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 2022 – 2023 onwards.
Convened on 16.3.2022 at 2 p.m in the Dept. of Computer Science, Fatima College.

Members present:

1. Dr. G. Germine Mary — Chairperson
Head, Dept. of Computer Science
Fatima College.

2. Dr. C. Suresh Kumar — University Nominee
Associate Prof. & Head
Dept. of Computer Science
MKU College, Madurai

3. Dr. M. Thangaraj — Subject Expert
Professor & Head
Dept. of Computer Science
MKU, Madurai

4. Dr. Sr. Shantha Mary Joshitta — Subject Expert
Asst. Prof and Head
Dept. of Computer Science
JAC, Periyakulam
Theni Dt. – 625601
ABSENT

5. Dr. S. Vimala
Associate Professor
Dept. of Computer Science
MTHV, Kodaikanal-624102

Subject Expert.

ABSENT

6. Mr. Graceson Tony
Founder & CEO
SEVEN ATARA Marketers
11-3/2, III St, Periyar Nagar
Koodal Ngr, Madurai-18

Industrialist

P. Graceson

7. Mrs. K. Sudharani
Associate Prof. & Head
Dept. of Computer Science
MSN College, Poovandhi
Sivagangai-630611

Alumna

Sudha

8. Dr. N. Malathy
Asst. Prof in Zoology
Fatima College

Dean of Academic Affairs.

16/3/2022

Members of the Department

9. Dr. S. Vidya, Associate Prof. — Vidya

10. Dr. K. Rosemary Euphrasia
Associate Prof.

K. Rosemary

11. Dr. A. Vimala, Associate Prof. Avimala

12. Dr. P. Meenakshi Sundari
Asst. Professor

P. Meenakshi

13. Dr. S. Arul Jothi
Asst. Professor. S. Arul

14. Dr. T. Vasantha
Asst. Professor. ABSENT

15. Mrs. G. Rajathilagam
Asst. Professor. Rajathilagam

AGENDA:

* Presentation of the Action Taken Report of the previous BoS.
* To pass the changes in course titles.
* To pass the changes in the syllabus of the courses offered
* To pass the syllabus for the new courses to be introduced.

1. Action taken on the report of the previous BoS

Suggestion	Action Taken
University Nominee suggested to follow LOCF (Learning outcomes based curriculum framework)	Already OBE is followed. LOCF will be introduced during institutional restructuring.

2. Change in course Title

The following changes in titles were carried out.

S.No	Old Course code	New Course code	old Title	New Title
1.	19B4SB2	22B3SB1	Web Designing using HTML and Wordpress	Web Designing using HTML and CSS

Need for change : "Introduction to internet" is removed to accomodate more advanced papers, so skill based paper - III is shifted in the place of Paper - I after replacing Wordpress with CSS.

S.No	Old Course code	New Course code	old Title	New Title
2	19B5SB3	22B4SB2	Client side programing using JAVA Script and CSS	Client side programing using Java Script

Need for change : Since Paper III is shifted to Paper II after removing the CSS component, the content removing CSS contains only Java Script.

S.NO	Old Course Code	New Course code	old Title	New Title
3.	19B6ME8	19B6ME8	Mobile computing using Android	Mobile computing and Application Development

Need for change : Unit on Android installation is removed.

3. Revision of Courses

All the 8 papers mentioned below have Global Relevance and has scope for Employability, Entrepreneurship and Skill development.

S.No	Course code	Course Title	No., & Title of units revised	% revised	Need for revision
1.	19B4SB2	Web Designing using HTML & wordpress	UNIT V Introduction to CSS	20	Content on Wordpress is replaced with CSS for better layout of web pages.
2.	19B5SB3	Client side programming using Java Script & CSS	UNIT IV Advanced Scripting concepts	20	Content on CSS is moved to Paper I and replaced with advanced scripting concepts.
3.	19B5MC3	Data Mining and data warehousing	Topics from UNIT II & IV are removed.	15	Few topics which were advanced and dealt in Pgr are removed.

4	19B5ME5	Software Testing	UNIT IV is replaced	20	UNIT-IV – Software Test automation is replaced with Software Test metrics.
5.	19B6ME6	Cloud computing	UNIT I & IV Modified	10	Few topics were removed from UNIT I + IV.
6.	19B6ME7	Introduction to Artificial Intelligence	UNIT I, III & V modified	10	Few topics were removed from UNIT I, III & V.
7.	19B6ME8	Mobile Computing using Android	UNIT III is replaced with UNIT IV and UNIT IV is replaced with some section from UNIT V.	20	UNIT V had more weightage so for deeper learning is split it into UNIT IV & UNIT V.
8.	19B6ME9	Big Data Fundamentals	UNIT II is replaced	20	UNIT II has been replaced with big data drivers, ICT and business analytical methods have been included.

4. Pass the syllabus for the new courses to be introduced.

All the 4 new papers introduced have Global relevance and has scope for Employability, Entrepreneurship and skill development.

S.No	Course code	Course Title	Need for introduction
1.	22B2CC3	Python Programming	Python is the future of programming so introduced in the II semester in the place of Programming in C++.
2.	22B2CC4	Lab II – Python Programming	The lab is introduced in tune with the major core 22B2CC3 to learn in parallel with Theory.
3.	22B4CC8	Lab IV – RDBMS and Data Analytics using Spread-sheets.	Introduced in tune with the theory. Also facilitates placement
4.	22B5SB3	Web Application using Angular	Since Skill Based paper I is removed this paper is

		introduced to fill that space created.

Suggestions & Recommendations.

* To organise more sessions with Alumnae to keep the students aware of the current trends in the industry
* To create awareness about the work from home opportunities.

Germinellary	G. GERMINE MARY
S. Arul Jothi	S. ARUL JOTHI
Rajathilagam	G. RAJATHILAGAM
P. Meenakshi	P. MEENAKSHI SUNDARI
C. SURESH KUMAR	(DY. M. THANGARAJ)
10/3/2022	(N. MALATHI)
Sundays	(S. VIDYA)
Sudharani	Mrs. K. Sudha Rani
K Rosemary Euphrasia	Mrs. K. Rosemary Euphrasia
Arimala	A. VIMALA
P. Graceson Tony	GRACESON TONY P
15/3/22	

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

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Programme : M.Sc.

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MSN college. Sivagangai.

8. Dr. N. Malathi — Dean of Academic Affairs
Asst. Prof in Zoology
Fatima college. 16/3/2022

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4. Dr. T. Vasantha
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5. Mrs. G. Rajathilagam
Asst. Professor — Rajathilagam

AGENDA:

* To pass the change in course title.
* To pass the changes in the syllabus of courses offered.
* To pass the syllabus for the new courses to be introduced.
* Action taken on the report of previous BoS.

1. Change in course title.

S.No	old course code	New course code	old Title	New Title
1.	19PG3B12	22PG2B8	Digital Image Processing	Digital Image Processing

Need for change: The paper is shifted from III semester to II Semester.

S.No	old course code	New course code	old Title	New Title
2.	19PG3B14	22PG2B11	Lab V Digital Image Processing	Lab IV Digital Image Processing

2. Revision of Courses

All the 3 courses mentioned below have global relevance and has employability, entrepreneurship and skill development scope.

SNO	Course Code	Course Title	No. of UNITS and the title revised and need for revision	% Revised
1.	19PG3BE7	Distributed Database Management System	UNITS I, II, III & IV Modified Few topics in the mentioned units were removed.	10
2.	19PG3BE8	Compiler Design	UNIT II, IV & V modified. Few topics in the mentioned units were removed.	10
3.	19PG3BE10	Advanced computer graphics and animation	UNITS IV & V Modified. New concepts added in both the units.	15

3. Pass the syllabus for the new courses introduced.

All the 4 papers introduced have Global relevance and scope for employability, entrepreneurship and skill.....

S.No	Course Code	Course Title	Need for introduction
1.	22PG3B12	Machine Learning	The ability to process large numbers of features makes machine learning powerful. Essential for research.
2.	22PG3B14	Lab V - Machine Learning with Python	Provides practical skill for 22PG3B12
3.	22PG3BE3	Mobile communication	Latest technology which is very essential.
4.	22PG3BE12	Cyber Forensics	Needed for the investigation of crimes and law enforcement in cyber crime.

4. Action taken on the report of previous BoS

Suggestion	Action Taken
University nominee suggested to follow LOCF (Learning outcome based curriculum framework)	Already OBE is followed. LOCF will be introduced during institutional restructuring.

Suggestions & Recommendations.

* To organise more sessions with Alumnae to keep the students aware of the current trends in the industry
* To create awareness about the work from home oppurtunities.

Signature	Name
[signature]	(G. GERMINE MARY)
[signature]	S. ARUL JOTHI
[signature]	C. SURESHKUMAR
[signature]	(Dr. M. THANAMANI)
[signature]	RAJATHILAGAM. G.
[signature] 16/3/2022	(N. MALATHI)
[signature]	S. VIDYA
P. Meenakshi	P. MEENAKSHI SUNDARI
[signature]	K. SUDHARANI
K. Rosy Euphrasia	K. Rosemary Euphrasia
[signature]	A. VIMALA
P. Graceson Tony	GRACESON TONY P

[signature] 16/3/22

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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

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.

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.

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 - nghJj;jkpo; - ,f;fhy ,yf;fpak;	**5**	**3**	**40**	**60**	**100**
2.	**II**	19TL2C2	Language - Bakthi Literature - nghJj;jkpo; - gf;jp ,yf;fpak;	**5**	**3**	**40**	**60**	**100**
3.	**III**	19TL3C3	Language- Epic Literature nghJj;jkpo; - fhg;gpa ,yf;fpak;	**5**	**3**	**40**	**60**	**100**
4.	**IV**	19TL4C4	Language-Sangam Literature nghJj;jkpo; - rq;f ,yf;fpak;	**5**	**3**	**40**	**60**	**100**
			Total	**20**	**12**			

PART – I – FRENCH

Offered by The Department of French

S. NO	SEM.	COURSE CODE	COURSE TITLE	HRS	CREDITS	CIA Mks	ESE Mks	TOT. MKs
1.	**I**	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	CREDITS	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	TOTMks
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

S. NO	SEM.	COURSE CODE	COURSE TITLE	HRS	CREDITS	CIA Mks	ESE Mks	TOTM ks
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
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	19B1ACP1	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	21M3ACB1	LINEAR PROGRAMMING (ALLIED – III - OFFERED BY MATHS)	5	5	40	60	100
4.	IV	21M4ACB2	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 (ELECTIVE-OFFERED TO PHYSICS)	5	5	40	60	100
5.	V	19B5MEP2	Web Development (ELECTIVE-OFFERED TO PHYSICS	5	5	40	60	100
6.	VI	19B6ME4	Computer Graphics	5	5	40	60	100
7.	VI	19B6ME5	Software Testing	5	5	40	60	100
8.	VI	19B6ME6	Cloud Computing	5	5	40	60	100
9.	VI	19B6ME7	Introduction To Artificial Intelligence	5	5	40	60	100
10.	VI	19B6ME8	Mobile Computing and Application	5	5	40	60	100

			Development					
11.	VI	19B6ME9	Big Data Fundamentals	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	21G3ES	ENVIRONMENTAL STUDIES	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
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

COURSE CODE	COURSE TITLE	HRS	CREDITS	SEMESTER IN WHICH THE COURSE IS OFFERED	CIA Mks	ESE Mks	TOTAL Mks
19UAD5HR	**HUMAN RIGHTS**	15	2	V	100	-	100
19UADRS	**OUTREACH PROGRAMME**- Reach Out to Society through Action **ROSA**	100	3	V & VI	100	-	100
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	-	Minimum 2 Credits	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

III B.Sc. Computer Science

OLD SYLLABUS

SEMESTER –V

For those who joined in 2019 onwards

PROGRAMME CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS/ WEEK	CREDITS
UACS	19B5ME3	Data Mining and Data Warehousing	Major Elective	5	5

COURSE DESCRIPTION

Data Mining and Data Warehousing course contains fundamental concepts of Data Mining and data pre-processing,Classification and Clustering algorithms and Data Warehousing concepts.

COURSE OBJECTIVES

- To understand the data pre-processing concepts
- To learn about Association Rule Mining,Mining Frequent Patterns and Classification.
- To understand Cluster Analysis
- To learn about data warehouse

SYLLABUS

UNIT I: INTRODUCTION (15 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.

UNIT II: DATA PREPROCESSING AND DATA WAREHOUSING (15 Hrs)

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

UNIT III: MINING FREQUENT PATTERNS (15 Hrs)

Basic Concepts and Road Map - 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.

UNIT IV : CLASSIFICATION (15 Hrs)

Classification - Prediction – Issues Regarding Classification and Prediction – Classification by Decision Tree Induction – Bayesian Classification – Rule-Based Classification.

UNIT V: CLUSTER ANALYSIS (15 Hrs)

What is Cluster Analysis – Types of Data in Cluster Analysis – A Categorization of Major Clustering Methods – Partitioning Methods – Hierarchical Methods.

