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   : 2022 - 2023

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 Science

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

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

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

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

5. Mr. G. Sahaya Raj
Principal Software Engineer
Dell International Pvt. Ltd.
Bangalore

Industrialist

signature 3/4/23

6. Dr. S. Shaik Parveen
Assistant Professor
Dept. of Computer Science
The American College
Madurai

Alumna

signature 3/4/23

7. Dr. A. Rajeswari
Assistant Prof in chemistry
Fatima College

Dean of Academic Affairs
– Science

signature 3/4/2023

Staff Members of the Department

8. Dr. S. Vidya
Associate Professor

signature Vidya

9. Dr. K. Rosemary Euphrasia
Associate Professor

K. _signature_
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   C. Any
Assistant Professor.

AGIGNDA

1. Presentation of the action taken report of the previous BoS.
2. To pass the UG framework as suggested by TANSCHG
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 Architecture
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 Warehousing
DS — VI	13. Data Communications and Networking
DS — VI	14. Software Testing
DS — VI	15. Introduction to Artificial 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 Computer 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 dwelopment:

S.No	Course code	Course Title	NO,. of UNITS and the title revised and need for review on	'/. revised

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 Application 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.

P. Moenakshi.
3/4

T. Vasumathi
3/4/2023

3/4/23

3/4/2023

K. Murugavalli
3/4/2023

3/4/23

C. guy
3/4/2023

3/4/2023

3/4/23

Sandya
3/4/23

Animala
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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2023-2024 onwards. Convened on 3.4.2023
at 2pm in the Department of Computer Science

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   Head, Dept. of Computer Science   _germine Mary_
   Fatima college.   3/4/23

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   Assistant Professor
   Dept. of Computer Science   _M.dy_
   MK University College   3/4/23

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   Associate Professor
   Dept. of Computer Science   Absent
   MTWU, Kodaikanal

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   Associate Prof. & Head
   Dept. of Computer Science
   JA college   _Jtt 805_
   Periyakulam   3/4/23

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Dept. of Computer Science
The American college
Madurai

Alumna

_3/4/2023_

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Assistant Prof. in Chemistry

Dean of Academic
Affairs (Science)

_3/4/2023_

Staff members of the Department

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Associate Prof.

Vidya

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Associate Prof.

K. Rosemary Euphrasia 3/4/2023

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Vimala 3.4.2023

11. Dr. P. Meenakshi Sundari
Assistant Prof.

P. Meenakshi

12. Dr. S. Arul Jothi
Assistant Prof.

Absent

13. Dr. T. Vasantha
Assistant Prof.

T. Vasantha 3.4.2023

14. Ms. C. Swetha
Assistant Prof.

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 filting 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 Warehouse
	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 and discipline specific elective courses offered during all IV semesters.

[G] [DS]

G/DS & SEM	Course Title
DS – I	1. Advanced Computer Graphics
DS – I	2. Advanced Database System Concepts
DS – I	3. Distributed Operating System
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. Reirtion of courses

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

course code	course Title	No.. of units reirsed and need for reivsion	% reirsed
19PG3B13	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.

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3/4/23

P. Moenelerl
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C. Ary
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K Ranglupe
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Seery
3/4/23

T. Vasan flu
3/4/2023

li-Shy 3/4/23
Qermellary
3/4/23

Smdys
3/4/23

Animala
3.4.2023

03/04/2023

3/4/2023
(Dr. N. Rageswar)

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 2019 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	CRE DITS	CIA Mks	ESE Mks	TOT. MKs
1.	I	19TL1C1	Language-Modern Literature - பொதுத்தமிழ் - இக்கால இலக்கியம்	5	3	40	60	100
2.	II	19TL2C2	Language - Bakthi Literature - பொதுத்தமிழ் - பக்தி இலக்கியம்	5	3	40	60	100
3.	III	19TL3C3	Language- Epic Literature nghJj;jkpo; - காப்பிய இலக்கியம்	5	3	40	60	100
4.	IV	19TL4C4	Language-Sangam Literature பொதுத்தமிழ் - சங்க இலக்கியம்	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	CRE DITS	CIA Mks	ESE Mks	TOT. MKs
1.	I	19RL1C1	PART 1 LANGUAGE FRENCH - LE NIVEAU INTRODUCTIF	5	3	40	60	100
2.	II	19RL2C2	PART 1 LANGUAGE FRENCH - LE NIVEAU DÉCOUVERTE	5	3	40	60	100
3.	III	19RL3C3	PART 1 LANGUAGE FRENCH - LE NIVEAU INTERMEDIAIRE – LA CIVILISATION, LA LITTERATURE ET LA GRAMMAIRE	5	3	40	60	100
4.	IV	19RL4C4	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	19DL1C1	PART 1 LANGUAGE HINDI - बोलचालकीहिंदी	5	3	40	60	100
2.	II	19DL2C2	PART 1 LANGUAGE HINDI - कार्यालयीनहिंदी	5	3	40	60	100
3.	III	19DL3C3	PART 1 LANGUAGE HINDI - हिंदीसाहित्यकाआदिकालऔरभक्तिकाल	5	3	40	60	100
4.	IV	19DL4C4	PART 1 LANGUAGE HINDI - हिंदीसाहित्यकाआधुनिककाल	5	3	40	60	100
			Total	**20**	**12**			

PART – II -ENGLISH – 12 CREDITS

Offered by The Research Centre of English

S. NO	SEM.	COURSE CODE	COURSE TITLE	HRS	CRE DITS	CIA Mks	ESE Mks	TOT. MKs
1.	I	19EL1LB	BASIC COMMUNICATIVE ENGLISH	5	3	40	60	100
2.		19EL1LI	INTERMEDIATE COMMUNICATIVE ENGLISH					
3.		19EL1LA	ADVANCED COMMUNICATIVE ENGLISH					
4.	II	19EL2LB	ENGLISH COMMUNICATION SKILLS	5	3	40	60	100
5.		19EL2LI	ENGLISH FOR EMPOWERMENT					
6.		19EL2LA	ENGLISH FOR CREATIVE WRITING					
7.	III	19EL3LN	ENGLISH FOR DIGITAL ERA	5	3	40	60	100
8.	IV	19EL4LN	ENGLISH FOR INTEGRATED DEVELOPMENT	5	3	40	60	100
			Total	**20**	**12**			

