MUTHAYAMMAL COLLEGE OF ARTS AND SCIENCE

(An Autonomous College)

Affiliated to Periyar University, Salem | Accredited by **NAAC** with '**A**' Grade

Recognized by **UGC** under Section 2(f) & 12 (B)

ESTD-1994

MUTHAYAMMAL COLLEGE OF ARTS AND SCIENCE (Autonomous)

A UNIT OF VANETRA GROUP

Learn. Lead

DEGREE OF BACHELOR OF SCIENCE

Learning Outcomes - Based Curriculum Framework

- Choice Based Credit System

Syllabus for B.Sc.,Information Technology

(Semester Pattern)

(For Candidates admitted from the academic year 2023-2024 and onwards)

MUTHAYAMMAL COLLEGE OF ARTS AND SCIENCE

Rasipuram-637 408

Regulation and Syllabus for B.Sc., Information Technology

(With effect from the Academic Year 2023-24)

Vision:

To redefine the scope of higher education by infusing into each of our pursuits, initiatives that will encourage intellectual, emotional, social and spiritual growth, thereby nurturing a generation of committed, Knowledgeable and socially responsible citizens.

Mission:

*To Ensure State of the world learning experience

*To Espouse value based Education

*To Empower rural education

*To Instill the sprite of entrepreneurship and enterprise

*To create a resource pool of socially responsible world citizens

QUALITY POLICY

To Seek – To Strive – To Achieve greater heights in Arts and Science, Engineering, Technological and Management Education without compromising on the Quality of Education.

DEPARTMENT OF INFORMATION TECHNOLOGY

Vision:

- To attain global recognition in Information Technology research and training to meet the growing needs of the industry and society.

Mission:

To impart quality education Imparting through a well-designed curriculum in turn with the challenging software needs of the industry.

- To provide state-of-art research facilities to generate knowledge and develop technologies in the thrust areas of computer science.
- To develop linkages with world class organizations to strengthen industry-academia relationships for mutual benefit.

PREAMBLE

The B. Sc. (Information Technology) course is systematically designed three year degree program under the faculty of Science and Technology. The objective of the course is to prepare students to undertake careers involving problem solving using computer science and technologies, or to pursue advanced studies and research in computer science. The syllabus which comprises of Information Technology subject along with that of the three allied subjects (Mathematics and Statistics) covers the foundational aspects of computing sciences and also develops the requisite professional skills and problem solving abilities using computing sciences.

Introduction: At the first year of under-graduation, the basic foundations of two important skills required for software development are laid. A course in problem solving and programming along with a course in database fundamentals forms the preliminary skill set for solving computational problems. The practical courses are designed to supplement the theoretical training in the year. Along with Information Technology, the two theoretical and one practical course each in Statistics, Mathematics and Electronics help in building a strong foundation. Career Advancement courses are introduced in both semesters to cover additional areas of Computer Science. At the second year of under-graduation, computational problem solving skills are further strengthened by a course in Data structures. Software engineering concepts that are required for project design are also introduced. Essential concepts of computer networking are also introduced in this year. The practical course included in both semesters complements the theory courses. At the third year of under-graduation, all the subjects are designed to fulfill core Information Technology requirements as well as meet the needs of the software industry. Theory courses are adequately supplemented by hands-on practical courses. Skill Enhancement courses enable the students to acquire additional value-added skills.

PROGRAMME LEARNING OUTCOME

NATURE AND EXTENT OF THE PROGRAMME

The undergraduate programs in Information Technology builds on science-based education at +2 level. The +2 senior secondary school education aims and achieves a sound grounding in understanding the basic scientific temper with introduction to process of computation by introducing some programming languages. This prepares a young mind to launch a rigorous investigation of exciting world of computer science. Framing and implementation of curricula and syllabi is envisaged to provide an understanding of the basic connection between theory and experiment and its importance in understanding the foundation of computing. This is very critical in developing a scientific temperament and to venture a career which a wide spectrum of applications as well as theoretical investigations. The undergraduate curriculum provides students with theoretical foundations and practical experience in both hardware and software aspects of computers. The curriculum in computer science is integrated with courses in the sciences and the humanities to offer an education that is broad, yet of enough depth and relevance to enhance student employment opportunities upon graduation. As a Bachelor's degree program, the curriculum is based on the criterion that graduates are expected to function successfully in a professional employment environment immediately upon graduation.