SELF STUDY:

UNIT II: Data Integration and Transformation – Data Reduction. Data Warehouse and OLAP Technology

UNIT IV: Issues Regarding Classification and Prediction

TEXT BOOK :

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

Chapters: 1.1 -1.7, 2.1- 2.5, 3.1- 3.3, 5.1-5.2, 6.1 - 6.5, 7.1 – 7.5

REFERENCE BOOKS :

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

Digital Open Educational Resources (DOER)

1. https://www.tutorialspoint.com/data_mining/index.htm
2. https://data-flair.training/blogs/data-mining-tutorial/
3. https://www.youtube.com/watch?v=PT_D0mgFr-o

COURSE CONTENTS & TEACHING/LEARNING SCHEDULE

Module No.	Topic	No. of Lectures	Content Delivery Method	Teaching Aids
UNIT I: INTRODUCTION (15 Hrs)				
1.1	Language- Architectures- Concept Description: Preprocessing Cleaning- Integration- Transformation- Reduction-	4	Lecture	PPT &Smart Board
1.2	Discretization- Concept Hierarchy Generation.	4	Chalk & Talk Lecture	Black Board
1.3	Data Mining Primitives- Query Language- Graphical User InterfacesArchitectures	4z	Chalk & Talk Lecture	Black Board
1.4	Concept Description- Data Generalization- Characterizations-Class Comparisons- Descriptive Statistical Measures	3	Chalk & Talk Lecture	Black Board
UNIT II: DATA PREPROCESSING AND DATA WAREHOUSING (15 Hrs)				
2.1	Need to Pre-process the Data - Descriptive Data Summarization –	4	Lecture	PPT &Smart Board
2.2	Data Cleaning – Data Integration and Transformation – Data Reduction.	3	Chalk & Talk Lecture	Black Board
2.3	Data Warehouse and OLAP Technology : An Overview - What is a Data Warehouse –	4	Chalk & Talk Lecture	Black Board
2.4	A Multidimensional Data Model – Data Warehouse Architecture.	4	Chalk & Talk Lecture	Black Board
UNIT III: MINING FREQUENT PATTERNS (15				

Hrs)				
3.1	Basic Concepts and Road Map - Efficient and Scalable Frequent Itemset Mining Methods: The Apriori Algorithm : Finding Frequent Itemsets Using Candidate Generation-	4	Lecture	PPT &Smart Board
3.2	Generating Association Rules from Frequent Itemsets- Improving the Efficiency of Apriori –	4	Lecture	PPT &Smart Board
	Mining Frequent Itemsets without Candidate Generation- Mining Frequent Itemsets Using Vertical Data Format –	4	Flipped Learning	Online/ E-Content/ Text Books /Materials
3.3	Mining Closed Frequent Itemsets	3	Chalk & Talk Lecture	Black Board
UNIT IV : CLASSIFICATION				**(15 Hrs)**
4.1	Classification - Prediction –	4	Lecture	PPT &Smart Board
4.2	Issues Regarding Classification and Prediction –.	4	Chalk & Talk Lecture	Black Board
4.3	Classification by Decision Tree Induction – Bayesian Classification	4	Chalk & Talk Lecture	Black Board
4.4	– Rule-Based Classification	3	Chalk & Talk Lecture	Black Board
UNIT V: CLUSTER ANALYSIS				**(15 Hrs)**
5.1	What is Cluster Analysis – Types of Data in Cluster Analysis	5	Lecture	PPT &Smart Board
5.2	A Categorization of Major Clustering Methods –	5	Lecture	PPT &Smart Board
5.3	Partitioning Methods – Hierarchical Methods.	5	Flipped Learning	Online/ E-Content/ Text Books /Materials

EVALUATION PATTERN

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

CIA	
Scholastic	35
Non Scholastic	5

	40

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

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

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

COURSE OUTCOMES (CO)

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

No.	**Course Outcome**	**Knowledge Level(According to Bloom's Taxonomy)**	**PSOs ADDRESSED**	**POs ADDRESSED**
CO 1	Explain the data extraction and transformation techniques.	K1	PSO1	PO1
CO 2	List the association rule mining techniques and understand association mining to correlation analysis, constraint based association mining.	K1,K2	PSO2& PSO3	PO2
CO 3	Describe operational database, warehousing and multidimensional need of data base to meet industrial needs.	K2,K3	PSO4	PO3
CO 4	Explain the components of	K3,K4	PSO5	PO3 &

	warehousing, classification methods and clustering analysis.			PO4
CO 5	Identify and discuss the Business analysis, query tools and application, OLAP etc	K4	PSO6	PO4

Mapping of C0s with PSOs

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

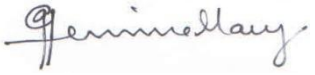
Mapping of C0s with POs

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

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

COURSE DESIGNER:
Dr. T.Vasantha

Forwarded By



(Dr.G.Germine Mary)

HOD'S Signature& Name

15 %
REDUCED
(NEW)

IIIB.Sc. Computer Science

SEMESTER –V

For those who joined in 2019 onwards

PROGRAMME CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS/ WEEK	CREDITS	
UACS	19B5ME3	Data Mining and Data Warehousing	Major Elective	5	5	

COURSE DESCRIPTION

Data Mining and Data Warehousing course contains fundamental concepts of Data Mining and data pre-processing, Classification and Clustering algorithms and Data Warehousing concepts.

COURSE OBJECTIVES

- To understand the data pre-processing concepts
- To learn about Association Rule Mining, Mining Frequent Patterns and Classification.
- To understand Cluster Analysis
- To learn about data warehouse

SYLLABUS

UNIT I: INTRODUCTION (15 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.

UNIT II: DATA PREPROCESSING AND DATA WAREHOUSING (15 Hrs)

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

UNIT III: MINING FREQUENT PATTERNS (15 Hrs)

Basic Concepts and Road Map - Efficient and Scalable Frequent Item set Mining Methods: The Apriori Algorithm : Finding Frequent Item sets Using Candidate Generation- Generating Association Rules from Frequent Item sets- Improving the Efficiency of Apriori – Mining Frequent Item sets without Candidate Generation.

UNIT IV : CLASSIFICATION (15 Hrs)

Classification - Prediction – Issues Regarding Classification and Prediction – Classification by Decision Tree Induction– Rule-Based Classification.

UNIT V: CLUSTER ANALYSIS (15 Hrs)

What is Cluster Analysis – Types of Data in Cluster Analysis – A Categorization of Major Clustering Methods – Partitioning Methods – Hierarchical Methods.

SELF STUDY:

UNIT II: Data Integration and Transformation. Data Warehouse and OLAP Technology

UNIT IV: Issues Regarding Classification and Prediction

TEXT BOOK :

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

Chapters: 1.1 -1.7, 2.1- 2.5, 3.1- 3.3, 5.1-5.2, 6.1 - 6.5, 7.1 – 7.5

REFERENCE BOOKS :

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

Digital Open Educational Resources (DOER)

1. https://www.tutorialspoint.com/data_mining/index.htm
2. https://data-flair.training/blogs/data-mining-tutorial/
3. https://www.youtube.com/watch?v=PT_D0mgFr-o

CONTENTS & TEACHING/LEARNING SCHEDULE

Module No.	Topic	No. of Lectures	Content Delivery Method	Teaching Aids
UNIT I: INTRODUCTION (15 Hrs)				
1.1	Language- Architectures- Concept Description: Preprocessing Cleaning- Integration- Transformation- Reduction-	4	Lecture	PPT &Smart Board
1.2	Discretization- Concept Hierarchy Generation.	4	Chalk & Talk Lecture	Black Board
1.3	Data Mining Primitives- Query Language- Graphical User Interfaces Architectures	4	Chalk & Talk Lecture	Black Board
1.4	Concept Description- Data Generalization- Characterizations-Class Comparisons- Descriptive Statistical Measures	3	Chalk & Talk Lecture	Black Board
UNIT II: DATA PREPROCESSING AND DATA WAREHOUSING (15 Hrs)				
2.1	Need to Pre-process the Data - Descriptive Data Summarization	4	Lecture	PPT &Smart Board
2.2	Data Cleaning – Data Integration and Transformation – Data Reduction.	3	Chalk & Talk Lecture	Black Board
2.3	Data Warehouse and OLAP Technology : An Overview - What is a Data Warehouse –	4	Chalk & Talk Lecture	Black Board
2.4	A Multidimensional Data Model – Data Warehouse Architecture.	4	Chalk & Talk Lecture	Black Board
UNIT III: MINING FREQUENT PATTERNS (15 Hrs)				
3.1	Basic Concepts and Road Map - Efficient and Scalable Frequent Itemset Mining Methods: The	4	Lecture	PPT &Smart Board

	AprioriAlgorithm : Finding Frequent Itemsets Using Candidate Generation-			
3.2	Generating Association Rules from Frequent Itemsets- Improving the Efficiency of Apriori –	4	Lecture	PPT &Smart Board
	Mining Frequent Itemsetswithout Candidate Generation- Mining Frequent Itemsets Using Vertical Data Format –	4	Flipped Learning	Online/ E-Content/ Text Books /Materials
3.3	Mining Closed Frequent Itemsets	3	Chalk & Talk Lecture	Black Board
UNIT IV : CLASSIFICATION (15 Hrs)				
4.1	Classification - Prediction –	4	Lecture	PPT &Smart Board
4.2	Issues Regarding Classification and Prediction –.	4	Chalk & Talk Lecture	Black Board
4.3	Classification by Decision Tree Induction – Bayesian Classification	4	Chalk & Talk Lecture	Black Board
4.4	– Rule-Based Classification	3	Chalk & Talk Lecture	Black Board
UNIT V: CLUSTER ANALYSIS (15 Hrs)				
5.1	What is Cluster Analysis – Types of Data in Cluster Analysis	5	Lecture	PPT &Smart Board
5.2	A Categorization of Major Clustering Methods –	5	Lecture	PPT &Smart Board
5.3	Partitioning Methods – Hierarchical Methods.	5	Flipped Learning	Online/ E-Content/ Text Books /Materials

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.	40 Mks.	
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 (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 the data extraction and transformation techniques.	K1	PSO1	PO1
CO 2	List the association rule mining techniques and understand association mining to correlation analysis, constraint based association mining.	K1,K2	PSO2& PSO3	PO2
CO 3	Describe operational database, warehousing and multidimensional need of data base to meet industrial needs.	K2,K3	PSO4	PO3
CO 4	Explain the components of warehousing, classification methods and clustering analysis.	K3,K4	PSO5	PO3 & PO4
CO 5	Identify and discuss the Business analysis, query tools and application, OLAP etc	K4	PSO6	PO4

Mapping of C0s with PSOs

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

Mapping of C0s with Pos

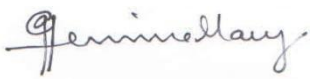
CO/ PSO	PO1	PO2	PO3	PO4
CO1	3	2	2	1
CO2	2	3	2	1
CO3	2	1	3	1
CO4	2	2	3	3
CO5	2	2	1	2

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

♦ Weakly Correlated -**1**

COURSE DESIGNER:
Dr. T.Vasantha

Forwarded By



(Dr.G.Germine Mary)

HOD'S Signature& Name

III B.Sc. Computer Science

OLD
SYLLABUS

SEMESTER –VI

For those who joined in 2019 onwards

PROGRAMME CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS/ WEEK	CREDITS
UACS	19B6ME5	Software Testing	Major Elective	5	5

COURSE DESCRIPTION

To study fundamental concepts in software testing including software testing objectives, process, criteria, strategies, and methods.

COURSE OBJECTIVE/S

- To examine fundamental software testing and program analysis techniques.
- To understand the important phases of testing
- To emphasize the significance of each phase when testing different types of software.

UNITS

UNIT I : PRINCIPLES OF TESTING (15 Hrs)

Principles of Testing: Context of Testing in Producing Software – About this Chapter – The Complete Car – Dijkstra's Doctrine – A test In Time! – The Cast and Saint – Test the Tests First! – The Pesticide Paradox – The Convoy and the Rags – The Policemen on the Bridge- The Ends of the Pendulum – Men in Black – Automation Syndrome. *Software Development Life Cycle Models*: Phases of Software Project – Quality, Quality Assurance and Quality Control - Testing, Verification, and Validation – Process Model to Represent Different Phases – Life Cycle models.

UNIT II :WHITE BOX TESTING (15 Hrs)

White Box Testing: What is White Box Testing – Static Testing – Structural Testing – Challenges in White Box Testing.*Black Box Testing*: What is Black Box Testing- Why Black Box Testing – When to do Black Box Testing - How to do Black Box Testing – Conclusion.

UNIT III :INTEGRATION TESTING (15 Hrs)

*Integration Testing:*What is Integration Testing - Integration Testing as a Type of Testing – Integration Testing as a Phase of Testing – Scenario Testing – Defect Bash - Conclusion. *System and Acceptance Testing:*System Testing Overview – Why is System Testing Done – Functional Versus Non- Functional Testing – Functional

System Testing – Non Functional Testing -Acceptance testing – Summary of Testing Phases.

UNIT IV : PERFORMANCE TESTING (15 Hrs)

Performance Testing: Introduction – Factors Governing Performance testing – Methodology for Performance Testing- Tools for Performance Testing – Process for Performance Testing. *Regression Testing:* What is Regression Testing – Types of Regression Testing – When to Regression Testing – How to Regression Testing – Best Practices in Regression Testing.

UNIT V : TESTING TOOLS (15 Hrs)

WinRunner – Overview of WinRunner – Testing an application using WinRunner – Test Script Language – GUI Map File – Synchronization of Test Cases – Data Driven Testing – Rapid Test Script Wizard – Mapping Custom Object to a Standard Class - Checking GUI Objects.

DYNAMISM: (For CIA Only) (

UNIT V: Data Driven Testing – Rapid Test Script Wizard – Mapping Custom Object to a Standard Class - Checking GUI Objects.

TEXT BOOKS

1. ***Software Testing Principles and Practices,*** Srinivasan Desikan, Gopalaswamy, Ramesh, 1st Edition, 6th Reprint, Pearson Education, 2014. Chapters : 1- 8.
2. ***Software Testing Tools,*** Dr.K.V.K.K.Prasad, Published by Dreamtech Press, Edition, 2012.Chapters : 4

REFERENCE BOOKS

1. ***Software Quality and Testing: A Concise Study,*** S. A. Kelkar, 3rd Edition, PHI Learning, 2012.
2. ***Software Testing, Principles and Practices,*** Srinivasan Desikan, Gopalaswamy Ramesh, Pearson Education Inc., 2015
3. ***Software Testing- Principles, Techniques and Tools,*** M.G. Limaye, Tata McGraw-Hill Pvt. Ltd. 2017.