PART – III -MAJOR, ALLIED & ELECTIVES – 95 CREDITS

MAJOR CORE COURSES INCLUDING PRACTICALS : 60 CREDITS

S. NO	SEM.	COURSE CODE	COURSE TITLE	HRS	CREDITS	CIA Mks	ESE Mks	TOT. Mks
1.	I	19B1CC1	Programming in c	6	4	40	60	100
2.		19B1CC2	Lab – I (programming in c)	6	3	40	60	100
3.	II	22B2CC3	PYTHON PROGRAMMING	6	4	40	60	100
4.		19B2CC4	LAB II - PYTHON PROGRAMMING	6	3	40	60	100
5.	III	19B3CC5	DATA STRUCTURES AND ALGORITHMS	6	4	40	60	100
6.		19B3CC6	LAB III - DATA STRUCTURES IN C++	6	3	40	60	100
7.	IV	19B4CC7	RELATIONAL DATABASE SYSTEM CONCEPTS	6	4	40	60	100
8.		22B4CC8	LAB IV – RDBMS & Data Analytics using Spreadsheets	6	3	40	60	100
9.	V	19B5CC9	PROGRAMMING IN JAVA	5	5	40	60	100
10.		19B5CC10	OPERATING SYSTEM CONCEPTS	5	5	40	60	100
11.		19B5CC11	LAB V - PROGRAMMING IN JAVA	6	3	40	60	100
12.		19B5PR1	PROJECT - I	4	3	40	60	100

S. NO	SEM.	COURSE CODE	COURSE TITLE	HRS	CREDITS	CIA Mks	ESE Mks	TOT. Mks
13.	VI	19B6CC12	J2EE PROGRAMMING	5	5	40	60	100
14.		19B6CC13	DATA COMMUNICATIONS AND NETWORKING	5	5	40	60	100
15.		19B6CC14	LAB VI - J2EE PROGRAMMING	6	3	40	60	100
16.		19B6PR2	PROJECT - II	-	3	40	60	100
			Total	**84**	**60**			

ALLIED COURSES- 20 CREDITS

S.NO	SEM.	COURSE CODE	COURSE TITLE	HRS	CREDIT	CIA Mks	ESE Mks	TOT. MKs
1.	I	19P1ACB1	DIGITAL PRINCIPLES & APPLICATIONS (ALLIED - I -OFFERED BY PHYSICS)	5	5	40	60	100
2.	II	19B2AC2	Computer System Architecture	5	5	40	60	100
3.	III	19B3ACM1	LINEAR PROGRAMMING (ALLIED – III - OFFERED BY MATHS)	5	5	40	60	100
4.	IV	19B4ACM2	ALGEBRA AND GRAPH THEORY (ALLIED- IV – OFFERED BY MATHS)	5	5	40	60	100

ELECTIVES-15 CREDITS

S.No	SEM.	COURSECODE	COURSE TITLE	HRS	CREDIT	CIA Mks	ESE Mks	TOT. Mks
1.	V	19B5ME1	**Software Engineering**	5	5	40	60	100
2.	V	19B5ME2	**Python Programming**	5	5	40	60	100
3.	V	19B5ME3	**Data Mining And Data Warehousing**	5	5	40	60	100
4.	V	19B5MEP1	**Programming With C**	5	5	40	60	100
5.	V	19B5MEP2	**Computer Graphics**	5	5	40	60	100
6.	VI	19B6ME4	**Software Testing**	5	5	40	60	100
7.	VI	19B6ME5	**Cloud Computing**	5	5	40	60	100
8.	VI	19B6ME6	**Introduction To Artificial Intelligence**	5	5	40	60	100
9.	VI	19B6ME7	**Mobile Computing Using Android**	5	5	40	60	100
10.	VI	19B6ME8	**Big Data Fundamentals**	5	5	40	60	100
11.	VI	19B6ME9	**Software Engineering**	5	5	40	60	100

PART – IV – 20 CREDITS

- **VALUE EDUCATION**
- **ENVIRONMENTAL AWARENESS**
- **NON MAJOR ELECTIVE**
- **SKILL BASED COURSES**

S.No	SEM.	COURSECODE	COURSE TITLE	HRS	CREDIT	CIA Mks	ESE Mks	TOT. Mks
1.	I	21G1VE1	PERSONAL VALUES	1	1	40	60	100
2.		19B1NME	Animation Techniques (NME)	2	2	40	60	100
3.	II	21G2VE2	VALUES FOR LIFE	1	1	40	60	100
4.		19B2NME	Animation Techniques (NME)	2	2	40	60	100
5.	III	19G3EE1	ENVIRONMENTAL EDUCATION	1	1	40	60	100
6.		22B3SB1	**SKILL BASED ELECTIVE-**INTERNET PROGRAMMING PAPER:I - WEB DESIGNING USING HTML AND CSS	2	2	40	60	100
7.	IV	19G4EE2	GENDER STUDIES	1	1	40	60	100
8.		22B4SB2	**SKILL BASED ELECTIVE-**INTERNET PROGRAMMING PAPER:II - CLIENT SIDE PROGRAMMING USING JAVA SCRIPT	2	2	40	60	100
9.	V	19B5SB3	**SKILL BASED ELECTIVE-**INTERNET PROGRAMMING PAPER:III – CLIENT SIDE PROGRAMMING USING JAVA SCRIPT& CSS	2	2	40	60	100
10.		19B5SB4	**SKILL BASED ELECTIVE-**INTERNET PROGRAMMING PAPER:IV – SERVER SIDE PROGRAMMING USING ASP.NET	2	2	40	60	100

