs ADDRESSED
CO 1	Explain the fundamental concept of Data Mining and analyze and evaluate the data cleaning, integration , transformation and reduction techniques	K1	PSO1& PSO2	PO1
CO 2	Design multidimensional data using Data Warehouse architecture.	K1,,K2	PSO3& PSO4	PO2
CO 3	Design and evaluate Classification algorithms	K1,K3,K4	PSO7	PO3
CO 4	Identify the types of data in Cluster Analysis and categorize the Cluster Methods	K3,K4	PSO5	PO3
CO 5	Utilize the Data Mining techniques in various real applications and in major issues	K1,K2	PSO6, PSO7	PO4

Mapping COs Consistency with PSOs

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

Mapping COs Consistency with POs

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

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

COURSE DESIGNER:
Dr. T.Vasantha

Forwarded By

(Dr.S.Vidya)

HOD'S Signature & Name

I M.Sc. Computer Science

SEMESTER –II

For those who joined in 2023 onwards

PROGRAMME CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS/WEEK	CREDITS
PSCS	**23PG2B6**	**ADVANCED JAVA PROGRAMMING LAB**	**CORE**	**6**	**4**

COURSE DESCRIPTION

Advanced Programming in Java consists of Networking concepts, GUI Programming with Swing and Swing Menus, JDBC and JSP.

COURSE OBJECTIVES

- To develop java programs using TCP/IP and RMI.
- To design and develop java programs using Swings Components.
- To implement Server Side Program with Servlets.
- To develop java programs using JSP.

Programs are written using the following concepts

1. NETWORKS- TCP/IP
2. REGULAR EXPRESSION
3. RMI
4. GUI Programming with Swing and Swing Components
5. Java Database Connectivity
6. SERVLET
7. JSP

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

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

K1- Remember, **K2**-Understand, **K3**-Apply, **K4**-Analyse, **K5**-Synthesis

EVALUATION PATTERN

SCHOLASTIC		NON - SCHOLASTIC	MARKS		
C1	C2	C3	CIA	ESE	Total
25	10	5	40	60	100

C1 – Average of Two Monthly Tests

C2 – Average of Weekly Tests

C3 – Non – Scholastic

COURSE OUTCOMES

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	PSOs ADDRESSED
CO 1	Implementation of java applications that illustrate professionally acceptable coding and performance standards.	K2	PSO1& PSO2	PO1& PO2
CO 2	Develop distributed applications using RMI.	K2, K3	PSO3& PSO4	PO1& PO2
CO 3	Design and development-driven programming and graphical user interfaces using Swing-based GUI.	K2, K4	PSO5	PO3 & PO4
CO 4	Design and develop Java programs using JDBC connection for data access and also Develop server side programs with Servlets.	K2, K3 & K4	PSO6	PO3 & PO4
CO 5	Design and develop component-based Java programs using JavaBeans.	K3& K5	PSO7	PO3 & PO4

Mapping COs Consistency with PSOs

CO/ PSO	PSO1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO1	2	2	2	2	2	2	2
CO2	2	2	3	2	2	2	2
CO3	2	2	2	3	2	2	2
CO4	2	2	2	2	2	2	1
CO5	2	2	2	2	2	1	2

Mapping of COs with POs

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

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

COURSE DESIGNER:
Dr. G.Germine Mary

Forwarded By

(Dr.S.Vidya)

HOD'S Signature & Name

I M.Sc. Computer Science

SEMESTER –II

For those who joined in 2023 onwards

PROGRAMME CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS/ WEEK	CREDITS
PSCS	23PG2BE5	DATA MINING LAB USING R	ELECTIVE	4	3

COURSE DESCRIPTION

Data Mining and Data Warehousing consists of introduction about data mining, data warehousing, data pre-processing, :mining frequent pattern, association, classification and cluster analysis and applications of data mining.

COURSE OBJECTIVES

- To assess data pre-processing steps involved in different datasets
- To evaluate classification algorithms using Weka tool with sample data.
- To evaluate cluster algorithms using Weka tool with sample data.