COURSE CONTENTS & TEACHING/LEARNING SCHEDULE

Module No.	Topic	No. of Lectures	Content Delivery Method	Teaching Aids
UNIT I - PRINCIPLES OF TESTING				
1.1	*Principles of Testing*: Context of Testing in Producing Software – About this Chapter – The Complete Car – Dijkstra's Doctrine – A test In Time! – The Cast and Saint – Test the Tests First! – The Pesticide Paradox – The Convoy and the Rags – The Policemen on the Bridge- The Ends of the Pendulum – Men in Black – Automation Syndrome.	5	Chalk & Talk	Black Board
1.2	*Software Development Life Cycle Models*: Phases of Software Project – Quality, Quality Assurance and Quality Control - Testing, Verification, and Validation	5	Lecture	Smart Board
1.3	Process Model to Represent Different Phases – Life Cycle models.	5	Lecture	Smart Board
UNIT II: WHITE BOX TESTING				
2.1	*White Box Testing*: What is White Box Testing – Static Testing – Structural Testing –	5	Chalk & Talk	Black Board
2.2	Challenges in White Box Testing.	5	Discussion	Google classroom
2.3	*Black Box Testing*: What is Black Box Testing- Why Black Box Testing – When to do Black Box Testing - How to do Black Box Testing – Conclusion.	5	Chalk & Talk	Black Board
UNIT III: INTEGRATION TESTING			**(15 Hrs)**	
3.1	*Integration Testing:*What is Integration Testing - Integration Testing as a Type of Testing – Integration Testing as a Phase of	5	Chalk & Talk	Black Board

	Testing –			
3.2	Scenario Testing – Defect Bash - Conclusion.	5	Chalk & Talk	Black Board
3.3	*System and Acceptance Testing:*System Testing Overview – Why is System Testing Done – Functional Versus Non- Functional Testing – Functional System Testing – Non Functional Testing -Acceptance testing – Summary of Testing Phases.	5	Discussion	Google classroom
UNIT IV: PERFORMANCE TESTING				
4.1	*Performance Testing*: Introduction – Factors Governing Performance testing – Methodology for Performance Testing-	5	Lecture	PPT & Smart Board
4.2	Tools for Performance Testing – Process for Performance Testing.	5	Chalk & Talk	Black Board
4.3	*Regression Testing:* What is Regression Testing – Types of Regression Testing – When to Regression Testing – How to Regression Testing – Best Practices in Regression Testing.	5	Lecture	PPT & Smart Board
UNIT V: TESTING TOOLS				
5.1	WinRunner – Overview of WinRunner – Testing an application using WinRunner –	5	Chalk & Talk	Black Board
5.2	Test Script Language – GUI Map File – Synchronization of Test Cases – Data Driven Testing – Rapid Test Script Wizard –	5	Chalk & Talk	Black Board
5.3	Mapping Custom Object to a Standard Class - Checking GUI Objects.	5	Chalk & Talk	Black Board

EVALUATION PATTERN

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

CIA	
Scholastic	35
Non Scholastic	5
	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 OUTCOMES	KNOWLEDGE LEVEL (ACCORDING TO REVISED BLOOM'S TAXONOMY)	PSOs ADDRESSED	POs ADDRESSED
CO 1	Explain various testing processes and continuous quality improvement	K1 & K2	PSO1& PSO3	PO1
CO 2	Describe White box testing and Black box testing	K1, K2,	PSO2	PO2
CO 3	Discuss integration testing and its types	K2 & K3	PSO4	PO3
CO 4	Explain Performance and Regression testing	K1, K2, K3	PSO5	PO2
CO 5	Explain high performance testing using WinRunner.	K2 & K4	PSO6	PO3

Mapping COs Consistency with PSOs

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

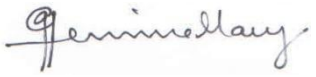
Mapping COs Consistency with POs

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

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

COURSE DESIGNER:
Dr. S.Arul Jothi

Forwarded By



(Dr.G.Germine Mary)
HOD'S Signature & Name

III B.Sc. Computer Science

20%
REPLACED
(NEW)
SYLLABUS

SEMESTER –VI

For those who joined in 2019 onwards

PROGRAMME CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS/ WEEK	CREDITS
UACS	19B6ME5	Software Testing	Major Elective	5	5

COURSE DESCRIPTION

To study fundamental concepts in software testing including software testing objectives, process, criteria, strategies, and methods.

COURSE OBJECTIVE/S

- To examine fundamental software testing and program analysis techniques.
- To understand the important phases of testing
- To emphasize the significance of each phase when testing different types of software.

UNITS

UNIT I : PRINCIPLES OF TESTING (15 Hrs)

Principles of Testing: Context of Testing in Producing Software – About this Chapter – The Complete Car – Dijkstra's Doctrine – A test In Time! – The Cast and Saint – Test the Tests First! – The Pesticide Paradox – The Convoy and the Rags – The Policemen on the Bridge- The Ends of the Pendulum – Men in Black – Automation Syndrome. *Software Development Life Cycle Models*: Phases of Software Project – Quality, Quality Assurance and Quality Control - Testing, Verification, and Validation – Process Model to Represent Different Phases – Life Cycle models.

UNIT II :WHITE BOX TESTING (15 Hrs)

White Box Testing: What is White Box Testing – Static Testing – Structural Testing – Challenges in White Box Testing.*Black Box Testing*: What is Black Box Testing- Why Black Box Testing – When to do Black Box Testing - How to do Black Box Testing – Conclusion.

UNIT III :INTEGRATION TESTING (15 Hrs)

*Integration Testing:*What is Integration Testing - Integration Testing as a Type of Testing – Integration Testing as a Phase of Testing – Scenario Testing – Defect Bash - Conclusion. *System and Acceptance Testing:*System Testing Overview – Why

is System Testing Done – Functional Versus Non- Functional Testing – Functional System Testing – Non Functional Testing -Acceptance testing – Summary of Testing Phases.

UNIT IV : SOFTWARE TEST AUTOMATION (15 Hrs)

What is test automation - : Introduction – Test planning – Test management – Test process – Terms used in test automation – Skills needed for automation – What to automate, Scope of automation – Design and architecture for automation – Generic requirements for test tool /Framework – Process model for automation. *Test metrics and measurements*: What are measurements – Why metrics in testing – Types of metrics – Project metrics – Progress metrics – Productivity metrics – Release metrics.

UNIT V : TESTING TOOLS (15 Hrs)

WinRunner – Overview of WinRunner – Testing an application using WinRunner – Test Script Language – GUI Map File – Synchronization of Test Cases – Data Driven Testing – Rapid Test Script Wizard – Mapping Custom Object to a Standard Class - Checking GUI Objects.

DYNAMISM: (For CIA Only)

UNIT V: Data Driven Testing – Rapid Test Script Wizard – Mapping Custom Object to a Standard Class - Checking GUI Objects.

TEXT BOOKS

1. ***Software Testing Principles and Practices,*** Srinivasan Desikan, Gopalaswamy, Ramesh, 1st Edition, 6th Reprint, Pearson Education, 2014. Chapters : 1- 6, 16
2. ***Software Testing Tools,*** Dr.K.V.K.K.Prasad, Published by Dreamtech Press, Edition, 2012.Chapters : 4

REFERENCE BOOKS

1. ***Software Quality and Testing: A Concise Study,*** S. A. Kelkar, 3rd Edition, PHI Learning, 2012.
2. ***Software Testing, Principles and Practices,*** Srinivasan Desikan, Gopalaswamy Ramesh, Pearson Education Inc., 2015
3. ***Software Testing- Principles, Techniques and Tools,*** M.G. Limaye, Tata McGraw-Hill Pvt. Ltd. 2017.

COURSE CONTENTS & TEACHING/LEARNING SCHEDULE

Module No.	Topic	No. of Lectures	Content Delivery Method	Teaching Aids
UNIT I - PRINCIPLES OF TESTING				
1.1	*Principles of Testing*: Context of Testing in Producing Software – About this Chapter – The Complete Car – Dijkstra's Doctrine – A test In Time! – The Cast and Saint – Test the Tests First! – The Pesticide Paradox – The Convoy and the Rags – The Policemen on the Bridge- The Ends of the Pendulum – Men in Black – Automation Syndrome.	5	Chalk & Talk	Black Board
1.2	*Software Development Life Cycle Models*: Phases of Software Project – Quality, Quality Assurance and Quality Control - Testing, Verification, and Validation	5	Lecture	Smart Board
1.3	Process Model to Represent Different Phases – Life Cycle models.	5	Lecture	Smart Board
UNIT II: WHITE BOX TESTING				
2.1	*White Box Testing*: What is White Box Testing – Static Testing – Structural Testing –	5	Chalk & Talk	Black Board
2.2	Challenges in White Box Testing.	5	Discussion	Google classroom
2.3	*Black Box Testing*: What is Black	5	Chalk &	Black Board

	Box Testing- Why Black Box Testing – When to do Black Box Testing - How to do Black Box Testing – Conclusion.		Talk	
UNIT III: INTEGRATION TESTING				**(15 Hrs)**
3.1	*Integration Testing:*What is Integration Testing - Integration Testing as a Type of Testing – Integration Testing as a Phase of Testing –	5	Chalk & Talk	Black Board
3.2	Scenario Testing – Defect Bash - Conclusion.	5	Chalk & Talk	Black Board
3.3	*System and Acceptance Testing:*System Testing Overview – Why is System Testing Done – Functional Versus Non-Functional Testing – Functional System Testing – Non Functional Testing -Acceptance testing – Summary of Testing Phases.	5	Discussio n	Google classroom
UNIT IV: SOFTWARE TEST AUTOMATION				
4.1	*Software test automation :* What is test automation - Introduction – Test planning – Test management – Test process – Terms used in test automation – Skills needed for automation	5	Lecture	PPT & Smart Board
4.2	What to automate, Scope of automation – Design and architecture for automation – Generic requirements for test tool /Framework – Process model for automation.	5	Chalk & Talk	Black Board
4.3	*Test metrics and measurements***:** What are measurements – Why metrics in testing – Types of metrics – Project metrics – Progress metrics – Productivity metrics – Release metrics.	5	Lecture	PPT & Smart Board

UNIT V: TESTING TOOLS				
5.1	WinRunner – Overview of WinRunner – Testing an application using WinRunner –	5	Chalk & Talk	Black Board
5.2	Test Script Language – GUI Map File – Synchronization of Test Cases – Data Driven Testing – Rapid Test Script Wizard –	5	Chalk & Talk	Black Board
5.3	Mapping Custom Object to a Standard Class - Checking GUI Objects.	5	Chalk & Talk	Black Board

EVALUATION PATTERN

Levels	C1	C2	C3	C4	C5	Total Scholastic Marks	Non Scholastic Marks C6	CIA Total	% of Assessment
	T1 10 Mks.	T2 10 Mks.	Quiz 5 Mks.	Assignment 5 Mks	OBT/ PPT 5 Mks	35 Mks.	5 Mks.	40 Mks.	
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 OUTCOMES	KNOWLEDGE LEVEL (ACCORDING TO REVISED BLOOM'S TAXONOMY)	PSOs ADDRESSED	POs ADDRESSED
CO 1	Explain various testing processes and continuous quality improvement	K1 & K2	PSO1& PSO3	PO1
CO 2	Describe White box testing and Black box testing	K1, K2,	PSO2	PO2
CO 3	Discuss integration testing and its types	K2 & K3	PSO4	PO3
CO 4	Explain Software test automation and test metrics	K1, K2, K3	PSO5	PO2
CO 5	Explain high performance testing using WinRunner.	K2 & K4	PSO6	PO3

Mapping COs Consistency with PSOs

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

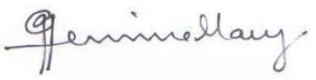
Mapping COs Consistency with Pos

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

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

COURSE DESIGNER:
Mrs.G.Rajathilagam

Forwarded By



(Dr.G.Germine Mary)

HOD'S Signature & Name

III B.Sc. Computer Science

OLD
SYLLABUS

SEMESTER –VI

For those who joined in 2019 onwards

PROGRAMME CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS/ WEEK	CREDITS
UACS	19B6ME6	Cloud Computing	Major Elective	5	5

COURSE DESCRIPTION

This course presents a top-down view of cloud computing, from applications and administration to programming and infrastructure.

COURSE OBJECTIVES

- To learn distributed communication
- To understand distributed resource management
- To study the basics of cloud computing
- To study about virtualization and cloud resource management

UNITS

UNIT I :Defining Cloud Computing (15 Hrs)

Defining Cloud Computing - Cloud Types – Examining the Characteristics of Cloud Computing – Assessing the Role of Open standards – Understanding Cloud Architecture: Exploring the Cloud Computing Stack. Composability, Infrastructure - Platforms - Virtual Appliances - Communication protocols - Applications - Connecting to the cloud

UNIT II :Understanding Services and Applications by type (15 Hrs)

Defining Infrastructure as a Service - Defining Platform as a Service - Defining Software as a Service - Defining Identity as a Service - Defining Compliance as a Service

UNIT III :Understanding Abstraction and Virtualization (15 Hrs)

Using Virtualization Technologies, Load balancing and Virtualization, Understanding Hypervisors, Understanding Machine Learning, Porting Applications

UNIT IV : Understanding Cloud Securituy (15 Hrs)

Securing the Cloud -Securing the data - Moving applications to the cloud - Cloud Storage: Definition – Provisioning –Cloud storage - Cloud Backup solutions - Cloud storage Interoperability

UNIT V :Moving applications to the Cloud (15 Hrs)

Applications to the Cloud – Applications and Cloud API Case Study: Google Web Services- Amazon Web Services - Microsoft Cloud Services.

SELF STUDY:

UNIT V: Amazon Web Services - Microsoft Cloud Services.

TEXT BOOK

Cloud Computing Bible, BarrieSosinsky, Wiley India Pvt. Ltd.- 2011
Chapters: 1,3,4,5,12,14

REFERENCE BOOKS

1. ***Cloud Computing with Windows Azure Platform***, Roger Jennings, Wiley India Pvt. Ltd2009.
2. ***Cloud Computing,*** Bloor R., Kanfman M., Halper F. Judith Hurwitz, " Wiley India Edition, 2010
3. ***Cloud Computing Implementation Management and Strategy***, JohnRittinghouse& James Ransome, CRC Press, 2010
4. **Cloud Computing: Concepts and Practice**, Naresh Kumar Sehgal and Pramod Chandra P.Bhatt, Springer, 2018

COURSE CONTENTS & TEACHING/LEARNING SCHEDULE

Module No.	Topic	No. of Lectures	Content Delivery Method	Teaching Aids
UNIT I - Defining Cloud Computing				
1.1	Defining Cloud Computing - Cloud Types – Examining the Characteristics of Cloud Computing	5	Chalk & Talk	Black Board
1.2	Assessing the Role of Open standards – Understanding Cloud Architecture: Exploring the Cloud Computing Stack.	5	Lecture	Smart Board
1.3	Composability, Infrastructure - Platforms - Virtual Appliances - Communication protocols - Applications - Connecting to the cloud	5	Lecture	Smart Board
UNIT II: Understanding Services and Applications by type				
2.1	Defining Infrastructure as a Service - Defining Platform as a Service -	5	Chalk & Talk	Black Board
2.2	Defining Software as a Service - Defining Identity as a Service -	5	Chalk & Talk	Black Board
2.3	Defining Compliance as a Service	5	Discussion	Google classroom
UNIT III: Understanding Abstraction and Virtualization				
3.1	Using Virtualization	6	Chalk &	Black Board

	Technologies, Load balancing and Virtualization,		Talk	
3.2	Understanding Hypervisors, Understanding Machine Learning,	6	Chalk & Talk	Black Board
3.3	Porting Applications	3	Discussion	Google classroom
UNIT IV: Understanding Cloud Security				
4.1	Securing the Cloud -Securing the data - Moving applications to the cloud -	5	Lecture	PPT & Smart Board
4.2	Cloud Storage: Definition – Provisioning –Cloud storage -	5	Chalk & Talk	Black Board
4.3	Cloud Backup solutions - Cloud storage Interoperability	4	Lecture	PPT & Smart Board
UNIT V: Moving applications to the Cloud				
5.1	Applications to the Cloud – Applications and Cloud API	6	Chalk & Talk	Black Board
5.2	Case Study: Google Web Services- Amazon Web Services -	6	Chalk & Talk	Black Board
5.3	Microsoft Cloud Services.	3	Chalk & Talk	Black Board

EVALUATION PATTERN

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

Non Scholastic	-	-	-	-	-		**5**	**5**	12.5 %
Total	**10**	**10**	**5**	**5**	**5**	**35**	**5**	**40**	**100 %**

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

✔ **The levels of CIA Assessment based on Revised Bloom's Taxonomy for I 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

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 cloud computing and related concepts	K1	PSO2& PSO3	PO1
CO 2	Explain the key dimensions of the challenges of Cloud Computing	K1& K2	PSO1	PO1
CO 3	Discuss the assessment of the economics , financial, and technological implications for selecting cloud computing for an organization	K1 & K3	PSO5	PO2
CO 4	Describe the benefits of cloud computing and to understand	K1, K2&K3	PSO4	PO3

	different layers of the cloud technologies, practical solutions			
CO 5	Explain the challenges of cloud computing and determine the suitability of in-house v/s hosted solutions	K2 & K4	PSO6	PO4

Mapping COs Consistency with PSOs

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

Mapping COs Consistency with POs

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

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

COURSE DESIGNER:
Dr. S.Arul Jothi

Forwarded By

(Dr.G.Germine Mary)
HOD'S Signature & Name

III B.Sc. Computer Science

10 %
REDUCED
(NEW)

SEMESTER –VI

For those who joined in 2019 onwards

PROGRAMME CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS/ WEEK	CREDITS
UACS	19B6ME6	Cloud Computing	Major Elective	5	5

COURSE DESCRIPTION

This course presents a top-down view of cloud computing, from applications and administration to programming and infrastructure.