S.No	SEM	COURSE CODE	COURSE TITLE				
11.	VI	19B6SB5	**SKILL BASED ELECTIVE**-INTERNET PROGRAMMING PAPER:V - SERVER SIDE PROGRAMMING USING PHP	2	2	40	60	100
12.		19B6SB6	**SKILL BASED ELECTIVE**-INTERNET PROGRAMMING PAPER:VI -WEB SERVICES DEVELOPMENT USING XML	2	2	40	60	100

PART – V –   1 CREDIT

OFF-CLASS PROGRAMMES - ALL PART-V

SHIFT - I

S.No	SEM.	COURSE CODE	COURSE TITLE	HRS	CREDIT	TOT. Mks
1.	I - IV	21A4PED	Physical Education	30/ SEM	1	100
2.		21A4NSS	NSS			
3.		21A4NCC	NCC			
4.		21A4WEC	Women Empowerment Cell			
5.		21A4ACUF	AICUF			

OFF-CLASS PROGRAMMES
ADD-ON COURSES

COURSE CODE	COURSE TITLE	HRS.	CREDITS	SEMESTER IN WHICH THE COURSE IS OFFERED	CIA Mks	ESE Mks	TOTAL Mks
19UADCA	**COMPUTER APPLICATIONS** (offered by the department of PGDCA for Shift I)	40	2	I & II	40	60	100
19UADFC1	**ONLINE SELF LEARNING COURSES**- Basic Multidisciplinary Course - Arts	-	2	I	-	-	50
19UADFC2	**ONLINE SELF LEARNING COURSE-** Basic Multidisciplinary Course - Science	-	2	II	-	-	50
21UAD3ES	Professional Ethics	15	1	III	40	60	100
21UAD4ES	Personality Development	15	1	IV	40	60	100
21UAD5ES	Family Life Education	15	1	V	40	60	100
21UAD6ES	Life Skills	15	1	VI	40	60	100
19UAD5HR	**HUMAN RIGHTS**	15	2	V	100	-	100
19UADRS	**OUTREACH PROGRAMME**- Reach Out to Society through Action **ROSA**	100	3	V & VI	100	-	100

COURSE CODE	COURSE TITLE	HRS.	CREDITS	SEMESTER IN WHICH THE COURSE IS OFFERED	CIA Mks	ESE Mks	TOTAL Mks
19UADPR	**PROJECT**	30	4	VI	40	60	100
19UADRC	**READING CULTURE**	10/ Semester	1	II-VI	-	-	-
	TOTAL		**20**				

SELF LEARNING EXTRA CREDIT COURSES

COURSE CODE	COURSE	HRS.	CREDITS	SEMESTER IN WHICH THE COURSE IS OFFERED	CIA MKS	ESE MKS	TOTAL MARKS
20UGSLB1	**SELF LEARNING COURSE for ADVANCED LEARNERS** **DIGITAL IMAGE PROCESSING**	-	2	ANY SEMESTER	40	60	100
21UGSLB2	**SELF LEARNING COURSE for ADVANCED LEARNERS** **PRINCIPLES OF CRYPTOGRAPHY**	-	2	ANY SEMESTER	40	60	100
21UGSLB3	**SELF LEARNING COURSE for ADVANCED**	-	2	ANY SEMESTER	40	60	100

	LEARNERS **WEB APP WITH SPRING BOOT**						
21UGSLB4	**SELF LEARNING COURSE for ADVANCED LEARNERS** **CONTENT MANAGEMENT SYSTEMS**	-	2	ANY SEMESTER	40	60	100
	MOOC COURSES / International Certified online Courses (Department Specific Courses/any other courses) * Students can opt other than the listed course from UGC-SWAYAM UGC / CEC	-	Mini mum 2 Credi ts	I – VI	-	-	

IV-B   INTERDISCIPLINARY SELF-LEARNING EXTRA CREDIT COURSES

COURSE CODE	COURSE	HRS.	CREDITS	SEMESTER IN WHICH THE COURSE IS OFFERED	CIA MKS	ESE MKS	TOTAL MARKS
21UGIDBP1	**FUNDAMENTALS & PROGRAMMING OF MICROPROCESSOR 8085**	-	2	ANY SEMESTER	40	60	100
21UGIDBT1	**TAMILUM INAIYAMUM**	-	2	ANY SEMESTER	40	60	100
21UGIDBC1	**Chemistry Problem Solving using C Programming**		2	ANY SEMESTER	40	60	100

OFF CLASS PROGRAMMES

COURSE CODE	COURSE	HRS.	CREDITS	SEMESTER IN WHICH THE COURSE IS OFFERED	CIA MKS	ESE MKS	TOTAL MARKS
21UGVAONB1	**ONLINE COURSES for ADVANCED LEARNERS** **PHOTO EDITING TECHNIQUES**	-	2	ANY SEMESTER	40	60	100
21UGVAONB2	**ONLINE COURSE for ADVANCED LEARNERS** **WEB DESIGNING USING HTML**	-	2	ANY SEMESTER	40	60	100
21UGSEB1	**SKILL EMBEDDED COURSE IN CYBER SECURITY FOR BEGINNERS**	-	2	ANY SEMESTER	40	60	100

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OLD

SEMESTER – IV

(For those who join in 2021 onwards)

</div>

PROGRAMME CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS/WEEK	CREDITS
UACS	**22B4CC8**	**LAB IV – RDBMS & Data Analytics using Spreadsheets**	**MAJOR LAB**	**6**	**3**

COURSE DESCRIPTION

This course provides practical knowledge in PL/SQL programming, utilizing the services provided by Oracle database in a stored procedure perspective. This course also provides knowledge to perform data analysis using Excel's most popular features.