AIM OF THE PROGRAMME

The program aims to impart fundamental and hands on knowledge of Information Technology of Computing and modern science technologies to students. It will be useful for careers in research & development corporate sectors and higher studies in M.Sc. Computer Science. Furthermore, an emphasis on collaborative projects, teamwork, and effective communication skills aims to produce Information Technology professionals who can thrive in interdisciplinary environments and contribute meaningfully to the evolving field of computing. The program on Information Technology equips students with comprehensive skills on computer systems, hardware, databases, cloud computing, and networks both at the conceptual and application levels. The knowledge gained under this program will be relevant to pursue higher education and for job opportunities in various organizations.

GRADUATE ATTRIBUTES

The students graduating in Graduate Attributes (GAs) are qualities and skills that students shall acquire while doing their graduation in Muthayammal College of Arts and Science College. Graduate attributes include theoretical and practical knowledge, skills, attitudes, societal concerns and values that are expected to be acquired by a graduate through studies at Muthayammal College of Arts and Science College. The graduate attributes include capabilities that strengthen students' abilities for widening current knowledge base and skills, gaining new knowledge and skills, undertaking future studies, performing well in a chosen career and playing a constructive role as a responsible citizen in the society. Graduate attributes are fostered through meaningful learning experiences made available through the curriculum, the total college experiences and a process of critical and reflective thinking.

GA 1 Analytical Reasoning

GA 2 Critical Thinking

GA 3 Problem Solving Skills

GA 4 Communication Skills

GA 5 Leadership Quality

GA 6 Team work

GA 7 Lifelong Learning

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs):

PEO1: Graduates will be able to promote learning environment to meet the industry expectation

PEO2: Graduates will be incorporated the critical thinking with Good Communication and Leadership skills to become a self-employed

PEO3: Graduates will be uphold the human values and environmental sustenance for the betterment of the society.

PROGRAMME OUTCOMES (POs)

PO1:	Graduates will acquire dynamic skills through proper perception of the course Objectives that leads to scientific and analytical comprehension of the concepts.
PO2:	Graduates will focus on sustainable goals that might bring about spherical developments
PO3:	Graduates will infuse a spirit converging on bricking a team work, interpersonal and administrative skills to think critically and execute effectively
PO4:	Graduates will apply reasoning appropriately to scale the humps in learning and solute them to the core.
PO5:	Graduates will engage the skills obtained in independent and collaborative Learning as a perennial process.

PROGRAMME SPECIFIC OUTCOMES (PSOs)

PSO1:	Acquire the required knowledge in the Hardware and Software aspects of Information Technology field.
PSO2:	Understood the development methodologies of Software systems and the ability to analyze, design and develop computer applications for real life problems.
PSO3:	Knowledge and skills to collaborate and communicate with peers for performance enhancement in IT field.
PSO4:	Ability to understand and adapt with the dynamic technical environment for the growth of IT Industry.
PSO5:	Capacity to transfer the skills gained, to provide innovative and novel solutions by maintaining ethical norms for the betterment of society.

REGULATIONS (2023-2024)

1. DURATION OF THE PROGRAME

1.1. Three years (six semesters)

1.2. Each academic year shall be divided into two semesters. The odd semesters shall consist of the period from June to November of each year and the even semesters from December to May of each year.

1.3. There shall be not less than 90 working days for each semester.

2. ELIGIBILITY FOR ADMISSION

2.1. Candidate for admission to the first year of B.Sc. Degree Course in Information Technology shall be required to have passed the Higher Secondary pass with Mathematics as one of the Subject OR Higher Secondary Pass with Computer Science / Computer Applications / Information Technology / Computer Technology / Business Mathematics/ Statistics as one of the courses and have not studied Mathematics should undergo a bridge course on Mathematics for a minimum duration of 15 days.