COURSE OBJECTIVES

- To learn distributed communication
- To understand distributed resource management
- To study the basics of cloud computing
- To study about virtualization and cloud resource management

UNITS

UNIT I : Defining Cloud Computing (15 Hrs)

Defining Cloud Computing - Cloud Types – Examining the Characteristics of Cloud Computing –Understanding Cloud Architecture: Exploring the Cloud Computing Stack. Composability, Infrastructure - Platforms - Applications - Connecting to the cloud

UNIT II : Understanding Services and Applications by type (15 Hrs)

Defining Infrastructure as a Service - Defining Platform as a Service - Defining Software as a Service - Defining Identity as a Service - Defining Compliance as a Service

UNIT III : Understanding Abstraction and Virtualization (15 Hrs)

Using Virtualization Technologies, Load balancing and Virtualization, Understanding Hypervisors, Understanding Machine Learning, Porting Applications

UNIT IV : Understanding Cloud Security (15 Hrs)

Securing the Cloud -Securing the data - Moving applications to the cloud - Cloud Storage: Definition –Cloud storage - Cloud Backup solutions - Cloud storage Interoperability

UNIT V : Moving applications to the Cloud (15 Hrs)

Applications to the Cloud – Applications and Cloud API Case Study: Google Web

Services- Amazon Web Services - Microsoft Cloud Services.

SELF STUDY:

UNIT V: Amazon Web Services - Microsoft Cloud Services.

TEXT BOOK

Cloud Computing Bible, Barrie Sosinsky, Wiley India Pvt. Ltd.- 2011
Chapters: 1,3,4,5,12,14

REFERENCE BOOKS

1. ***Cloud Computing with Windows Azure Platform***, Roger Jennings, Wiley India Pvt. Ltd2009.
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3. ***Cloud Computing Implementation Management and Strategy***, John Ritting house & James Ransome, CRC Press, 2010
4. **Cloud Computing: Concepts and Practice**, Naresh Kumar Sehgal and Pramod Chandra P.Bhatt, Springer, 2018

COURSE CONTENTS & TEACHING/LEARNING SCHEDULE

Module No.	Topic	No. of Lectures	Content Delivery Method	Teaching Aids
UNIT I - Defining Cloud Computing				
1.1	Defining Cloud Computing - Cloud Types – Examining the Characteristics of Cloud Computing	5	Chalk & Talk	Black Board
1.2	Understanding Cloud Architecture: Exploring the Cloud Computing Stack.	5	Lecture	Smart Board
1.3	Composability, Infrastructure - Platforms - Applications - Connecting to the cloud	5	Lecture	Smart Board
UNIT II: Understanding Services and Applications by type				
2.1	Defining Infrastructure as a Service - Defining Platform as a Service -	5	Chalk & Talk	Black Board
2.2	Defining Software as a Service - Defining Identity as a Service -	5	Chalk & Talk	Black Board

2.3	Defining Compliance as a Service	5	Discussion	Google classroom
UNIT III: Understanding Abstraction and Virtualization				
3.1	Using Virtualization Technologies, Load balancing and Virtualization,	6	Chalk & Talk	Black Board
3.2	Understanding Hypervisors, Understanding Machine Learning,	6	Chalk & Talk	Black Board
3.3	Porting Applications	3	Discussion	Google classroom
UNIT IV: Understanding Cloud Security				
4.1	Securing the Cloud -Securing the data - Moving applications to the cloud -	5	Lecture	PPT & Smart Board
4.2	Cloud Storage: Definition – Cloud storage -	5	Chalk & Talk	Black Board
4.3	Cloud Backup solutions - Cloud storage Interoperability	4	Lecture	PPT & Smart Board
UNIT V: Moving applications to the Cloud				
5.1	Applications to the Cloud – Applications and Cloud API	6	Chalk & Talk	Black Board
5.2	Case Study: Google Web Services- Amazon Web Services -	6	Chalk & Talk	Black Board
5.3	Microsoft Cloud Services.	3	Chalk & Talk	Black Board

EVALUATION PATTERN

Levels	C1	C2	C3	C4	C5	Total Scholastic Marks	Non Scholastic Marks C6	CIA Total	% of Assessment
	T1 10 Mks.	T2 10 Mks.	Quiz 5 Mks.	Assignment 5 Mks	OBT/ PPT 5 Mks	35 Mks.	5 Mks.	40 Mks.	
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 for I 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

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 cloud computing and related concepts	K1	PSO2& PSO3	PO1
CO 2	Explain the key dimensions of the challenges of Cloud Computing	K1& K2	PSO1	PO1
CO 3	Discuss the assessment of the economics , financial, and technological implications for selecting cloud computing for an organization	K1 & K3	PSO5	PO2
CO 4	Describe the benefits of cloud computing and to understand different layers of the cloud technologies, practical solutions	K1, K2&K3	PSO4	PO3
CO 5	Explain the challenges of cloud computing and determine the suitability of in-house v/s hosted solutions	K2 & K4	PSO6	PO4

Mapping COs Consistency with PSOs

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

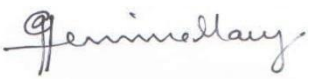
Mapping COs Consistency with Pos

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

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

COURSE DESIGNER:
Dr.S.Arul Jothi

Forwarded By



(Dr.G.Germine Mary)

HOD'S Signature & Name

III B.Sc. Computer Science

OLD
SYLLABUS

SEMESTER –VI

For those who joined in 2019 onwards

PROGRAMME CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS/ WEEK	CREDITS
UACS	19B6ME7	Introduction To Artificial Intelligence	Major Elective	5	5

COURSE DESCRIPTION

The course aims to orient the students to develop interest towards Artificial Intelligence(AI) the latest technology.

COURSE OBJECTIVES

- To provide the basic ideas on AI
- To impart knowledge on the various search techniques and the basic functioning of AI
- To impart the basics of NLP, Game Playing
- To impart the basics of Neural Networks
- To instil the research acumen by providing the fundamentals of AI

SYLLABUS

UNIT I: INTRODUCTION TO AI [15 HRS]

Artificial Intelligence: The AI Problems – The Underlying Assumption – AI Technique – The level of the Model – Criteria for Success. Problems, Problem Spaces and Search: Defining the Problem as a State Space Search – Production Systems – Problems Characteristics – Production System Characteristics – Issues in the Design of Search Programs – Additional Problems.

UNIT II: HEURISTIC SEARCH TECHNIQUES [15 HRS]

Generate-and-Test – Hill Climbing – Best-First Search – Problem Reduction – Constraint Satisfaction – Means-Ends Analysis.

UNIT III: KNOWLEDGE REPRESENTATION [15 HRS]

Representing Knowledge using Rules: Procedural versus Declarative knowledge – Logic Programming – Forward versus Backward Reasoning – Matching – Control Knowledge. Knowledge Representation issues: Representations and Mappings – Approaches to Knowledge Representation – Issues in Knowledge representation -

The Frame Problem.

UNIT IV: PREDICATE LOGIC [15 HRS]

Using Predicate Logic: Representing Simple Facts in Logic – Representing instance and isa Relationships – Computable Functions and Predicates – Resolution – Natural Deduction.

UNIT V: INTRODUCTION TO NLP, NEURAL NETS, GAME PLAYING [15 HRS]

Game Playing: Overview – The Minimax Search Procedure. Natural Language Processing: Introduction. Connectionist Models: Introduction - Hopfield Networks – Learning in Neural Networks: Perceptrons.

UNIT VI: (INTERNAL ONLY)
Latest developments in Artificial Intelligence

SELF STUDY :
UNIT I : Issues in the Design of Search Programs – Additional Problems.
UNIT III: Approaches to Knowledge Representation – Issues in Knowledge representation - The Frame Problem

TEXT BOOK
Artificial Intelligence, Elaine Rich, Kevin Knight andShivashankar B Nair, 3rd Edition, Tata McGraw-Hill publications, 2014 Reprint.
Chapters : 1 - 6 , 12.1, 12.2, 15.1, 18.1, 18.2.1

REFERENCE BOOKS

1. ***Artificial Intelligence,*** Elaine Rich, Tata McGraw-Hill publications, 2008.
2. ***Foundations of Artificial Intelligence and Expert System***, V.S.Janakiraman K. Sarukesi, P.Gopalakrishnan, Infinity Press, 1st Edition, 2016.

COURSE CONTENTS & TEACHING/LEARNING SCHEDULE

Module No.	Topic	No. of Lectures	Content Delivery Method	Teaching Aids
UNIT i- INTRODUCTION TO AI				
1.1	Artificial Intelligence: The AI Problems – The Underlying Assumption – AI Technique – The level of the Model – Criteria for Success.	6	Chalk & Talk	Black Board
1.2	Problems, Problem Spaces and Search: Defining the Problem as a State Space Search – Production Systems – Problems Characteristics – Production System Characteristics –.	5	Lecture	Smart Board
1.3	Issues in the Design of Search Programs – Additional Problems	4	Lecture	Smart Board
UNIT II: HEURISTIC SEARCH TECHNIQUES				
2.1	Generate-and-Test – Hill Climbing – Best-First Search –	6	Chalk & Talk	Black Board
2.2	Problem Reduction – Constraint Satisfaction –	5	Chalk & Talk	Black Board
2.3	Means-Ends Analysis	4	Discussion	Google classroom
UNIT III:KNOWLEDGE REPRESENTATION				
3.1	Representing Knowledge using Rules: Procedural versus Declarative knowledge – Logic Programming – Forward versus Backward Reasoning – Matching – Control Knowledge.	5	Chalk & Talk	Black Board
3.2	Knowledge Representation issues: Representations and Mappings – Approaches to Knowledge Representation –	5	Chalk & Talk	Black Board
3.3	Issues in Knowledge representation -	5	Discussion	Google

	The Frame Problem.			classroom
UNIT IV: PREDICATE LOGIC				
4.1	Using Predicate Logic: Representing Simple Facts in Logic –	5	Lecture	PPT & Smart Board
4.2	Representing instance and isa Relationships – Computable.	5	Chalk & Talk	Black Board
4.3	Functions and Predicates – Resolution – Natural Deduction	5	Lecture	PPT & Smart Board
UNIT V: INTRODUCTION TO NLP, NEURAL NETS, GAME PLAYING				
5.1	Game Playing: Overview – The Minimax Search Procedure.	4	Chalk & Talk	Black Board
5.2	Natural Language Processing: Introduction.	4	Chalk & Talk	Black Board
5.3	Connectionist Models: Introduction - Hopfield Networks – Learning in	4	Chalk & Talk	Black Board
5.4	Neural Networks: Perceptrons.	3		

EVALUATION PATTERN

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

CIA	
Scholastic	35
Non Scholastic	5
	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 OUTCOMES	KNOWLEDGE LEVEL (ACCORDING TO REVISED BLOOM'S TAXONOMY)	PSOs ADDRESSED	POs ADDRESSED
CO 1	Explain basic ideas on AI	K1	PSO1& PSO2	PO1
CO 2	Discuss knowledge on the various search techniques and the basic functioning of AI	K1& K2,	PSO3	PO1
CO 3	Discuss basics of NLP, Game Playing	K1 & K3	PSO4	PO2
CO 4	Explain basics of Neural Networks	K1& K2	PSO5	PO3
CO 5	Research acumen by providing the fundamentals	K2 & K4	PSO6	PO4

Mapping COs Consistency with PSOs

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

Mapping of C0s with POs

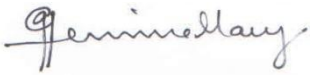
CO/ PSO	PO1	PO2	PO3	PO4
CO1	**3**	2	1	2
CO2	**3**	2	2	1
CO3	2	**3**	1	1
CO4	1	2	**3**	2
CO5	1	2	2	**3**

Note: ♦ Strongly Correlated – **3** ♦ ModeratelyCorrelated – **2** ♦ WeaklyCorrelated -**1**

COURSE DESIGNER:

Dr. S.Vidya

Forwarded By



(Dr.G.Germine Mary)

HOD'S Signature & Name

10 %
REDUCED
(NEW)

III B.Sc. Computer Science
SEMESTER –VI
For those who joined in 2019 onwards

PROGRAMME CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS/ WEEK	CREDITS
UACS	19B6ME7	Introduction To Artificial Intelligence	Major Elective	5	5

COURSE DESCRIPTION

The course aims to orient the students to develop interest towards Artificial Intelligence(AI) the latest technology.

COURSE OBJECTIVES

- To provide the basic ideas on AI
- To impart knowledge on the various search techniques and the basic functioning of AI
- To impart the basics of NLP, Game Playing
- To impart the basics of Neural Networks
- To instil the research acumen by providing the fundamentals of AI

SYLLABUS

UNIT I: INTRODUCTION TO AI [15 HRS]

Artificial Intelligence: The AI Problems – The Underlying Assumption – AI Technique – The level of the Model – Criteria for Success. Problems, Problem Spaces and Search: Defining the Problem as a State Space Search – Production Systems – Problems Characteristics – Production System Characteristics – Issues in the Design of Search Programs.

UNIT II: HEURISTIC SEARCH TECHNIQUES [15 HRS]

Generate-and-Test – Hill Climbing – Best-First Search – Problem Reduction – Constraint Satisfaction – Means-Ends Analysis.