SYLLABUS

DATA MINING USING R

1. Implement Apriori algorithm to extract association rule of data mining.
2. Implement k-means clustering technique.
3. Implement any one Hierarchal Clustering.
4. Implement Classification algorithm.
5. Implement Decision Tree.
6. Linear Regression.
7. Data Visualization.

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

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

K1- Remember, **K2**-Understand, **K3**-Apply, **K4**-Analyse, **K5**-Synthesis

EVALUATION PATTERN

SCHOLASTIC		NON - SCHOLASTIC	MARKS		
C1	C2	C3	CIA	ESE	Total
25	10	5	40	60	100

C1 – Average of Two Monthly Tests

C2 – Average of Weekly Tests

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	POs ADDRESSED
CO 1	Utilize Weka tool to evaluate Data Mining algorithms.	K1,K2	PSO1& PSO2	PO1
CO 2	Demonstrate pre-processing steps involved in different datasets.	K2,K3	PSO3	PO2
CO 3	Develop the decision tree algorithm using different datasets	K3,K4	PSO4	PO3
CO 4	Demonstrate the classification and clusters algorithms using large datasets.	K3,K4	PSO5 & PSO6	PO4
CO 5	Analyse Data Mining techniques for realistic data.	K1, K3, K4	PSO7	PO4

Mapping COs Consistency with PSOs

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

Mapping COs Consistency with POs

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

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

COURSE DESIGNER:

Dr.T.Vasantha

Forwarded By

(Dr.S.Vidya)

HOD'S Signature & Name

I M.Sc. Computer Science

SEMESTER –II

For those who joined in 2023 onwards

PROGRAMME CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS/WEEK	CREDITS
PSCS	23PG2BE6	OPERATING SYSTEM LAB	ELECTIVE	4	3

COURSE DESCRIPTION

In this lab students are able to describe and use the fundamental LINUX system tools and utilities.

COURSE OBJECTIVE/S

- To introduce the students to LINUX kernel programming
- To make the students aware of the features and capabilities of Linux so that they can utilize its improved functionalities
- To develop new Linux based software and can also contribute to the development of the operating system itself.

Programs are written using the following concepts:

Shell Script using Linux:

- To demonstrate various Shell commands like cat, grep, ls, more, ps, chmod, finger, ftp, etc.,
- Shell script to perform simple mathematical operations
- Shell script to perform string operations
- Shell script program to manipulate files
- Shell script to illustrate various system configurations
- Creating user accounts, switching user accounts, setting umask
- Linux general purpose utilities
- Shell script to customize user environment

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

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

K1- Remember**,** **K2-**Understand**,** **K3-**Apply**,** **K4-**Analyse, **K5-**Synthesis

EVALUATION PATTERN

SCHOLASTIC		NON - SCHOLASTIC	MARKS		
C1	**C2**	**C3**	**CIA**	**ESE**	**Total**
25	**10**	**5**	**40**	**60**	**100**

C1 – Average of Two Monthly Tests

C2 – Average of Weekly Tests

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	POs ADDRESSED
CO 1	Utilize basic LINUX Utilities.	K3/K4	PSO1& PSO2	PO1
CO 2	Write different LINUX shell scripts and execute various shell programs.	K3/K4	PSO3& PSO7	PO2
CO 3	Apply LINUX system calls.	K3/K4	PSO5	PO2
CO 4	Compute various file permissions and have a basic understanding of system security.	K3/K4	PSO4	PO3
CO 5	Demonstrate the basic knowledge of Linux commands and file handling utilities by using Linux shell environment.	K1/K2	PSO6	PO4

Mapping COs Consistency with PSOs

CO/ PSO	PSO1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO1	2	3	1	2	2	2	2
CO2	1	1	3	2	2	2	2
CO3	2	2	2	1	1	2	2
CO4	2	2	2	2	2	2	2
CO5	2	2	2	1	2	3	1

Mapping of C0s with POs

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

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

COURSE DESIGNER:
Dr.S.Arul Jothi

Forwarded By

(Dr.S.Vidya)

HOD'S Signature & Name

I M.Sc. Computer Science

SEMESTER –I

For those who joined in 2023 onwards

PROGRAMME CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS/ WEEK	CREDITS
PSCS	23PG2BE7	ADVANCED OPERATING SYSTEMS	ELECTIVE	4	3

COURSE DESCRIPTION

To understand the concept of design and implementation in the context of distributed operating systems.