COURSE OBJECTIVE

❖   To give a good formal foundation on the relational model of data

❖   To present the techniques relating to query processing by SQL engines.

❖   Learn about the pivot tables in Spreadsheet

❖   Provide knowledge on Data Checking and Evaluation.

❖   Perform Data Analysis and Evaluation

LAB LIST
SQL QUERIES

1.   SQL queries to implement DDL statements to Create, Alter, Drop, Truncate and rename tables.

2.   SQL queries to implement DML statements to perform Select, Insert, Delete, Update on tables.

3.   SQL queries to implement DCL statements to access database using Grant and Revoke.

4.   SQL queries to implement TCL statements to work on Commit, Rollback and Savepoint.

5. SQL queries to implement Where, Like, Order By, Group By, Having clauses.

6. SQL queries to implement arithmetic, Logical, Concatenation and Quote operators.

7. SQL queries to implement mathematical functions. (count, minimum value, maximum value, sum, average, First and Last)

8. SQL queries to implement scalar functions. (UCASE, LCASE, MID, ROUND)

9. SQL queries to implement Set Operations. (Intersect, Union, Union All, Minus)

10. SQL queries to implement column and table level constraints.(NOT NULL, UNIQUE, PRIMARY KEY, FOREIGN KEY, CHECK and DEFAULT)

11. Implement simple PL/SQL Programs

12. Cleaning Data & Working With Pivottables

13. Pivottable & Pivotcharts

14. Database Functions & Statistics Functions:

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

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	Enhance Programming skills and techniques.	K2	PSO1, PSO2 & PSO3

CO 2	Formulate complex queries using SQL	K2, K3, K4	PSO1 & PSO2
CO 3	Ability to analyze data is a powerful skill that helps you make better decisions	K2	PSO1 & PSO5
CO4	Identify the basic principles of a Pivot Table and Recognize how to use Pivot Table and Pivot chart	K2, K3	PSO4 & PSO6
CO 5	Use Excel's powerful functions to efficiently transform mountains of raw data into clear insights	K2,K3,K4	PSO4 & PSO5

Mapping COs Consistency with PSOs

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

Mapping COs Consistency with POs

CO / PO	PO1	PO2	PO3	PO4
CO 1	3	1	2	2
CO 2	2	3	1	1
CO 3	2	2	1	3
CO 4	2	1	3	2

CO 5	2	1	3	2

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

COURSE DESIGNER:
Dr.G.Germine Mary

Forwarded By

(Dr.G.Germine Mary)

HOD'S Signature& Name

NEW

SEMESTER – IV *(Revised by 2023-24)*

(For those who join in 2023 onwards)

PROGRAMME CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS/WEEK	CREDITS
UACS	23B4CC8	LAB IV – RDBMS	MAJOR LAB	6	3

COURSE DESCRIPTION

This course provides practical knowledge in PL/SQL programming, utilizing the services provided by Oracle database in a stored procedure perspective. This course also provides knowledge to perform data analysis using Excel's most popular features.

COURSE OBJECTIVE

To give a good formal foundation on the relational model of data
To present the techniques relating to query processing by SQL engines.
Experiment   using DB Index Creation
Design and Develop simple application
LAB LIST

 To perform the following using Pl/SQL

● **Table Manipulation (DDL & DML)**

● **SQL Queries and Sub Queries**

● **Aggregate Functions**

● **Indexing & Viewing**

● **Design and Development of Simple Applications**

- **Spreadsheet**

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

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	Enhance Programming skills and techniques.	K2	PSO1, PSO2 & PSO3
CO 2	Formulate complex queries using SQL	K2, K3, K4	PSO1 & PSO2
CO 3	Ability to analyze data is a powerful skill that helps you make better decisions	K2	PSO1 & PSO5
CO4	Understand and Implement Index in DB Creation	K2, K3	PSO4 & PSO6
CO 5	To Design and Develop simple application	K2,K3,K4	PSO4 & PSO5

Mapping COs Consistency with PSOs

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

CO4	1	2	2	3	1	**3**
CO5	2	3	1	3	3	1

Mapping COs Consistency with POs

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

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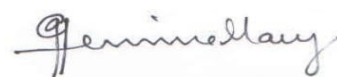
♦ Weakly Correlated -**1**

COURSE DESIGNER:

Dr.G.Germine Mary

                              Forwarded By

        (Dr.G.Germine Mary)

        HOD'S Signature& Name

III B.Sc. Computer Science

III B.Sc. Computer Science

SEMESTER –V

For those who joined in 2018 onwards

PROGRAMME CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS/ WEEK	CREDITS
UACS	B5CC9	PROGRAMMING IN JAVA	Major core	5	5

COURSE DESCRIPTION

This Java Programming course provides extensive programming experience with Java and its object-oriented features.

COURSE OBJECTIVES

- To introduces platform independent, Object Oriented Programs destined for distribution on the internet.
- To implement refinements and improvements in the art of programming.
- To introduce and understand the usage of Applet in implementing dynamic web pages by embedding in HTML.
- To explore advanced Java concepts and to develop user friendly GUI based web Applications

SYLLABUS

UNIT I : INTRODUCTION   **(15 Hrs)**

The History and Evolution Java- An Overview of Java - Data types, Variables and Arrays - Operators - Control Statements - Introducing Classes - A Closer look at Methods and Classes.

UNIT II: INHERITANCE AND PACKAGES   **(15 Hrs)**

Inheritance - Packages and Interfaces – Exception Handling.