UNIT III: KNOWLEDGE REPRESENTATION [15 HRS]

Representing Knowledge using Rules: Procedural versus Declarative knowledge– Forward versus Backward Reasoning – Matching – Control Knowledge. Knowledge

Representation issues: Representations and Mappings – Approaches to Knowledge Representation – Issues in Knowledge representation - The Frame Problem.

UNIT IV: PREDICATE LOGIC [15 HRS]

Using Predicate Logic: Representing Simple Facts in Logic – Representing instance and isa Relationships – Computable Functions and Predicates – Resolution – Natural Deduction.

UNIT V: INTRODUCTION TO NLP, NEURAL NETS [15 HRS]

Natural Language Processing: Introduction. Connectionist Models: Introduction - Hopfield Networks – Learning in Neural Networks: Perceptrons.

UNIT VI: (INTERNAL ONLY)

Latest developments in Artificial Intelligence

SELF STUDY :

UNIT I : Issues in the Design of Search Programs.

UNIT III: Approaches to Knowledge Representation – Issues in Knowledge representation - The Frame Problem

TEXT BOOK

Artificial Intelligence, Elaine Rich, Kevin Knight and Shivashankar B Nair, 3rd Edition, Tata McGraw-Hill publications, 2014 Reprint.
Chapters : 1 - 6 , 12.1, 12.2, 15.1, 18.1, 18.2.1

REFERENCE BOOKS

1. ***Artificial Intelligence,*** Elaine Rich, Tata McGraw-Hill publications, 2008.
2. ***Foundations of Artificial Intelligence and Expert System***, V.S.Janakiraman K. Sarukesi, P.Gopalakrishnan, Infinity Press, 1st Edition, 2016.

COURSE CONTENTS & TEACHING/LEARNING SCHEDULE

Module No.	Topic	No. of Lectures	Content Delivery Method	Teaching Aids
UNIT I- INTRODUCTION TO AI				
1.1	Artificial Intelligence: The AI Problems – The Underlying Assumption – AI Technique – The level of the Model – Criteria for Success.	6	Chalk & Talk	Black Board
1.2	Problems, Problem Spaces and Search: Defining the Problem as a State Space Search – Production Systems – Problems Characteristics – Production System Characteristics –.	5	Lecture	Smart Board
1.3	Issues in the Design of Search Programs	4	Lecture	Smart Board
UNIT II: HEURISTIC SEARCH TECHNIQUES				
2.1	Generate-and-Test – Hill Climbing – Best-First Search –	6	Chalk & Talk	Black Board
2.2	Problem Reduction – Constraint Satisfaction –	5	Chalk & Talk	Black Board
2.3	Means-Ends Analysis	4	Discussion	Google classroom
UNIT III:KNOWLEDGE REPRESENTATION				
3.1	Representing Knowledge using Rules: Procedural versus Declarative knowledge – Logic Programming – Forward versus Backward Reasoning – Matching – Control Knowledge.	5	Chalk & Talk	Black Board
3.2	Knowledge Representation issues: Representations and Mappings –	5	Chalk & Talk	Black Board

	Approaches to Knowledge Representation –			
3.3	Issues in Knowledge representation - The Frame Problem.	5	Discussion	Google classroom
UNIT IV: PREDICATE LOGIC				
4.1	Using Predicate Logic: Representing Simple Facts in Logic –	5	Lecture	PPT & Smart Board
4.2	Representing instance and isa Relationships – Computable.	5	Chalk & Talk	Black Board
4.3	Functions and Predicates – Resolution – Natural Deduction	5	Lecture	PPT & Smart Board
UNIT V: INTRODUCTION TO NLP, NEURAL NETS				
5.1	Game Playing: Overview – The Minimax Search Procedure.	4	Chalk & Talk	Black Board
5.2	Natural Language Processing: Introduction.	4	Chalk & Talk	Black Board
5.3	Connectionist Models: Introduction - Hopfield Networks – Learning in	4	Chalk & Talk	Black Board
5.4	Neural Networks: Perceptrons.	3		

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.	40 Mks.	
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 OUTCOMES	KNOWLEDGE LEVEL (ACCORDING TO REVISED BLOOM'S TAXONOMY)	PSOs ADDRESSED	POs ADDRESSED
CO 1	Explain basic ideas on AI	K1	PSO1& PSO2	PO1
CO 2	Discuss knowledge on the various search techniques and the basic functioning of AI	K1& K2,	PSO3	PO1
CO 3	Discuss basics of NLP, Game Playing	K1 & K3	PSO4	PO2
CO 4	Explain basics of Neural Networks	K1& K2	PSO5	PO3
CO 5	Research acumen by providing the fundamentals	K2 & K4	PSO6	PO4

Mapping COs Consistency with PSOs

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

Mapping of COs with Pos

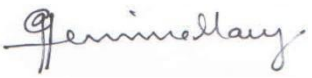
CO/ PSO	PO1	PO 2	PO3	PO 4
CO1	**3**	2	1	2
CO2	**3**	2	2	1
CO3	2	**3**	1	1
CO4	1	2	**3**	2
CO5	1	2	2	**3**

Note: ♦ Strongly Correlated – **3** ♦ ModeratelyCorrelated – **2**
♦ WeaklyCorrelated -**1**

COURSE DESIGNER:

Dr. S.Vidya

Forwarded By



(Dr.G.Germine Mary)

HOD'S Signature & Name

III B.Sc. Computer Science

OLD
SYLLABUS

SEMESTER –VI

For those who joined in 2019 onwards

PROGRAMME CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS/ WEEK	CREDITS
UACS	19B6ME8	Mobile Computing using Android	Major Elective	5	5

COURSE DESCRIPTION

This Course provides overview of coverage of various wireless networks and explains how different stations work with agents to connect mobile world.

COURSE OBJECTIVES

- To enable the students to understand the OS, protocols and security used in mobile technology
- To introduce the concept of mobile computing and provide a foundation for research

SYLLABUS

UNIT I: MOBILE COMMUNICATIONS AN OVERVIEW [15 HRS]

Mobile Communication –Mobile Computing-Mobile Computing Architecture-Mobile Devices-Mobile System Networks-Data Dissemination –Mobile Management-Security.

UNIT II: MOBILE DEVICES AND SYSTEM [15 HRS]

Cellular Network and Frequency Reuse-Mobile Smart Phones, Smart Mobiles, and Systems-Handled Pocket Computers-Handled Devices.GSM and Other 2G Architectures:
GSM-Services and System Architecture-Radio Interfaces of GSM-Protocols of GSM-Localization –Call Handling.

UNIT III:INTRODUCTION TO ANDROID OPERATING SYSTEM [15 HRS]

Android-open handset alliance-android ecosystem-android version –android activity-features of android-android architecture-stack linux kernel.

UNIT IV: CONFIGURATION OF ANDROID ENVIRONMENT [15 HRS]

Operating System-Java JDK-Android SDK-Android Development Tools(AVD)-Emulators-Dalvik Virtual Machine-Difference Between Java Virtual Machine and Dalvik Virtual Machine.

UNIT V: ANDROID USER INTERFACE [15 HRS]

Linear Layout-Absolute Layout-Frame Layout-Relative Layout-Table Layout.
Designing Your User Interface with View:
Text View-Button-Image Button-Edit Text-Check Box-Toggle Button-Radio Button and Radio Group-Progress Bar-Autocomplete Text View-Spinner-List View-Grid View-Image View-Scroll View-Custom Toast Alert-Time And Date Picker.

SELF STUDY :

UNIT IV : Operating System-Java JDK-Android SDK, Difference Between Java Virtual Machine and Dalvik Virtual Machine

TEXT BOOK

1. ***MOBILE COMPUTING*** –Raj Kamal ,Second Edition,2014, Oxford University Press, 2014
2. ***ANDROID***-Prasanna Kumar Dixit,Vikas Publishing House Pvt Ltd, 2014

REFERENCE BOOKS

1. MOBILE COMPUTING Technology ,Application and Service Creation –Asoke K
Talukder, Ph.D. ,Second Edition ,Tata Mc Graw Hill Education Private Limited, 2011
2. ANDROID APPLICATION DEVELOPMENT(with kitkat support)Black Book, Pradeep Kothari, Published By Dreanlech, 2017
3. ***BEGINNING ANDROID 4 APPLICATION DEVELOPMENT ,***Wei-Meng Lee Published By WileY, 2016

COURSE CONTENTS & TEACHING/LEARNING SCHEDULE

Module No.	Topic	No. of Lectures	Content Delivery Method	Teaching Aids
UNIT I - MOBILE COMMUNICATIONS AN OVERVIEW				
1.1	Mobile Communication –Mobile Computing-	4	Chalk & Talk	Black Board
1.2	Mobile Computing Architecture-Mobile Devices-	4	Lecture	Smart Board
1.3	Mobile System Networks-Data Dissemination –	4	Lecture	Smart Board
1.4	Mobile Management-Security	3	Lecture	Black Board
UNIT II: MOBILE DEVICES AND SYSTEM				
2.1	Cellular Network and Frequency Reuse-Mobile Smart Phones, Smart Mobiles, and Systems-Handled Pocket Computers-Handled Devices.	5	Chalk & Talk	Black Board
2.2	GSM and Other 2G Architectures: GSM-Services and System Architecture-	5	Chalk & Talk	Black Board
2.3	Radio Interfaces of GSM-Protocols of GSM-Localization –Call Handling.	5	Discussion	Google classroom
UNIT III: INTRODUCTION TO ANDROID OPERATING SYSTEM				
3.1	Android-open handset alliance-android ecosystem-android version –	6	Chalk & Talk	Black Board
3.2	android activity-features of android-android architecture-	6	Chalk & Talk	Black Board
3.3	stack linux kernel	3	Discussion	Google classroom
UNIT IV: CONFIGURATION OF ANDROID ENVIRONMENT				
4.1	Operating System-Java JDK-Android SDK-	5	Lecture	PPT & Smart Board
4.2	Android Development Tools(AVD)-Emulators-Dalvik Virtual Machine-.	5	Chalk & Talk	Black Board
4.3	Difference Between Java Virtual Machine and Dalvik Virtual	5	Lecture	PPT & Smart

	Machine			Board

UNIT V: ANDROID USER INTERFACE				
5.1	Linear Layout-Absolute Layout-Frame Layout-Relative Layout-Table Layout. .	5	Chalk & Talk	Black Board
5.2	Designing Your User Interface with View: Text View-Button-Image Button-Edit Text-Check Box-Toggle Button-Radio Button and Radio Group-Progress Bar-Autocomplete Text View-	5	Chalk & Talk	Black Board
5.3	Spinner-List View-Grid View-Image View-Scroll View-Custom Toast Alert-Time And Date Picker	5	Chalk & Talk	Black Board

EVALUATION PATTERN

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

Non Scholastic	-	-	-	-	-		**5**	**5**	12.5 %
Total	**10**	**10**	**5**	**5**	**5**	**35**	**5**	**40**	**100 %**

CIA	
Scholastic	**35**
Non Scholastic	**5**
	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 OUTCOMES**	**KNOWLEDGE LEVEL (ACCORDING TO REVISED BLOOM'S TAXONOMY)**	**PSOs ADDRESSED**	**POs ADDRESSED**
CO 1	Explain Pervasive Computing	K1	PSO1& PSO2	PO1
CO 2	Identify different operating systems	K1& K2,	PSO3	PO1
CO 3	Discuss the importance of Security	K1 & K3	PSO4	PO2
CO 4	Explain Internet Protocols deduction mechanisms	K1& K2	PSO5	PO3
CO 5	Describe different Gateways	K2 & K4	PSO6	PO4

Mapping COs Consistency with PSOs

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

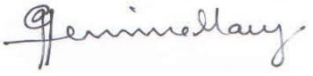
Mapping COs Consistency with POs

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

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

COURSE DESIGNER:
Dr. P.Meenakshi Sundari

Forwarded by



(Dr.G.Germine Mary)

HOD'S Signature& Name

III B.Sc. Computer Science

20%
REDUCED
(NEW)

SEMESTER –VI

For those who joined in 2022 onwards

PROGRAMME CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS/ WEEK	CREDITS
UACS	19B6ME8	Mobile Computing and Application Development	Major Elective	5	5

COURSE DESCRIPTION

This Course provides overview of coverage of various wireless networks, different stations work with agents to connect mobile world and basic designing for developing mobile applications

COURSE OBJECTIVES

- To enable the students to understand the OS, protocols and security used in mobile technology
- To introduce the concept of mobile computing and provide a foundation for research.
- To enable students to understand the application development lifecycle.
- To initiate students to identify, analyze and choose tools for mobile application development including device emulator, profiling tools and IDE

SYLLABUS

UNIT I: AN OVERVIEW OF MOBILE COMMUNICATION [15 HRS]

Mobile Communication –Mobile Computing-Mobile Computing Architecture-Mobile Devices-Mobile System Networks-Data Dissemination –Mobile Management-Security.

UNIT II: MOBILE DEVICES AND SYSTEM [15 HRS]

Cellular Network and Frequency Reuse-Mobile Smart Phones, Smart Mobiles, and Systems-Handled Pocket Computers-Handled Devices.

GSM and Other 2G Architectures: GSM-Services and System Architecture-Radio

Interfaces of GSM-Protocols of GSM-Localization –Call Handling.

UNIT III: CONFIGURATION OF ANDROID ENVIRONMENT [15 HRS]

Operating System-Java JDK-Android SDK-Android Development Tools(AVD)-Emulators-Dalvik Virtual Machine-Difference Between Java Virtual Machine and Dalvik Virtual Machine.

UNIT IV: ANDROID USER INTERFACE [15 HRS]

Linear Layout-Absolute Layout-Frame Layout-Relative Layout-Table Layout.

UNIT V: DESIGNING USER INTERFACE WITH VIEW [15 HRS]

Text View-Button-Image Button-Edit Text-Check Box-Toggle Button-Radio Button and Radio Group-Progress Bar-Autocomplete Text View-Spinner-List View-Grid View-Image View-Scroll View-Custom Toast Alert-Time And Date Picker.