COURSE OBJECTIVES

- To apply the concepts of distributed systems in designing large systems, and will additionally apply these concepts to develop sample systems.
- To recognize the inherent difficulties that arise due to distribution of computing resources.

UNITS

UNIT I : BASICS OF OPERATING SYSTEMS (12 hrs)

Basics of Operating Systems: What is an Operating System? – Main frame Systems –Desktop Systems – Multiprocessor Systems – Distributed Systems – Clustered Systems –Real-Time Systems – Handheld Systems – Feature Migration – Computing Environments -Process Scheduling – Cooperating Processes – Inter Process Communication- Deadlocks –Prevention – Avoidance – Detection – Recovery.

UNIT II : DISTRIBUTED OPERATING SYSTEMS (12 hrs)

Distributed Operating Systems: Issues – Communication Primitives – Lamports Logical Clocks – Deadlock handling strategies – Issues in deadlock detection and resolution-distributed file systems – design issues – Case studies – The Sun Network File System - Coda.

UNIT III : REAL TIME OPERATING SYSTEM (12 hrs)

Real time Operating Systems : Introduction – Applications of Real Time Systems – Basic Model of Real Time System – Characteristics – Safety and Reliability - Real Time Task Scheduling.

UNIT IV : HAND HELD SYSTEM (12 hrs)

Operating Systems for Handheld Systems: Requirements –Technology Overview–Handheld Operating Systems – Palm OS - Symbian Operating System – Android – Architecture of android– Securing handheld systems

UNIT V : CASE STUDIES (10 hrs)

Case Studies : Linux System: Introduction – Memory Management – Process Scheduling – Scheduling Policy - Managing I/O devices – Accessing Files- iOS : Architecture and SDK Framework - Media Layer - Services Layer - Core OS Layer - File System.

UNIT VI : CONTEMPORARY ISSUES (2 hrs)

Expert lectures, online seminars – webinars

SELF STUDY:

UNIT II

TEXT BOOK

1. Operating System Concepts, Abraham Silberschatz; Peter Baer Galvin; Greg Gagne, Seventh Edition, John Wiley & Sons, 2004.

2. Advanced Concepts in Operating Systems – Distributed, Database, and Multiprocessor Operating Systems, Mukesh Singhal and Niranjan G. Shivaratri, Tata McGraw-Hill, 2001.

REFERENCES:

1. Real-Time Systems: Theory and Practice, *Rajib Mall, Pearson Education India, 2006.*

2. An introduction to operating systems, concept and practice*, Pramod Chandra P.Bhatt,PHI,Third edition, 2010.*

3. Understanding the Linux kernel, *Daniel.P.Bovet & MarcoCesati, 3rdedition, O"Reilly, 2005.*

4. iPhone iOS4 Development Essentials –Xcode, *Neil Smyth, Fourth Edition, Payload media, 2011.*

Digital Open Educational Resources (DOER)

1. https://onlinecourses.nptel.ac.in/noc20_cs04/preview
2. https://www.udacity.com/course/advanced-operating-systems--ud189
3. https://minnie.tuhs.org/CompArch/Resources/os-notes.pdf