UNIT III: MULTITHREAD AND IO STREAMS   **(15 Hrs)**

Multithread Programming: The Java Thread Model – The Main Thread – Creating a Thread - Creating Multiple Threads – Using isAlive( ) and join( ) – Thread Priorities. String Handling: The String Constructors – String Length – Special String Operations – Character Extraction – String Comparison – Searching Strings – Modifying a String – Data Conversion Using valueOf( ) – Changing the Case of Characters Within a String – Joining Strings. Input/ Output: Exploring java.io: The I/O Classes and Interfaces – File – The AutoClosable, Closeable, and Flushable Interfaces – I/O Exceptions - Two ways to Close a Stream – The Stream Classes - The Byte Streams – Input, Output, FileInput, FileOutput Stream - The Character Streams – Reader, Writer, FileReader, FileWriter – Serialization – Networking.

UNIT IV : APPLET   **(15 Hrs)**
The Applet Class: Two types of Applets - Applet Basics- Applet Architecture –
An Applet Skeleton – Simple Applet Display Methods – Requesting Repainting –
Using the Status Window – The HTML APPLET Tag – Passing Parameters to
Applets – getDocumentBase() and getCodeBase() – AppletContext and
showDocument() – The AudioClip Interface – The AppletStub Interface –
Outputting to the Console. Event Handling: Two Event Handling Mechanisms –
The Delegation Event Model – Event Classes – The KeyEvent Class - Sources of
Events – Event Listener Interfaces – Using the Delegation Event Model – Adapter
Classes – Inner Classes.

UNIT V: ABSTRACT WINDOWING TOOLKIT   **(15 Hrs)**
Introducing the AWT: Working with Windows, Graphics and Text : AWT classes
– Window Fundamentals – Working with Frame Windows – Creating a Frame
Window in an AWT-Based Applet – Creating a Windowed Program – Displaying
Information Within a Window – Introducing Graphics – Working with Color –
Setting the Paint Mode – Working with Fonts – Managing Text Output Using
FontMetrics. Using AWT Controls, Layout Managers, and Menus: AWT Control
Fundamentals – Labels – Using Buttons – Applying Check Boxes –
CheckboxGroup – Choice Controls – Using Lists – Managing Scroll Bars – Using
a TextField – Using a TextArea – Understanding Layout Managers – Menu Bars
and Menus – Dialog Boxes – FileDialog – A Word About Overriding paint( ).

SELF – STUDY :
Inheritance -Creating Multiple Threads – Using isAlive( ) and join( ) – Thread
Priorities. The AutoClosable, Closeable, and Flushable Interfaces – I/O
Exceptions - Two ways to Close a Stream – The Stream Classes - The Byte
Streams – Input, Output, FileInput, FileOutput Stream - The Character Streams
– Reader, Writer, FileReader, FileWriter – Serialization – Networking - Passing
Parameters to Applets – getDocumentBase() and getCodeBase() – AppletContext
and showDocument() – The AudioClip Interface – The AppletStub Interface –
Outputting to the Console.

TEXT BOOK
   1. ***JAVA The Complete Reference,*** Herbert Schildt**,** 9th Edition, Tata
      McGraw-Hill Publication, 2016.
Chapters **:** 1 – 11, 16, 20, 22 - 26.

REFERENCE BOOKS
   1. ***Programming with JAVA,*** Dr.C.Muthu, Vijay Nicole Imprints Private
      Limited, 2nd Edition, 2009.
   2. ***Thinking in Java,*** Harry and Chris James, 2nd Edition, 2009.
   3. ***Java in a Nutshell,*** David Flnagan, O'Reilly Media Inc., 5th Edition,
      2014.
Programming with Java, E. Balagurusamy, McGraw-Hill, 5th Edition, 2017.

III B.Sc. Computer Science

SEMESTER –V *(Revised Syllabus)*

For those who joined in 2019 onwards

PROGRAMME CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS/WEEK	CREDITS
UACS	19B5CC9	PROGRAMMING IN JAVA	MAJOR - Theory	5	5

COURSE DESCRIPTION

This Java Programming course provides extensive programming experience with Java and its object-oriented features.

COURSE OBJECTIVES

● To introduce platform independent, Object Oriented Programs destined for distribution on the internet.

● To implement refinements and improvements in the art of programming.

● To introduce and understand the usage of Applet in implementing dynamic web pages by embedding in HTML.

● To explore advanced Java concepts and to develop user friendly GUI based web Applications

UNITS

UNIT I : INTRODUCTION   (15 Hrs)

The History and Evolution Java- An Overview of Java - Data types, Variables and Arrays - Operators - Control Statements - Introducing Classes - A Closer look at Methods and Classes.

UNIT II: INHERITANCE AND PACKAGES   (13 Hrs)

Inheritance - Packages and Interfaces – Exception Handling.

UNIT III: MULTITHREAD AND IO STREAMS   (13 Hrs)

Multithread Programming: The Java Thread Model – The Main Thread – Creating a Thread - Creating Multiple Threads – Using isAlive( ) and join( ) – Thread Priorities. String Handling: The String Constructors – String Length – Special String Operations – Character Extraction – String Comparison – Searching Strings – Modifying a String – Data Conversion Using valueOf( ) – Changing the Case of Characters Within a String – Joining Strings. Input/ Output: Exploring java.io: The I/O Classes and Interfaces – File – The AutoClosable, Closeable, and Flushable Interfaces – I/O Exceptions - Two ways to Close a Stream – The Stream Classes - The Byte Streams – Input, Output, FileInput, FileOutput Stream - The Character Streams – Reader, Writer, FileReader, FileWriter – Serialization – Networking.

UNIT IV : APPLET   (13 Hrs)

The Applet Class: Two types of Applets - Applet Basics- Applet Architecture – An Applet Skeleton – Simple Applet Display Methods – Requesting Repainting – Using the Status Window – The HTML APPLET Tag – Passing Parameters to Applets – getDocumentBase() and getCodeBase() – AppletContext and showDocument() – The AudioClip Interface – The AppletStub Interface – Outputting to the Console. Event Handling: Two Event Handling Mechanisms – The Delegation Event Model – Event Classes – The KeyEvent Class - Sources of Events – Event Listener Interfaces – Using the Delegation Event Model – Adapter Classes – Inner Classes.