SELF STUDY :

UNIT III : Operating System-Java JDK-Android SDK, Difference Between Java Virtual Machine and Dalvik Virtual Machine

TEXT BOOK

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1. ***MOBILE COMPUTING Technology ,Application and Service Creation*** –Asoke K Talukder, Ph.D. ,Second Edition ,Tata Mc Graw Hill Education Private Limited, 2011
2. ***ANDROID APPLICATION DEVELOPMENT(with kitkat support)*** Black Book, Pradeep Kothari, Published By Dreanlech, 2017
3. ***BEGINNING ANDROID 4 APPLICATION DEVELOPMENT ,***Wei-Meng Lee Published By WileY, 2016

COURSE CONTENTS & TEACHING/LEARNING SCHEDULE

Module No.	Topic	No. of Lectures	Content Delivery Method	Teaching Aids
UNIT I - MOBILE COMMUNICATIONS AN OVERVIEW				
1.1	Mobile Communication –Mobile Computing-	4	Chalk & Talk	Black Board
1.2	Mobile Computing Architecture-Mobile Devices-	4	Lecture	Smart Board
1.3	Mobile System Networks-Data Dissemination –	4	Lecture	Smart Board
1.4	Mobile Management-Security	3	Lecture	Black Board
UNIT II: MOBILE DEVICES AND SYSTEM				
2.1	Cellular Network and Frequency Reuse-Mobile Smart Phones, Smart Mobiles, and Systems-Handled Pocket Computers-Handled Devices.	5	Chalk & Talk	Black Board
2.2	GSM and Other 2G Architectures: GSM-Services and System Architecture-	5	Chalk & Talk	Black Board
2.3	Radio Interfaces of GSM-Protocols of GSM-Localization –Call Handling.	5	Discussion	Google classroom
UNIT III: CONFIGURATION OF ANDROID ENVIRONMENT				
4.1	Operating System-Java JDK-Android SDK-	5	Lecture	PPT & Smart Board
4.2	Android Development Tools(AVD)-Emulators-Dalvik	5	Chalk & Talk	Black Board

	Virtual Machine-.			
4.3	Difference Between Java Virtual Machine and Dalvik Virtual Machine	5	Lecture	PPT & Smart Board
UNITI V: ANDROID USER INTERFACE				
4.1	Linear Layout-Absolute Layout-	5	Chalk & Talk	Black Board
4.1	Frame Layout-Relative Layout.	5	Chalk & Talk	Black Board
4.3	Table Layout. .	5	Chalk & Talk	Black Board
UNITI V: DESIGNING USER INTERFACE WITH VIEWS				
5.2	Text View-Button-Image Button-Edit Text-Check Box-Toggle Button-Radio Button and Radio Group-Progress Bar-Autocomplete Text View-	5	Chalk & Talk	Black Board
5.3	Spinner-List View-Grid View-Image View-Scroll View-Custom Toast Alert-Time And Date Picker	5	Chalk & Talk	Black Board

EVALUATION PATTERN

Levels	C1	C2	C3	C4	C5	Total Scholastic Marks	Non Scholastic Marks C6	CIA Total	% of Assessment
	T1 10 Mks.	T2 10 Mks.	Quiz 5 Mks.	Assignment 5 Mks	OBT/ PPT 5 Mks	35 Mks.	5 Mks.	40 Mks.	
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 OUTCOMES	KNOWLEDGE LEVEL (ACCORDING TO REVISED BLOOM'S TAXONOMY)	PSOs ADDRESSED	POs ADDRESSED
CO 1	Explain OS, protocols and security used in mobile technology	K1	PSO1& PSO2	PO1
CO 2	Describe the mobile devices and its system architecture	K1& K2,	PSO3	PO1
CO 3	Configure the mobile application environment	K1 & K3	PSO4	PO2
CO 4	Discuss the layout for mobile application environment	K1& K2	PSO5	PO3
CO 5	Design mobile applications using user interfaces	K2 & K4	PSO6	PO4

Mapping COs Consistency with PSOs

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

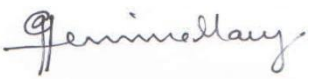
Mapping COs Consistency with POs

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

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

COURSE DESIGNER:
Dr. P.Meenakshi Sundari

Forwarded by



(Dr.G.Germine Mary)
HOD'S Signature& Name

III B.Sc. Computer Science

OLD
SYLLABUS

SEMESTER –VI

For those who joined in 2019 onwards

PROGRAMME CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS/ WEEK	CREDITS
UACS	19B6ME9	Big Data Fundamentals	Major Elective	5	5

COURSE DESCRIPTION

Big Data Fundamentals consists of Big Data: Concepts and Terminology, Big data Adoption and Planning, Enterprise Technologies and Big Data Business Intelligence and its Storage Technology.

COURSE OBJECTIVES

- To Understand the fundamental concepts of Big data
- To interpret Big data Adoption and Planning and Big data Storage Concept
- To Understand Big data and Processing Concepts and Big Data Analysis Techniques

SYLLABUS

UNIT I : INTRODUCTION (15 Hrs)

Understanding Big Data: Concepts and Terminology - Big Data Characteristics - Different types of data.Business Motivations and Drivers for Big data Adoption: Marketplace Dynamics - Business Architecture - Business Process Management - Information and Communications Technology - Internet of Everything - Case Study Example.

UNIT II : ADOPTION AND PLANNING (15 Hrs)

Big data Adoption and Planning Considerations: Organization Prerequisites - Data Procurement – Privacy – Security – Provenance - Limited Realtime Support - Distinct Performance Challenges - Distinct Governance Requirements - Distinct Methodology – Clouds - Big Data Analytics Lifecycle - Case Study Example.

UNIT III : BIG DATA BUSINESS INTELLIGENCE (15 Hrs)

Enterprise Technologies and Big Data Business Intelligence: Online Transaction Processing(OLTP) - Online Analytical Processing(OLAP) - Extract Transform Load(ETL) - Data Warehouses - Data Marts- Traditional BI- Big Data BI- Case Study Example. Big Data Storage Concepts: Clusters - File Systems and Distributed File Systems - NoSQL – Sharding – Replication - Sharding and Replication - CAP Theorem – ACID – BASE - Case Study Example.

UNIT IV : BIG DATA PROCESSING CONCEPTS (15 Hrs)

Big Data Processing Concepts: Parallel Data Processing - Distributed Data

Processing – Hadoop - Processing Workloads – Cluster - Processing in Batch Mode - Processing in Realtime Mode - Case Study Example.

UNIT V: STORAGE TECHNOLOGY (15 Hrs)

Big Data Storage Technology: On-Disk Storage Devices – NoSQL Databases - In-Memory Storage Devices -Case Study Example. Big Data Analysis Techniques: Quantitative Analysis - Qualitative Analysis - Data Mining - Statistical Analysis - Machine Learning - Semantic Analysis - Visual Analysis - Case Study Example.

SELF STUDY

UNIT I : Information and Communications Technology - Internet of Everything - Case Study Example.

UNIT III :- Data Warehouses - Data Marts- Traditional BI- Big Data BI- Case Study Example.

TEXT BOOK

Big Data Fundamentals Concepts, Driver & Techniques, Thomas Erl,WajidKhattak and Paul Buhler, 3rd Edition, Pearson publication, 2018. Chapters : 1-8

REFERENCE BOOKS

1. ***Big Data Strategies*** , Pam Baker ,1st edition , Cengage Learning India Private Limited, 2016.
2. ***Big Data,*** Dr. Anil Maheshwari, 1stedition , Published by McGraw Hill Education (India) Private Limited, 2017.
3. ***Big Data and Analytics***, Seema Acharya andSubhashiniChellappan, 2nd edition, Wiley India Private Limited, 2017.

Digital Open Educational Resources (DOER)

1. https://www.tutorialspoint.com/big_data_analytics/index.htm
2. https://www.guru99.com/bigdata-tutorials.html
3. https://www.youtube.com/watch?v=KcecJfxbd-4

COURSE CONTENTS & TEACHING/LEARNING SCHEDULE

Module No.	Topic	No. of Lectures	Content Delivery Method	Teaching Aids
UNIT I : INTRODUCTION			**(15 Hrs)**	
1.1	**INTRODUCTION** **(15 Hrs)** Understanding Big Data: Concepts and Terminology - Big Data Characteristics - Different types of data.	4	Chalk & Talk	Black Board
1.2	Business Motivations and Drivers for Big data Adoption: Marketplace Dynamics - Business Architecture -.	4	Lecture	Smart Board
1.3	Business Process Management - Information and Communications Technology - Internet of Everything -	4	Lecture	Smart Board
1.4	Case Study Example	3	Discussion	Google class room
UNIT II: ADOPTION AND PLANNING (15 Hrs)				
2.1	Big data Adoption and Planning Considerations: Organization Prerequisites - Data Procurement – Privacy –	4	Chalk & Talk	Black Board
2.2	Security – Provenance - Limited Realtime Support - Distinct Performance Challenges -	4	Chalk & Talk	Black Board
2.3	Distinct Governance Requirements - Distinct Methodology – Clouds -	4	Discussion	Google classroom
2.4	Big Data Analytics Lifecycle - Case Study Example.	3		
UNIT III : BIG DATA BUSINESS INTELLIGENCE (15 Hrs)				
3.1	Enterprise Technologies and Big Data Business Intelligence: Online Transaction Processing(OLTP) - Online Analytical Processing(OLAP) -	4	Chalk & Talk	Black Board
3.2	Extract Transform Load(ETL) - Data Warehouses - Data Marts- Traditional BI- Big Data BI- Case Study Example.	4	Chalk & Talk	Black Board

3.3	Big Data Storage Concepts: Clusters - File Systems and Distributed File Systems - NoSQL – Sharding – Replication - Sharding and Replication - CAP Theorem – ACID – BASE -	4	Discussion	Google classroom
3.4	Case Study Example.	3	Discussion	Google classroom
UNIT IV: BIG DATA PROCESSING CONCEPTS				**(15Hrs)**
4.1	Big Data Processing Concepts: Parallel Data Processing - Distributed Data Processing –	4	Lecture	PPT & Smart Board
4.2	Hadoop -	4	Chalk & Talk	Black Board
4.3	Processing Workloads – Cluster - Processing in Batch Mode - Processing in Realtime Mode -	4	Lecture	PPT & Smart Board
4.4	Case Study Example.	3	Discussion	Black Board
UNIT V: UNIT V: STORAGE TECHNOLOGY				**(15 Hrs)**
5.1	Big Data Storage Technology: On-Disk Storage Devices – NoSQL Databases - In-Memory Storage Devices -Case Study Example.	4	Chalk & Talk	Black Board
5.2	Big Data Analysis Techniques: Quantitative Analysis - Qualitative Analysis -	4	Chalk & Talk	Black Board
5.3	Data Mining - Statistical Analysis - Machine Learning - Semantic Analysis - Visual Analysis -	4	Chalk & Talk	Black Board
5.4	Case Study Example.	3	Discussion	PPT & Smart Board

EVALUATION PATTERN

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

CIA	
Scholastic	35
Non Scholastic	5
	40

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

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

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

COURSE OUTCOMES (CO)

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

No.	Course Outcome	Knowledge Level (According to Bloom's Taxonomy)	PSOs ADDRESSED	POs ADDRESSED
CO 1	Explain the fundamental concepts of Big data	K1	PSO1	PO1
CO 2	Describe Big data Adoption and Planning	K2	PSO2	PO2
CO 3	Explain Big data Storage Concept	K2	PSO3	PO3
CO 4	Utilize Big data and Processing Concepts	K3	PSO4& PSO5	PO4
CO 5	Demonstrate Big Data Analysis Techniques.	K4	PSO6	PO4

Mapping of COs with PSOs

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

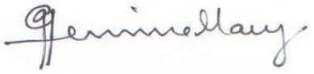
Mapping of COs with POs

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

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

COURSE DESIGNER:
Dr. T.Vasantha

Forwarded By



(Dr.G.Germine Mary)
HOD'S Signature& Name

III B.Sc. Computer Science

20 %
REDUCED
(NEW)

SEMESTER –VI

For those who joined in 2019 onwards

PROGRAMME CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS/ WEEK	CREDITS
UACS	19B6ME9	Big Data Fundamentals	Major Elective	5	5

COURSE DESCRIPTION

Big Data Fundamentals consists of Big Data: Concepts and Terminology, Big data Adoption and Planning, Enterprise Technologies and Big Data Business Intelligence and its Storage Technology.

COURSE OBJECTIVES

- To Understand the fundamental concepts of Big data
- To interpret Big data Adoption and Planning and Big data Storage Concept
- To Understand Big data and Processing Concepts and Big Data Analysis Techniques

SYLLABUS

UNIT I : INTRODUCTION (15 Hrs)

Understanding Big Data: Concepts and Terminology - Big Data Characteristics - Different types of data.Business Motivations and Drivers for Big data Adoption: Marketplace Dynamics - Business Architecture - Business Process Management - Information and Communications Technology - Internet of Everything - Case Study Example.

UNIT II : DRIVERS FOR BIG DATA (15 Hrs)

Business motivations and drivers for big data adoption : Marketplace dynamics – Business architecture – Business process management – ICT: Data analytics and data science – Digitization – affordable technology and commodity hardware – social media – hyper connected communities and devices – cloud computing – Internet of everything.

UNIT III : BIG DATA BUSINESS INTELLIGENCE (15 Hrs)

Enterprise Technologies and Big Data Business Intelligence: Online Transaction Processing(OLTP) - Online Analytical Processing(OLAP) - Extract Transform

Load(ETL) - Data Warehouses - Data Marts- Traditional BI- Big Data BI- Case Study Example. Big Data Storage Concepts: Clusters - File Systems and Distributed File Systems - NoSQL – Sharding – Replication - Sharding and Replication - CAP Theorem – ACID – BASE - Case Study Example.

UNIT IV : BIG DATA PROCESSING CONCEPTS (15 Hrs)

Big Data Processing Concepts: Parallel Data Processing - Distributed Data Processing – Hadoop - Processing Workloads – Cluster - Processing in Batch Mode - Processing in Realtime Mode - Case Study Example.

UNIT V: STORAGE TECHNOLOGY (15 Hrs)

Big Data Storage Technology: On-Disk Storage Devices – NoSQL Databases - In-Memory Storage Devices -Case Study Example. Big Data Analysis Techniques: Quantitative Analysis - Qualitative Analysis - Data Mining - Statistical Analysis - Machine Learning - Semantic Analysis - Visual Analysis - Case Study Example.

SELF STUDY

UNIT I : Information and Communications Technology - Internet of Everything - Case Study Example.

UNIT III :- Data Warehouses - Data Marts- Traditional BI- Big Data BI- Case Study Example.

TEXT BOOK

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3. ***Big Data and Analytics***, Seema Acharya andSubhashiniChellappan, 2nd edition, Wiley India Private Limited, 2017.