Levels	C1	C2	C3	C4	C5	Total Scholastic Marks	Non Scholastic Marks C6	CIA Total	% of Assessment
	T1 10 Mks.	T2 10 Mks.	Seminar 5 Mks.	Assignment 5 Mks	OBT/PPT 5 Mks	35 Mks.	5 Mks.	40Mks.	
K2	4	4	-	-	-	8	-	8	20 %
K3	2	2	-	5	-	9	-	9	22.5 %
K4	2	2	-	-	5	9	-	9	22.5 %
K5	2	2	5	-	-	9	-	9	22.5 %
Non Scholastic	-	-	-	-	-		5	5	12.5 %
Total	10	10	5	5	5	35	5	40	100 %

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

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

K1- Remember, **K2**-Understand, **K3**-Apply, **K4**-Analyse, **K5**-Synthesis

EVALUATION PATTERN

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

C1 – Conducted for 30 marks and converted into 10 marks

COURSE OUTCOMES (CO)

NO.	COURSE OUTCOMES	KNOWLEDGE LEVEL (ACCORDING TO REVISED BLOOM'S TAXONOMY)	PSOs ADDRESSED	POs ADDRESSED
CO 1	Understand the design issues associated with operating systems	K3/K4	PSO1& PSO2	PO3
CO 2	Master various process management concepts including scheduling, deadlocks and distributed file systems	K1/K2	PSO3& PSO4	PO2
CO 3	Prepare Real Time Task Scheduling	K3/K4	PSO5	PO1
CO 4	Analyze Operating Systems for Handheld Systems	K3/K4	PSO6	PO4
CO 5	Analyze Operating Systems like LINUX and iOS	K1/K2	PSO7	PO3

Mapping COs Consistency with PSOs

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

Mapping COs Consistency with POs

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

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

COURSE DESIGNER:
Dr.S.Arul Jothi

Forwarded By

(Dr.S.Vidya)

HOD'S Signature & Name

I M.Sc. Computer Science

SEMESTER –II

For those who joined in 2023 onwards

PROGRAMME CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS/ WEEK	CREDITS
PSCS	23PG2BE8	MULTIMEDIA TECHNOLOGIES	ELECTIVE	4	3

COURSE DESCRIPTION

This course explains the multimedia concepts, that is, image, text, sound, animation and the also it's applications.

COURSE OBJECTIVES

- To stress the importance of multimedia in today's requirements
- To understand the applications of multimedia in the development of current technologies.

UNITS

UNIT I **(12 HRS)**

INTRODUCTION: Definition – Use of Multimedia – Delivering Multimedia
TEXT : The Power of Meaning - About Fonts and Faces - Using Text in Multimedia
Computers and Text-Font Editing and Design Tools-Hypermedia and Hypertext.

UNIT II **(12 HRS)**

IMAGES: Before You Start to Create-Making Still Images-Color.
SOUND: The Power of Sound - Digital Audio - MIDI Audio - MIDI vs. Digital Audio -Multimedia System Sounds-Audio File Formats-Vaughan's Law of Multimedia Minimums-Adding Sound to Your Multimedia Project.

UNIT III **(12 HRS)**

ANIMATIONS: VAnimation - The Power of Motion -Principles of Animation - Animation by Computer -Making Animations That Work.
VIDEO: Using Video - How Video Works and Is Displayed - Digital Video Containers- Obtaining Video Clips-Shooting and Editing Video.

UNIT IV: **(12 HRS)**

MAKING MULTIMEDIA : Making Multimedia -Stages of a Multimedia Project -

The Intangibles – Hardware – Software – Authoring System. **Multimedia Skills.**

UNIT V: (12 HRS)

The Internet and Multimedia: History -Internetworking – Multimedia on the web.

Designing for the World Wide Web: Designing for the web-Text for the web-Images for the web-Sound for the web-Animation for the web-Video for the web,

SELF STUDY : UNIT V

TEXT BOOKS

Multimedia: Making it Work, Tay Vaughan, Published by McGraw – Hill Publishing Company Limited, 8thedition.