UNIT V: ABSTRACT WINDOWING TOOLKIT   (13 Hrs)

Introducing the AWT: Working with Windows, Graphics and Text : AWT classes – Window Fundamentals – Working with Frame Windows – Creating a Frame Window in an AWT-Based Applet – Creating a Windowed Program – Displaying Information Within a Window – Introducing Graphics – Working with Color – Setting the Paint Mode – Working with Fonts – Managing Text Output Using FontMetrics. Using AWT Controls, Layout Managers, and Menus: AWT Control Fundamentals – Labels – Using Buttons – Applying Check Boxes – CheckboxGroup – Choice Controls – Using Lists – Managing Scroll Bars – Using a TextField – Using a TextArea – Understanding Layout Managers – Menu Bars and Menus – Dialog Boxes – FileDialog – A Word About Overriding paint( ).

UNIT VI DYNAMISM (For CIA Only) :(8 Hrs)

Inheritance -Creating Multiple Threads – Using isAlive( ) and join( ) – Thread Priorities. The Stream Classes - The Byte Streams – Input, Output, FileInput, FileOutput Stream– Reader, Writer, FileReader, FileWriter – Serialization– Networking - Passing Parameters to Applets – getDocumentBase() and getCodeBase() – AppletContext and showDocument() – The AudioClip Interface – The AppletStub Interface – Outputting to the Console.

TEXT BOOK

1.   *JAVA The Complete Reference,* Herbert Schildt*,* 9th Edition, Tata McGraw-Hill Publication, 2016.

Chapters **:** 1 – 11, 16, 20, 22 - 26.

REFERENCE BOOKS

1.   *Programming with JAVA,* Dr.C.Muthu, Vijay Nicole Imprints Private Limited, 2nd Edition, 2009.

2.   *Thinking in Java,* Harry and Chris James, 2nd Edition, 2009.

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

4.   *Programming with Java,* E. Balagurusamy, McGraw-Hill, 5th Edition, 2017.

COURSE CONTENTS & TEACHING/LEARNING SCHEDULE

Module No.	Topic	No. of Lectures	Content Delivery Method	Teaching Aids
UNIT I : INTRODUCTION (15 Hrs)				
1.1	Introduction to Java Characteristics of Java Tokens and Data Types	3	Lecture Chalk & Talk	Black Board, Computer & LCD Projector
1.2	Operators and Hierarchy, Writing and Executing Simple Programs	3	Chalk and Talk,Programs written in the class, Practical demonstration using LCD	Black Board, Computer & LCD Projector
1.3	Procedure to read input - simple programs Control Statement - program for each statement discussed	3	Participative Learning- making students try out programs and present using LCD Chalk and Talk, Problem Solving exercises, Interaction	Black Board, Computer & LCD Projector
1.4	Introducing Class in Java Declaring Objects Array of Objects	3	Program demonstration & discussion, Lecture, Programs explained by live demo-executing in the class	Black Board, Computer & LCD Projector
1.5	Constructors - overloading Methods and method overloading	3	Program demonstration and discussion Chalk and Talk, Simple exercises, Interaction	Black Board, Computer & LCD Projector
UNIT II: INHERITANCE AND PACKAGES (13 Hrs)				
2.1	Inheritance -Basics Creating multilevel Inheritance Constructors & Method Overriding-difference	3	Lecture method, Program demonstration & discussion	Black Board, Computer & LCD Projector
2.2	Packages	3	Chalk & Talk Lecture	Black Board, Computer & LCD Projector
2.3	Access Specifiers Interfaces	3	Lecture method, Program demonstration & discussion	Black Board, Computer &

			Chalk and Talk, interaction	LCD Projector
	Program using Interface and Packages		Chalk and Talk, interaction	LCD Projector
2.4	Exception Handling	3	Lecture method, Programs explained by live demo- executing in the class	Black Board, Computer & LCD Projector
2.5	Nested try-catch Throw, throws, Custom Exception	3	Blended Learning Lecture method, Program demonstration & discussion	Black Board, Computer & LCD Projector
UNIT III: MULTITHREAD AND IO STREAMS (13 Hrs)				
3.1	Multithreading Thread Priorities, Synchronization	3	Lecture method, Program demonstration & discussion	Black Board, Computer & LCD Projector
3.2	Deadlock in threads Inter-thread Communication	3	Lecture method, Program demonstration & discussion Presentation and explanation	Black Board, Computer & LCD Projector
3.3	String Handling	3	Lecture, Problem Solving- Programs written in the class	Black Board, Computer & LCD Projector
3.4	Exploring java.io	3	Chalk & Talk Lecture	Black Board, Computer & LCD Projector
3.5	The Stream Classes	3	Blended Learning	Black Board, Computer & LCD Projector
UNIT IV : APPLET (13 Hrs)				
4.1	The Applet Class HTML Applet tag & Passing parameters	3	Blended Learning Lecture method,	Black Board, Computer &LCD Projector
4.2	Introduction to Event Handling	3	Lecture method, Program, interaction demonstration & discussion	Black Board, Computer & LCD Projector
4.3	The Delegation Event Model	3	Chalk & Talk Lecture	Black Board, Computer & LCD Projector
4.4	Event Classes and Methods	3	Chalk & Talk	Black Board,

			Lecture	Computer & LCD Projector
4.5	Event Listener Interfaces	3	Lecture method, Program demonstration & discussion	Black Board, Computer & LCD Projector

UNIT V: ABSTRACT WINDOWING TOOLKIT   (13 Hrs)