Digital Open Educational Resources (DOER)

1. https://www.tutorialspoint.com/big_data_analytics/index.htm
2. https://www.guru99.com/bigdata-tutorials.html
3. https://www.youtube.com/watch?v=KcecJfxbd-4

COURSE CONTENTS & TEACHING/LEARNING SCHEDULE

Module No.	Topic	No. of Lectures	Content Delivery Method	Teaching Aids
UNIT I : INTRODUCTION				**(15 Hrs)**
1.1	**INTRODUCTION** Understanding Big Data: Concepts and Terminology - Big Data Characteristics - Different types of data.	4	Chalk & Talk	Black Board
1.2	Business Motivations and Drivers for Big data Adoption: Marketplace Dynamics - Business Architecture -.	4	Lecture	Smart Board
1.3	Business Process Management - Information and Communications Technology - Internet of Everything -	4	Lecture	Smart Board
1.4	Case Study Example	3	Discussion	Google class room
UNIT II: DRIVERS FOR BIG DATA				**(15 Hrs)**
2.1	Business motivations and drivers for big data adoption : Marketplace dynamics – Business architecture	4	Chalk & Talk	Black Board
2.2	– Business process management – ICT: Data analytics and data science	4	Chalk & Talk	Black Board
2.3	Digitization – affordable technology and commodity hardware – social media – hyper connected communities and devices	4	Discussion	Google classroom
2.4	cloud computing – Internet of everything.	3		

UNIT III : BIG DATA BUSINESS INTELLIGENCE				**(15 Hrs)**
3.1	Enterprise Technologies and Big Data Business Intelligence: Online Transaction Processing(OLTP) - Online Analytical Processing(OLAP) -	4	Chalk & Talk	Black Board
3.2	Extract Transform Load(ETL) - Data Warehouses - Data Marts- Traditional BI- Big Data BI- Case Study Example.	4	Chalk & Talk	Black Board
3.3	Big Data Storage Concepts: Clusters - File Systems and Distributed File Systems - NoSQL– Sharding – Replication - Sharding and Replication - CAP Theorem – ACID – BASE -	4	Discussion	Google classroom
3.4	Case Study Example.	3	Discussion	Google classroom
UNIT IV: BIG DATA PROCESSING CONCEPTS				**(15Hrs)**
4.1	Big Data Processing Concepts: Parallel Data Processing - Distributed Data Processing –	4	Lecture	PPT & Smart Board
4.2	Hadoop -	4	Chalk & Talk	Black Board
4.3	Processing Workloads – Cluster - Processing in Batch Mode - Processing in Realtime Mode -	4	Lecture	PPT & Smart Board
4.4	Case Study Example.	3	Discussion	Black Board
UNIT V: UNIT V: STORAGE TECHNOLOGY (15 Hrs)				
5.1	Big Data Storage Technology: On-Disk Storage Devices – NoSQL Databases - In-Memory Storage Devices -Case Study Example.	4	Chalk & Talk	Black Board
5.2	Big Data Analysis Techniques: Quantitative Analysis - Qualitative Analysis -	4	Chalk & Talk	Black Board

5.3	Data Mining - Statistical Analysis - Machine Learning - Semantic Analysis - Visual Analysis -	4	Chalk & Talk	Black Board
5.4	Case Study Example.	3	Discussion	PPT & Smart Board

EVALUATION PATTERN

Levels	C1	C2	C3	C4	C5	Total Scholastic Marks	Non Scholastic Marks C6	CIA Total	% of Assessment
	T1 10 Mks.	T2 10 Mks.	Quiz 5 Mks.	Assignment 5 Mks	OBT/ PPT 5 Mks	35 Mks.	5 Mks.	40 Mks.	
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 (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 the fundamental concepts of Big data	K1	PSO1	PO1
CO 2	Describe business motivations and drivers for big data	K2	PSO2	PO2
CO 3	Explain Big data Storage Concept	K2	PSO3	PO3
CO 4	Utilize Big data and Processing Concepts	K3	PSO4& PSO5	PO4
CO 5	Demonstrate Big Data Analysis Techniques.	K4	PSO6	PO4

Mapping of COs with PSOs

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

Mapping of COs with POs

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

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

COURSE DESIGNER:
Dr. T.Vasantha

Forwarded By

(Dr.G.Germine Mary)
HOD'S Signature& Name

II B.Sc. Computer Science

OLD
SYLLABUS

SEMESTER –IV

For those who joined in 2019 onwards

PROGRAMME CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS/ WEEK	CREDITS
UACS	19B4SB2	Internet Programming : Paper II Web Designing using HTML and WordPress -	Skill Based Elective	2	2

COURSE DESCRIPTION

This course aims to impart skills to design and develop web pages using HTML and to design website using open source package.

COURSE OBJECTIVES

- To prepare the students to design their own web pages.
- To use and to customize the templates as per the requirement.
- To enable the students to develop dynamic web pages and to upload the documents.

UNITS

UNIT I: ESSENTIAL HTML (6 Hrs)

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

UNIT II: WORKING WITH TEXT (6 Hrs)

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

UNIT III: PRESENTING AND ARRANGING TEXT (6 Hrs)

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

<SPACER> - <MARQUEE> - <DIV> - <SPAN> - Formatting text with tables–- <Layer> - <NOLAYER> - <ILAYER> Positioning text with <DIV> - <Ruby>and <RT> Creating Ruby (Captioned) Text.

UNIT IV: CREATING LISTAND TABLES (6 Hrs)

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

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

UNIT V: WORKING WITH FRAMES (6 Hrs)

To frame or Not to frame – Named Frames- <FRAMESET> - <FRAME> - Creating vertical Frames- Creating Horizontal Frames- Creating both Horizontal and vertical Frames – Using Named frames as Hyperlink Targets – Using predefined Target Names – Handling Browsers That don't handle frames- Opening New Browser windows – Creating borderless frames - Creating navigation Bars – Enabling and Disabling Scrolling – Stopping Frames from Being resized – Setting Frame border Thickness – Setting Frame Color - <IFRAME>- Creating Borderless inline Frames.

UNIT VI : (DYNAMISM) (FOR CIA ONLY

Working with Wordpress

Introduction to Content management System (CMS) – Themes – Customizing themes – Plugins – Designing a website.

TEXT BOOK

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

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

REFERENCE BOOKS

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

COURSE CONTENTS & TEACHING/LEARNING SCHEDULE

Module No.	Topic	No. of Lectures	Content Delivery Method	Teaching Aids
Unit -1 ESSENTIAL HTML				
1.1	The history of HTML – HTML – Browser Wars – Creating a Web Page – Installing a Web Page – Viewing a Web Page – Checking Your Web Page	2	Chalk & Talk	Black Board
1.2	.<!DOCTYPE> -<HTML> – Creating The structures of a Web page's: Head and Body – Setting Web Page Colors	2	Chalk & Talk	Black Board
1.3	– Adding Text to a Web Page - basic Text formatting - <!..> Comments and server-Side includes - </Body>- </HTML>	2	Demonstration	LCD
UNIT II: WORKING WITH TEXT				
2.1	Formatting with HTML tags – Physical HTML styles – Logical HTML styles – Setting Fonts – Headings - some remove tags - Displaying Plain text - <H1> Through <H6>- Creating Web Page Headings - <B> -<I> - <TT> - <U> - <S> and <Strike> - <BIG> - -<SMALL> - <SUB> - <SUP> -<EM> - <Strong> - <CODE> -	3	Demonstration	LCD
2.2	<SAMP> -<KBD> - <VAR> - <DFN> - <CITE> - <ABBR> - <Acronym> - <FONT> – setting font point size directly- <BASEFONT> - <Q> - <Blink> - <INS> - <DEL> - <Address>- <BDO> – Displaying Special Characters: Character Entities.	3	Demonstration	LCD
UNIT III: PRESENTING AND ARRANGING TEXT				
3.1	Arranging text - Using <DIV> and <SPAN> - Using Layers – More Formatting Power – preformatting Text - Avoiding Plain text Wrapping - -<NOBR> - - <WBR> - <P> - <HR> - <CENTER><BlockQuote> - <PRE> - <MULTICOL> - <SPACER> - <MARQUEE> - <DIV> - <SPAN> - Formatting text with tables–-	3	PPT	LCD
3.2	<Layer> - <NOLAYER> - <ILAYER> Positioning text with <DIV> -	3	Demonstration	LCD

	<Ruby>and <RT> Creating Ruby (Captioned) Text.			

UNIT IV: CREATING LISTAND TABLES				
4.1	Creating List - <LI> - <UL> - <OL>– Creating Customized Unordered lists - Creating Customized ordered lists - <DL>, <DT> and DD> - Creating Definition Lists – Nesting Lists - <DIR> and <Menu>- Deprecated Lists. The Parts of a table – Creating a Table – Adding Border – Padding Your Cells – Widening the cell spacing – Aligning your data Horizontally – Aligning your data vertically – Spanning Columns – Spanning Rows- Setting Colors.	3	Demonstration	LCD
4.2	<TABLE> - <TR>- <TH> - <TD> - <CAPTION> - setting table Border Widths – Setting Cell padding – Setting cell spacing – Setting table column and widths – Setting table Colors – Aligning table in Web Pages – Aligning Cell text – Using images in tables – Nesting tables - Spanning multiple columns - Spanning multiple rows - <THEAD>, <TBODY>, and <TFOOT> - Grouping and Formatting Rows – Formatting text with tables.	3	Demonstration	LCD
UNIT V: WORKING WITH FRAMES				
5.1	To frame or Not to frame – Named Frames- <FRAMESET> - <FRAME> - Creating vertical Frames- Creating Horizontal Frames- Creating both Horizontal and vertical Frames – Using Named frames as Hyperlink Targets – Using predefined Target Names – Handling Browsers That don't handle frames- Opening New Browser windows	3	Demonstration	LCD
5.2	Creating borderless frames - Creating navigation Bars – Enabling and Disabling Scrolling – Stopping Frames from Being resized – Setting Frame border Thickness – Setting Frame Color - <IFRAME>- Creating Borderless inline Frames	3	Demonstration	LCD

EVALUATION PATTERN

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

CIA	
Scholastic	35
Non Scholastic	5
	40

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

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

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

COURSE OUTCOMES (CO)

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

No.	Course Outcome	Knowledge Level (According to Bloom's Taxonomy)	PSOs ADDRESSED	POs ADDRESSED
CO 1	Create simple web page using physical tags	K1&K2	PSO1& PSO3	PO1
CO 2	Present the information in standard form in a web page using structure tags supported by the browsers	K2	PSO4	PO2
CO 3	Design the layout for a web page using browser support tags	K2&K3	PSO2	PO2
CO 4	Develop a web site with tables and lists	K3	PSO6	PO4
CO 5	Design a website using a theme available in Word press.	K2&K3	PSO5	PO3&PO 4

Mapping COs Consistency with PSOs

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

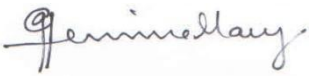
Note: ♦ Strongly Correlated – **3** ♦ ModeratelyCorrelated – **2**
♦ WeaklyCorrelated -**1**

Mapping of COs with POs

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

COURSE DESIGNER:
Dr.K.RosemaryEuphrasia

Forwarded By



(Dr.G.Germine Mary)
HOD'S Signature& Name

II B.Sc. Computer Science

20 %

REPLACED

(NEW)

SEMESTER –III

For those who joined in 2022 onwards

PROGRAMME CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS/ WEEK	CREDITS
UACS	22B3SB1	Internet Programming : Paper II Web Designing using HTML and CSS	Skill Based Elective	2	2

COURSE DESCRIPTION

This course aims to impart skills to design and develop web pages using HTML and to design website using open source package.

COURSE OBJECTIVES

- **To prepare the students to design their own web pages.**
- To use and to customize the templates as per the requirement.
- To enable the students to enhance the web page with CSS

UNITS

UNIT I: ESSENTIAL HTML (6 Hrs)

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

UNIT II: WORKING WITH TEXT (6 Hrs)

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

UNIT III: PRESENTING AND ARRANGING TEXT (6 Hrs)

Arranging text - Using <DIV> and <SPAN> - Using Layers – More Formatting

Power – pre formatting Text - Avoiding Plain text Wrapping -
 -<NOBR> - - <WBR> - <P> - <HR> - <CENTER><Block Quote> - <PRE> - <MULTICOL> - <SPACER> - <MARQUEE> - <DIV> - <SPAN> - Formatting text with tables–- <Layer> - <NOLAYER> - <ILAYER> Positioning text with <DIV> - <Ruby>and <RT> Creating Ruby (Captioned) Text.

UNIT IV: CREATING LISTAND TABLES (6 Hrs)

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

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

UNIT V: CASCADING STYLE SHEET (6Hrs)

What are style sheets?-External style sheets - Internal style sheets - Inline styles- creating style classes- Background properties- Position and block properties-Font properties-List properties-Text properties- Table properties.

TEXT BOOK

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

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

REFERENCE BOOKS

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

Module No.	Topic	No. of Lectures	Content Delivery Method	Teaching Aids
Unit -1	**ESSENTIAL HTML**			
1.1	The history of HTML – HTML – Browser Wars – Creating a Web Page – Installing a Web Page – Viewing a Web Page – Checking	2	Chalk & Talk	Black Board

	Your Web Page			
1.2	.<!DOCTYPE> -<HTML> – Creating The structures of a Web page's: Head and Body – Setting Web Page Colors	2	Chalk & Talk	Black Board
1.3	– Adding Text to a Web Page - basic Text formatting - <!..> Comments and server-Side includes - </Body>- </HTML>	2	Demonstration	LCD
UNIT II: WORKING WITH TEXT				
2.1	Formatting with HTML tags – Physical HTML styles – Logical HTML styles – Setting Fonts – Headings - some remove tags - Displaying Plain text - <H1> Through <H6>- Creating Web Page Headings - <B> -<I> - <TT> - <U> - <S> and <Strike> - <BIG> - -<SMALL> - <SUB> - <SUP> -<EM> - <Strong> - <CODE> -	3	Demonstration	LCD
2.2	<SAMP> -<KBD> - <VAR> - <DFN> - <CITE> - <ABBR> - <Acronym> - <FONT> – setting font point size directly- <BASEFONT> - <Q> - <Blink> - <INS> - <DEL> - <Address>- <BDO> – Displaying Special Characters: Character Entities.	3	Demonstration	LCD
UNIT III: PRESENTING AND ARRANGING TEXT				
3.1	Arranging text - Using <DIV> and <SPAN> - Using Layers – More Formatting Power – preformatting Text - Avoiding Plain text Wrapping - -<NOBR> - - <WBR> - <P> - <HR> - <CENTER><BlockQuote> - <PRE> - <MULTICOL> - <SPACER> - <MARQUEE> - <DIV> - <SPAN> - Formatting text with tables–-	3	PPT	LCD
3.2	<Layer> - <NOLAYER> -	3	Demonstrati	LCD