Chapter – 1-6, 12,13

REFERENCES

1. MULTIMEDIA COMPUTING By Dr.Tariq Hussain · Published by Booksclinic Publishing, 2020

2. Multimedia Applications By Ralf Steinmetz, Klara Nahrstedt · Digital Open Educational Resources (DOER) Published by Springer, March

3. Multimedia In Practice By Jeffcoate, *Published by Pearson Education*

Digital Open Educational Resources (DOER)

1. https://www.tutorialspoint.com/multimedia/multimedia_introduction.htm
2. https://www.geeksforgeeks.org/what-is-multimedia/

Levels	C1	C2	C3	C4	C5	Total Scholastic Marks	Non Scholastic Marks C6	CIA Total	% of Assessment
	T1 10 Mks.	T2 10 Mks.	Seminar 5 Mks.	Assignment 5 Mks	OBT/ PPT 5 Mks	35 Mks.	5 Mks.	40 Mks.	
K2	4	4	-	-	-	8	-	8	20 %
K3	2	2	-	5	-	9	-	9	22.5 %
K4	2	2	-	-	5	9	-	9	22.5 %
K5	2	2	5	-	-	9	-	9	22.5 %
Non Scholastic	-	-	-	-	-		5	5	12.5 %
Total	10	10	5	5	5	35	5	40	100 %

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

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

K1- Remember, **K2**-Understand, **K3**-Apply, **K4**-Analyse, **K5**-Synthesis

EVALUATION PATTERN

	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 OUTCOMES	KNOWLEDGE LEVEL (ACCORDING TO REVISED BLOOM'S TAXONOMY)	PSOs ADDRESSED	POs ADDRESSED
CO 1	Understand the basic concept of multimedia.	K1,K2	PSO1& PSO4	PO1
CO 2	Understand the concept behind the text and images, sound.	K1,K2	PSO3	PO1 & PO2
CO 3	Understand the concept behind the animation and video.	K3,K4	PSO4 &PSO5	PO1 & PO2
CO 4	Understand the concept behind the creation of multimedia applications	K1,K2	PSO6	PO3
CO 5	Understand the applications of multimedia in media	K2,K3	PSO7	PO4

Mapping COs Consistency with PSOs

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

Mapping of COs with POs

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

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

♦ **Weakly Correlated -1**

COURSE DESIGNER:

Dr.P.Meenakshi Sundari

Forwarded By

(Dr.S.Vidya)

HOD'S Signature & Name

I M.Sc. Computer Science

SEMESTER –II

For those who joined in 2023 onwards

PROGRAMME CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS/WEEK	CREDITS
PSCS	**23PG2BAE**	**WEB Designing using CSS & JavaScript**	**Ability Enhancement Course**	**4**	**2**

COURSE DESCRIPTION

This Course introduces basic web design using Hypertext Markup Language (HTML), Java script and Cascading Style Sheets (CSS). And this course provides knowledge to plan and design effective web pages with different text formatting and images to create websites.

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 a 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: OVERVIEW OF HTML (12 Hrs)

Fundamentals of HTML - Root Elements-Metadata Elements- Section Elements-Heading Elements-Flow Elements- Phrasing Elements- Embedded Elements- Interactive Elements –Working with Headings-Character Entities – Horizontal Rules – Line Breaks – Paragraph – Citations – Quotations – Definitions - Comments.

UNIT II: WORKING WITH TEXT & CREATING TABLES (12 Hrs)

Working with Text - Formatting Text with HTML Elements – Physical styles – Logical styles – Defining the MARK Element- Defining the STRONG Element- Creating Tables - Understanding Tables – Describing the TABLE Elements – CAPTION –COLGROUP – COL – TBODY – THEAD – TFOOT – TR – TD and TH - Creating a Simple Table – Adding a Title to a Table – Caption to a Table

UNIT III: HTML FORMS AND CONTROLS (12 Hrs)

Creating HTML forms – Buttons – Checkboxes – File input - For a From – Hidden data - Image Submit Buttons – Password Controls – Radio Buttons – Reset Buttons – Customizable Button – Select Control – Grouping and Labeling – An Index – Processing Secure Transactions - Events

UNIT IV: JAVA SCRIPT (12 Hrs)

Introduction to Java script – Adding JavaScript to XHTML documents - the<script> element – using the <script> element- event handlers – Java script core features – basic definitions – Language characteristics – variables-basic data types – composite types – Flow control statements-Loops – Input and Output in Java script

UNIT V: UNDERSTANDING CSS (12 Hrs)

Overview of CSS – Discussing the Evolution of CSS – Understanding the Syntax of CSS – Exploring CSS Selectors – Inserting CSS in an HTML Document.