5.1	Introducing the AWT: Working with Windows, Graphics and Text : AWT classes	3	Problem Solving- Programs written in the class, Lecture	Black Board, Computer & LCD Projector
5.2	Window Fundamentals – Working with Frame Windows	3	Lecture Programs explained by live demo	Black Board, Computer & LCD Projector
5.3	Introducing Graphics – Working with Color	3	Lecture, Video Demonstration of Programs	Black Board, Computer & LCD Projector
5.4	Using AWT Controls	3	Lecture method, Program demonstration & discussion	Black Board, Computer & LCD Projector
5.5	Understanding Layout Managers – Menu Bars and Menus	3	Blended Learning Lecture, Explanation using sample program	Black Board, Computer & LCD Projector

EVALUATION PATTERN

Levels	C1	C2	C3	C4	C5	Total Scholastic Marks	Non Scholastic Marks C6	CIA Total	% of Assessment
	T1	T2	Quiz	Assignment	OBT/PPT				
	10 Mks.	10 Mks.	5 Mks.	5 Mks	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**
	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(Accordi ng toBloom's Taxonomy)	PSOs ADDR ESSE D	POs ADD RESS ED
CO 1	Explain the fundamental concepts of object-oriented programming and acquire programming skills using the basic language constructs and the core APIs provided by Java.	K1,K2	PSO1& PSO2	PO1 &PO2
CO 2	Design, write, compile, execute, test, and debug object-oriented programs in Java	K1,K2,K3	PSO3	PO2
CO 3	Develop well-documented and structured event handling programs using Applet	K2,K3	PSO5	PO4
CO 4	Identify the use of Java in a variety of technologies and on different platforms.	K1,K2,K4	PSO4	PO3
CO 5	Implement GUI based client applications and TCP/ IP and UDP based Network programs	K2,K3	PSO6	PO1

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	2
CO2	1	2	3	1	1	2
CO3	2	1	1	2	3	3
CO4	1	2	2	3	1	1
CO5	2	1	2	2	1	3

Mapping of C0s with POs

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

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

♦ WeaklyCorrelated -**1**

COURSE DESIGNER:

Dr. G.Germine Mary

Forwarded By

(Dr.G.Germine Mary)

HOD'S Signature & Name

III B.Sc. Computer Science

SEMESTER –VI

For those who joined in 2018 onwards

PROGRAMME CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS/WEEK	CREDITS
UACS	B6CC13	J2EE Programming	Major Core	5	5

COURSE DESCRIPTION

J2ee Programming course provides programming experience with Advanced Java Concepts like RMI, Servlet, JDBC, JSP and JMS

COURSE OBJECTIVES

- To Understand J2EE as an architecture and platform for building and deploying web-based, n-tier enterprise applications
- To Understand the concept of Servlet and JSP as dynamic content generation technologies (Web-Server & support Technologies)
- To Understand RMI   as Distributed-Objects Technology
- To Understand the use of Java Messaging Service
- To Acquire knowledge on how various J2EE technologies are used together to build enterprise applications

SYLLABUS

UNIT I: JAVA AND THE J2EE PLATFORM   (15 Hrs)

Reviewing a brief history of Java – Understanding J2SE – Examining the Origin of (J2EE) – Working with the model-View Controller –Understanding J2EEAPIs – Discovering What's New in J2EE 1.4,   Introducing Application Servers: - Implementing the J2EE Platform – Understanding the features of an Application Server -   Examining Full J2EE Implementations – Examining partial J2EE Implementations.

UNIT II: RMI AND SERVLET PROGRAMMING   (15 Hrs)

Providing an Overview of RMI – developing Applications with RMI – Pushing data from the RMI Server – RMI over Inter-ORB Protocol (IIOP). Creating a magazine Publisher Application Using Servlets – Using Servlet Context – Performing URlReDirection – Examining the web.xml Deployment Descriptor.

UNIT III: JSP   (15 Hrs)

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– Why use Tag Extensions- Explaining custom tag concepts – Explaining taglib mapping – Understanding Tag Handlers – Exploring Dynamic Attributes.

UNIT IV: JDBC   (15 Hrs)

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.

UNIT V : JMS   **(15 Hrs)**

Explaining Messaging – Introducing JMS – Examining Messaging Models – Understanding the major JMS Components – Configuring JMS- Explaining Reliable Messaging.

SELF STUDY :

Introducing Application Servers: - Implementing the J2EE Platform – Understanding the features of an Application Server - Examining Full J2EE Implementations – Examining partial J2EE Implementations

TEXT BOOK

J2EE 1.4 Bible, James McGovern, Rahim Adatia and others, 1st Edition, Wiley India (P) Ltd, Reprint 2008.   Chapters: 1, 3 - 7, 9, 18

REFERENCE BOOKS

1. **The J2EE Tutorial**, Stephanie Bodoff, Eric Armstrong and others, Pearson Education, 2nd Edition, 2004.
2. **J2EE : The Complete Reference**, Jim Keogh, Tata McGraw-Hill Publishing Company Limited , New Delhi, 1st Edition, 18th Reprint 2008.

III B.Sc. Computer Science

SEMESTER –VI *(Revised Syllabus)*

For those who joined in 2019 onwards

PROGRAMME CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS/WEEK	CREDITS
UACS	19B6CC12	J2EE Programming	MAJOR - Theory	5	5

COURSE DESCRIPTION

J2ee Programming course provides programming experience with Advanced Java Concepts like RMI, Sevlet, JDBC, JSP and JMS

COURSE OBJECTIVES

● To Understand J2EE as an architecture and platform for building and deploying web-based, n-tier enterprise applications

● To Understand the concept of Servlet and JSP as dynamic content generation technologies (Web-Server & support Technologies)

● To Understand RMI as Distributed-Objects Technology

● To Understand the use of Java Messaging Service

● To Acquire knowledge on how various J2EE technologies are usedtogether to build enterprise applications

SYLLABUS

UNIT I: JAVA AND THE J2EE PLATFORM   (15 Hrs)

Reviewing a brief history of Java – Understanding J2SE – Examining the Origin of (J2EE) – Working with the model-View Controller –Understanding J2EEAPIs – Discovering What's New in J2EE 1.4, Introducing Application Servers: -

UNIT II: RMI AND SERVLET PROGRAMMING   (15 Hrs)

Providing an Overview of RMI – developing Applications with RMI – Pushing data from the RMI Server – RMI over Inter-ORB Protocol (IIOP). Creating a magazine Publisher Application Using Servlets – Using Servlet Context – Performing URlReDirection – Examining the web.xml Deployment Descriptor.