	<ILAYER>Positioning text with <DIV> - <Ruby>and <RT> Creating Ruby (Captioned) Text.		on	
UNIT IV: CREATING LISTAND TABLES				
4.1	Creating List - <LI> - <UL> - <OL>– Creating Customized Unordered lists - Creating Customized ordered lists - <DL>, <DT> and DD> - Creating Definition Lists – Nesting Lists - <DIR> and <Menu>- Deprecated Lists. The Parts of a table – Creating a Table – Adding Border – Padding Your Cells – Widening the cell spacing – Aligning your data Horizontally – Aligning your data vertically – Spanning Columns – Spanning Rows- Setting Colors.	3	Demonstrati on	LCD
4.2	<TABLE> - <TR>- <TH> - <TD> - <CAPTION> - setting table Border Widths – Setting Cell padding – Setting cell spacing – Setting table column and widths – Setting table Colors – Aligning table in Web Pages – Aligning Cell text – Using images in tables – Nesting tables - Spanning multiple columns - Spanning multiple rows - <THEAD>, <TBODY>, and <TFOOT> - Grouping and Formatting Rows – Formatting text with tables.	3	Demonstrati on	LCD
UNIT V: Cascading Style Sheet				
5.1	What are style sheets?-External style sheets - Internal style sheets - Inline styles- creating style classes- Background properties-	3	Lecture	PPT &Smart Board
5.2	Position and block properties-Font properties-List properties-Text properties- Table properties.	3	Chalk & Talk Lecture	Black Board

EVALUATION PATTERN

Levels	C1	C2	C3	C4	C5	Total Scholastic Marks	Non Scholastic Marks C6	CIA Total	% of Assessment
	Quiz (Best one out of 2) 5 Mks.	PPT/ Open Book Test (Best one out of 2) 5 Mks	Assignment 5 Mks.	Test1 10Mks	Test2 10 Mks	35 Mks.	5 Mks.	40Mks.	
K1	5	-	-	1½	1	7.5	-	7.5	18.75 %
K2	-	5	2	2	2½	11.5	-	11.5	28.75 %
K3	-	-	1½	3	3½	8	-	8	20 %
K4	-	-	1½	3½	3	8	-	8	20 %
Non Scholastic	-	-	-	-			5	5	12.5 %
Total	5	5	5	10	10	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 (CO)

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

No.	Course Outcome	Knowledge Level (According to Bloom's Taxonomy)	PSOs ADDRESSED	POs ADDRESSED
CO 1	Create simple web page using physical tags	K1&K2	PSO1 PSO3	PO1
CO 2	Present the information in standard form in a web page using structure tags supported by the browsers	K2	PSO4	PO2
CO 3	Design the layout for a web page using browser support tags	K2&K3	PSO2	PO2
CO 4	Develop a web site with tables and lists	K3	PSO6	PO4
CO 5	Enhance the webpage style through style sheets.	K2&K3	PSO5	PO3&PO4

Mapping COs Consistency with PSOs

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

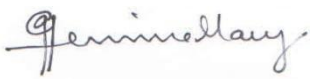
Note: ♦ Strongly Correlated – **3**♦ Moderately Correlated – **2**♦ Weakly orrelated -**1**

Mapping of C0s with Pos

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

COURSE DESIGNER:
Dr.K.Rosemary Euphrasia

Forwarded By



(Dr.G.Germine Mary)

HOD'S Signature& Name

III B.Sc. Computer Science

OLD
SYLLABUS

SEMESTER –V

For those who joined in 2019 onwards

PROGRAMME CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS/ WEEK	CREDITS
UACS	19B5SB3	Internet Programming - Paper III Client Side Programming using Java Script & CSS	Skill Based Elective	2	2

COURSE DESCRIPTION

This course aims to impart skills to design web sites and to develop web applications through scripting languages.

COURSE OBJECTIVES

- To prepare the students to design and upload their own web pages.
- To use CSS to control the style and layout of multiple Web pages all at once.
- To Enable the students to examine the flexibility of JavaScript, create scripts, dialog boxes and design web pages using javascript.

SYLLABUS

UNIT I: CASCADING STYLE SHEET (6 Hrs)

What are style sheets?-External style sheets - Internal style sheets - Inline styles- creating style classes- Background properties- Position and block properties-Font properties-List properties-Text properties- Table properties.

UNIT II: HTML FORMS AND CONTROLS (6 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 III: JAVA SCRIPT (6 Hrs)

Introduction to Javascript – Adding JavaScript to XHTML documents - the<script> element – using the <script> element- event handlers – Javascript core features – basic definitions – Language characteristics – variables- basic data types – composite types – Flow control statements.

UNIT IV: USING JAVA SCRIPT (6 Hrs)

Introduction to Window – Dialogs – Opening and closing generic windows – controlling windows – Window events – Form basics – form fields – Form validation – form usability and javascript.

UNIT V: JAVA SCRIPT OBJECT MODELS (6 Hrs)

Object Model Overview – the initial JavaScript Object model – The Document Object – Accessing Document Elements by Position - Accessing Document Elements by Name – Event handlers – The DOM and HTML elements – The DOM and CSS.

SELF STUDY:

Unit-I: Properties and the values of HTML elements
Unit-III: Basic programming concepts of Javascript
Unit-V: Methods of Document object

TEXT BOOKS

1. ***HTML Black Book, Steven Holzner*** – Dreamtech Press, 2000 Chapters : 9, 12
2. ***JavaScript: The complete reference , Thomas Powell & Fritz Schneider*** ,2nd edition, Tata McGraw Hill Education Private Limited, New Delhi, 2014 Chapters : 1,2,,9,10,12,14

REFERENCES:

1. HTML Complete, BPB Publications, 2nd Edition, New Delhi, 2003.
2. Mastering HTML, CSS &Javascript web Publishing, Laura Lemay, Rafe Colburn & Jennifer Kyrnin, BPB publications, 2016
3. HTML & CSS the complete reference, Thomas A Powell, 5th edition, McGrawHill, New Delhi, 2017

COURSE CONTENTS &LECTURE SCHEDULE

Module No.	Topic	No. of Lectures	Content Delivery Method	Teaching Aids
UNIT I - **CASCADING STYLE SHEET** (6 Hrs)				
1.1	What are style sheets?-External style sheets - Internal style sheets - Inline styles- creating style classes- Background properties-	3	Lecture	PPT &Smart Board
1.2	Position and block properties-Font properties-List properties-Text properties- Table properties.	3	Chalk & Talk Lecture	Black Board
UNIT II- **HTML FORMS AND CONTROLS** (6 Hrs)				
2.1	Creating HTML forms – Buttons – Checkboxes – File input - For a From – Hidden data -	2	Lecture	PPT &Smart Board
2.2	Image Submit Buttons – Password Controls – Radio Buttons – Reset Buttons – Customizable Button – Select Control	2	Chalk & Talk Lecture	Black Board
2.3	– Grouping and Labeling – An Index – Processing Secure Transactions - Events	2	Chalk & Talk Lecture	Black Board
UNIT III: JAVA SCRIPT (6 hours)				
3.1	Introduction to Javascript – Adding JavaScript to XHTML documents - the<script> element – using the <script> element- event handlers – Javascript core features – basic definitions –	3	Lecture	PPT &Smart Board
3.2	Language characteristics – variables- basic data types – composite types – Flow control statements.	3	Lecture	PPT &Smart Board
UNIT IV: USING JAVA SCRIPT				**(6 Hrs)**
4.1	Introduction to Window – Dialogs – Opening and closing generic windows – controlling windows –	3	Lecture	PPT &Smart Board
4.2	Window events – Form basics – form fields – Form validation – form usability and javascript.	3	Chalk & Talk Lecture	Black Board

UNIT V: JAVA SCRIPT OBJECT MODELS (6 Hrs)				
5.1	Object Model Overview – the initial JavaScript Object model –	2	Lecture	PPT &Smart Board
5.2	The Document Object – Accessing Document Elements by Position - Accessing Document Elements by Name – Event handlers –	2	Lecture	PPT &Smart Board
	The DOM and HTML elements – The DOM and CSS.	2	Flipped Learning	Online/ E-Content/ Text Books /Materials

EVALUATION PATTERN

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

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

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

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

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

COURSE OUTCOMES (CO)

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

NO.	COURSE OUTCOMES	KNOWLEDGE LEVEL (ACCORDING TO REVISED BLOOM'S TAXONOMY)	PSOs ADDRESSED	POs ADDRESSED
CO 1	Design a website with boosted styles using style sheets	K1	PSO1& PSO2	PO1
CO 2	Design uniform layout for all pages of a website through tags and style sheets	K1, K2, K3	PSO2	PO2
CO 3	Create a webpage with menu bar to navigate through different pages of a website.	K1 & K3	PSO4	PO1
CO 4	Create a dynamic webpage using java script	K2 & K3	PSO3	PO3
CO 5	Create a webpage with a facility to collect and validate data	K2 & K4	PSO6	PO4

Mapping COs Consistency with PSOs

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

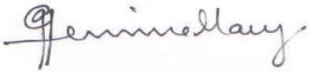
Note: ♦ Strongly Correlated – **3** ♦ ModeratelyCorrelated – **2**
♦ WeaklyCorrelated -**1**

Mapping of COs with POs

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

COURSE DESIGNER:
Dr. K.RosemaryEuphrasia

Forwarded By



(Dr.G.Germine Mary)

HOD'S Signature& Name

20 %
REPLACED

(NEW)

IIIB.Sc. Computer Science
SEMESTER –IV
For those who joined in 2022 onwards

PROGRAMME CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS/WEEK	CREDITS
UACS	22B4SB2	Internet Programming - Paper III Client Side Programming using Java Script	Skill Based Elective	2	2

COURSE DESCRIPTION

This course aims to impart skills to design web sites and to develop web applications through scripting languages.

COURSE OBJECTIVES

- **To prepare the students to design interactive web pages**
- To Enable the students to examine the flexibility of JavaScript, create scripts, dialog boxes and design web pages using javascript.
- To create dynamic web pages using Javascript

SYLLABUS

UNIT I: BASICS OF JAVA SCRIPT (6Hrs)

Introduction to JavaScript – Adding JavaScript to HTML documents - the<script> element – using the <script> element- JavaScript core features – basic definitions – Language characteristics – variables- basic data types – composite types – Flow control statements.

UNIT II: USING JAVA SCRIPT (6Hrs)

Introduction to Window – Dialogs – Opening and closing generic windows – controlling windows – Window events –Document object – Properties and methods of document object –Events - Event handlers

UNIT III: HTML FORM VALIDATION (6Hrs)

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 — Form validation.

UNIT IV: JAVA SCRIPT OBJECT MODELS (6Hrs)

Object Model Overview – the initial JavaScript Object model – The Document Object –The DOM and HTML elements – The DOM and CSS.

UNIT V: ACCESSING HTML ELEMENTS (6Hrs)

Accessing Document Elements by Position - Accessing Document Elements by Name – Accessing Document Elements by id - Accessing Document Elements by class - Accessing Document Elements by selector

SELF STUDY:

Unit-I: Basic programming concepts of JavaScript
Unit II: Events of JavaScript
Unit-III: Form Controls and their properties

TEXT BOOKS

1. ***HTML Black Book, Steven Holzner*** – Dreamtech Press, 2000 Chapters : 9, 12
2. ***JavaScript: The complete reference , Thomas Powell & Fritz Schneider*** ,2nd edition, Tata McGraw Hill Education Private Limited, New Delhi, 2014 Chapters : 1,2,,9,10,12,14

REFERENCES:

1. ***HTML Complete,*** BPB Publications, 2nd Edition, New Delhi, 2003.
2. ***Mastering HTML, CSS &Javascript web Publishing,*** Laura Lemay, Rafe Colburn & Jennifer Kyrnin, BPB publications, 2016
3. ***HTML & CSS the complete reference,*** Thomas A Powell, 5th edition, McGrawHill, New Delhi, 2017

COURSE CONTENTS & LECTURE SCHEDULE

Module No.	Topic	No. of Lectures	Content Delivery Method	Teaching Aids
UNIT I - BASICS OF JAVASCRIPT (6Hrs)				
1.1	Introduction to Javascript – Adding JavaScript to HTML documents - the<script> element – using the <script> element- event handlers – Javascript core features – basic definitions –	3	Lecture	PPT &Smart Board
1.2	Language characteristics – variables- basic data types – composite types – Flow control statements.	3	Lecture	PPT
UNIT II- USING JAVASCRIPT (6Hrs)				

2.1	Introduction to Window – Dialogs – Opening and closing generic windows – controlling windows –	3	Lecture	PPT &Smart Board
2.2	Window events –Document objects –Properties and methods of document object – events – event handler .	3	Chalk & Talk Lecture	Black Board
UNIT III: HTML FORM VALIDATION (6 Hrs)				
3.1	Form basics – form fields – form controls - properties	3	Chalk & Talk Lecture	Black Board
3.2	Form validation – form usability and javascript.	3	Lecture	LCD
UNIT IV: JAVA SCRIPT OBJECT MODEL (6 Hrs)				
4.1	Object Model Overview – the initial JavaScript Object model	3	Lecture	PPT &Smart Board
4.2	DOM– DOM and HTML elements – DOM and CSS	3	Lecture	PPT &Smart Board
UNIT V: ACCESSING HTML ELEMENTS (6 Hrs)				
5.1	Accessing Document Elements by Position - Accessing Document Elements by Name –	2	Lecture	PPT &Smart Board
5.2	Accessing Document Elements by selectorName –Accessing Document Elements by id –Accessing Document Elements by class	2	Demo	LCD

EVALUATION PATTERN

Levels	C1	C2	C3	C4	C5	Total Scholastic Marks	Non Scholastic Marks C6	CIA Total	% of Assessment
	Quiz (Best one out of 2) 5 Mks.	PPT/ Open Book Test (Best one out of 2) 5 Mks	Assignment 5 Mks.	Test1 10Mks	Test2 10 Mks	35 Mks.	5 Mks.	40Mks.	
K1	5	-	-	1½	1	7.5	-	7.5	18.75 %
K2	-	5	2	2	2½	11.5	-	11.5	28.75 %
K3	-	-	1½	3	3½	8	-	8	20 %
K4	-	-	1½	3½	3	8	-	8	20 %
Non Scholastic	-	-	-	-			5	5	12.5 %
Total	5	5	5	10	10	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

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	Design a dynamic web page using JavaScript	K1	PSO1& PSO2	PO1
CO 2	Design uniform layout for all pages using JavaScript	K1, K2, K3	PSO2	PO2
CO 3	Create a webpage with menu bar to navigate through different pages of a website.	K1 & K3	PSO4	PO1
CO 4	Create a dynamic webpage using java script	K2 & K3	PSO3	PO3
CO 5	Create a dynamic webpage using DOM	K2 & K4	PSO6	PO4

Mapping COs Consistency with PSOs

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

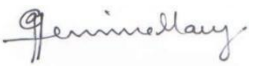
Note: ♦ Strongly Correlated – **3**♦ Moderately Correlated – **2**♦ Weakly Correlated -**1**

Mapping of COs with POs

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

COURSE DESIGNER:
Dr. K.Rosemary Euphrasia

Forwarded By



(Dr.G.Germine Mary)

HOD'S Signature& Name