SELF STUDY:

UNIT I: Working with Headings-Character Entities – Horizontal Rules – Line Breaks – Paragraph – Citations – Quotations – Definitions - Comments

UNIT III: Adding a Title to a Table – Caption to a Table – Specifying the Properties of the Columns

UNIT IV: Javascript core features – basic definitions – Language characteristics

TEXT BOOK

HTML5 Black Book, Kogent Learning Solutions Inc., Dreamtech Press, 2012.

JavaScript: The complete reference , Thomas Powell & Fritz Schneider ,2nd edition, Tata McGraw Hill Education Private Limited, New Delhi, 2014

REFERENCES

- ***Sergey's HTML5 & CSS3 Quick Reference: Color Edition,*** Sergey Mavrody, Published 16 Nov 2009.
- ***HTML5: The Missing Manual,*** Matthew MacDonald,Published in 2011.
- ***Head First HTML5 Programming: Building Web Apps with JavaScript,*** Elisabeth Freeman and Eric Freeman, Published in 2011.
- ***Beginning HTML5 and CSS3 For Dummies,*** Chris Minnick and Ed Tittel, Published 2013.

Digital Open Educational Resources (DOER)

1. https://www.tutorialspoint.com/html5/index.htm
2. https://www.w3schools.com/html/default.asp
3. https://www.tutorialrepublic.com/html-tutorial/
4. https://www.cs.uct.ac.za/mit_notes/web_programming.html

Levels	C1	C2	C3	C4	C5	Total Scholastic Marks	Non Scholastic Marks C6	CIA Total	% of Assessment
	T1 10 Mks.	T2 10 Mks.	Seminar 5 Mks.	Assignment 5 Mks	OBT/PPT 5 Mks	35 Mks.	5 Mks.	40Mks.	
K2	4	4	-	-	-	8	-	8	20 %
K3	2	2	-	5	-	9	-	9	22.5 %
K4	2	2	-	-	5	9	-	9	22.5 %
K5	2	2	5	-	-	9	-	9	22.5 %
Non Scholastic	-	-	-	-	-		5	5	12.5 %
Total	10	10	5	5	5	35	5	40	100 %

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

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

K1- Remember**,** **K2-**Understand**,** **K3-**Apply**,** **K4-**Analyse, **K5-** Synthesis

EVALUATION PATTERN

	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 OUTCOMES	KNOWLEDGE LEVEL (ACCORDING TO REVISED BLOOM'S TAXONOMY)	PSOs ADDRESSED	POs ADDRESSED
CO 1	Define various tags of HTML	K1	PSO1& PSO2	PO1
CO 2	Design a web page with attractive display	K3	PSO3& PSO7	PO2
CO 3	Create a Layout for a webpage using Block tags and java script	K3	PSO4	PO4
CO 4	Explain how and where to apply CSS	K3	PSO6	PO3
CO 5	Analyze content to design website	K4	PSO5	PO4

Mapping COs Consistency with PSOs

CO/ PSO	PSO1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO1	2	3	1	2	2	2	1
CO2	1	1	2	2	2	2	3
CO3	2	2	2	3	2	2	2
CO4	2	2	2	1	1	2	1
CO5	2	2	2	1	3	1	1

Mapping COs Consistency with POs

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

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

COURSE DESIGNER:

Dr.S.Arul jothi

Forwarded By

(Dr.S.Vidya)

HOD'S Signature & Name