UNIT III: JSP   (15 Hrs)

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.

UNIT IV: JDBC   (15 Hrs)

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.

UNIT V : JMS   (15 Hrs)

Explaining Messaging – Introducing JMS – Examining Messaging Models – Understanding the major JMS Components – Configuring JMS- Explaining Reliable Messaging.

SELF STUDY :

Introducing Application Servers: - Implementing the J2EE Platform – Understanding the features of an Application Server - Examining Full J2EE Implementations – Examining partial J2EE Implementations

TEXT BOOK

J2EE 1.4 Bible, James McGovern, Rahim Adatia and others, 1st Edition, Wiley India (P) Ltd, Reprint 2008.   Chapters: 1, 3 - 7, 9, 18

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

COURSE CONTENTS & TEACHING/LEARNING SCHEDULE

Module No.	Topic	No. of Lectures	Content Delivery Method	Teaching Aids
UNIT I: JAVA AND THE J2EE PLATFORM		**[15 Hrs]**		
1.1	Reviewing a brief history of Java – Understanding J2SE – Examining the Origin of (J2EE) – Working with the model-View Controller –.	4	Chalk & Talk	Black Board, Computer & LCD Projector
1.2	Understanding J2EEAPIs – Discovering What's New in J2EE 1.4,	4	Lecture	Black Board, Computer & LCD Projector
1.3	Introducing Application Servers: - Implementing the J2EE Platform – Understanding the features of an Application Server -	4	Lecture	Black Board, Computer & LCD Projector
1.4	Examining Full J2EE Implementations – Examining partial J2EE Implementation	3	Lecture	Black Board, Computer & LCD Projector
UNIT II: RMI AND SERVLET PROGRAMMING		**[15 Hrs]**		
2.1	Providing an Overview of RMI –	5	Chalk & Talk	Black Board,

	developing Applications with RMI – Pushing data from the RMI Server – RMI over Inter-ORB Protocol (IIOP).		Participative Learning-making students try out programs and present using LCD	Computer & LCD Projector
2.2	Creating a magazine Publisher Application Using Servlets – Using Servlet Context –.	5	Chalk and Talk, Problem Solving exercises, Interaction	Black Board, Computer & LCD Projector
2.3	Performing URlReDirection – Examining the web.xml Deployment Descriptor	5	Lecture, Explanation using sample program	Black Board, Computer & LCD Projector
UNIT III: JSP [15 Hrs]				
3.1	Introducing JSP – Examining MVC and JSP - JSP Scripting Elements and Directives –Working with Variable Scopes – Error pages –	5	Lecture, Programs explained by live demo-executing in the class	Black Board, Computer & LCD Projector
3.2	Using java Beans – Designing an online Store with JSP – Simple programs using JSP.	5	Chalk and Talk, Simple exercises, Interaction	Black Board, Computer & LCD Projector
3.3	Using JSP Tag Extensions– Why use Tag Extensions- Explaining custom tag concepts – Explaining taglib mapping – Understanding Tag Handlers – Exploring Dynamic Attributes.	5	Exercise given and discussed	Black Board, Computer & LCD Projector
UNIT IV: JDBC [15 Hrs]				
4.1	Java Database Connectivity: Introducing JDBC Driver Types - Creating Your First First JDBC Program – Performing Batch Updates –	4	Programs explained by live demo-executing in the class	Black Board, Computer & LCD Projector
4.2	Using Save points - Configuring the JDBC-ODBC Bridge- Explaining Database Connection	4	Chalk & Talk Lecture, Explanation using sample program	Black Board, Computer & LCD Projector
4.3	pools and data sources - Revisiting DBProcessor-	4	Lecture method, Program	Black Board, Computer &

			demonstration & discussion	LCD Projector
4.4	Using the RowSet Interface.	3	Discussion	Black Board, Computer & LCD Projector

UNIT V: JMS [15 Hrs]				
5.1	Explaining Messaging – Introducing JMS – Examining Messaging Models	5	Chalk & Talk	Black Board, Computer & LCD Projector
5.2	Understanding the major JMS Components .	5	Chalk & Talk	Black Board, Computer & LCD Projector
5.3	Configuring JMS- Explaining Reliable Messaging	5	Chalk & Talk	Black Board, Computer & LCD Projector

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 %

✓ **All the course outcomes are to be assessed in the various CIA components.**

✓ **The levels of CIA Assessment based on Revised Bloom's Taxonomy for UG 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	Explain J2EE Architecture and Standard Services used	K1/K2/K3	PSO1	PO2
CO 2	Develop Server side Java Applications using Servlet and JSP	K1/K2/K3	PSO2 &PSO3	PO1
CO 3	Create Remote methods and apply it in J2EE applications using RMI	K1/K2/K3	PSO4	PO1
CO 4	Design programs with Data Base Connectivity using JDBC	K1/K2/K4	PSO6	PO3
CO 5	Identify the type of Java Messaging Service	K1/K2/K3	PSO5	PO2

Mapping COs Consistency with PSOs

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

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

♦ WeaklyCorrelated -**1**

Mapping COs Consistency with POs

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

COURSE DESIGNER:

Dr. G.Germine Mary

Forwarded By

(Dr.G.Germine Mary)

HOD'S Signature & Name