3. CREDIT REQUIRMENTS AND ELIGIBILITY FOR AWARD OF DEGREE

3.1. A Candidate shall be eligible for the award of the Degree only if he/she has undergone the prescribed course of study in a College affiliated to the University for a period of not less than three academic years and passed the examinations of all the Six Semesters prescribed earning a minimum of 140 credits as per the distribution given in Regulation for Part I, II, III, IV & V and also fulfilled such other conditions as have been prescribed thereof.

4. COURSE OF STUDY, CREDITS AND SCHEME OF EXAMINATION

4.1. The Course Components and Credit Distribution shall consist of the following:

(Minimum Number of Credits to be obtained)

Part Wise Distribution	Study Components	Credit Distribution
PART I	Tamil or Other Languages	12
PART II	English	12
PART III	Core, Allied, Elective and Project Courses	91
PART IV	i. Basic Tamil/ Advanced Tamil/ NME	04
	ii. Soft Skill Courses / SBEC	10
	iii. Environmental Studies	02
	iv. Value Education	02
	v. Internship	02
	vi. Foundation Course	02
	vii. Professional Competency Skills	02
PARTV	Extension Activity	01
Total Credits		140

4.2 DETAILS OF COURSE OF STUDY OF PARTS I – V

4.2.1 PART I: Tamil and Other Languages Hindi or French at the option of candidates and according to the syllabus and text-books prescribed from time to time:

4.2.2 PART II: English: According to the syllabus and text-books prescribed from time to time

4.2.3 PART III: Core, Allied Project and Elective Courses: As prescribed by the concerned Board of Studies

4.2.4 PART IV:

i. Basic Tamil / Advanced Tamil/NME:

a. Students who have not studied Tamil up to XII STD and have taken any Language other than Tamil in Part I shall take Basic Tamil comprising of Two Courses (level will be at 6th Standard).
b. Students who have studied Tamil up to XII STD and have taken any Language other than Tamil in Part – I shall take Advanced Tamil comprising of Two Courses.
c. Students who have studied Tamil up to XII STD and also have taken Tamil in Part – I shall take Non-Major Elective comprising of Two Courses.
   i. Soft Skill Courses/SBEC
   ii. Environmental Studies
   iii. Value Education
   iv. Internship
   v. Foundation Course
   vi. Professional Competency Skills(Online)

4.2.5 PART V: Extension Activity:

Students shall be awarded a maximum of 1 Credit for Compulsory Extension Service. All the Students shall have to enroll for NSS /NCC/ NSO (Sports & Games) Retract / Youth Red Cross or any other Service Organizations in the College and shall have to put in compulsory minimum attendance of 40 hours which shall be duly certified by the Principal of the College before 31st March in a year. If a student lacks 40 hours attendance in the first year, he or she shall have to compensate the same during the subsequent years.

Those students who complete minimum attendance of 40 hours in one year will get ‘half-a- credit and those who complete the attendance of 80 or more hours in Two Years will get ‘one credit’. Literacy and Population Education and Field Work shall be compulsory components in the above extension service activities.

4.3. Inclusion of the Massive Open Online Courses (MOOCs)available on SWAYAM and NPTEL

4.3.1 Students can choose the MOOC Course Available on SWAYAM and NPTEL under Core, Elective or Soft skill category. He/ she will be awarded degree only after producing valid certificate of the MOOC course for credit Mobility

5. REQUIREMENTS FOR PROCEEDING TO SUBSEQUENT SEMESTER

5.1 Eligibility: Students shall be eligible to go to subsequent semester only if they earn sufficient attendance as prescribed by the Periyar University.

5.2. Attendance: All Students must earn 75% and above of attendance for appearing for the End Semester Examination.(Theory/Practical)

5.3. Condonation of shortage of attendance: If a Student fails to earn the minimum attendance (Percentage stipulated), the Principals shall condone the shortage of attendance up to a maximum limit of 10% (i.e. between 65% and above and less than 75%) after collecting the prescribed fee for Theory/Practical examination separately, towards the condonation of shortage of attendance. Such fees collected and should be remitted to the University.

5.4. Non-eligibility for condonation of shortage of attendance: Students who have secured less than 65% but more than 50% of attendance are NOT ELIGIBLE for condonation of shortage of attendance and such Students will not be permitted to appear for the regular examination, but will be allowed to proceed to the next year/next semester of the program and they may be permitted to take next University examination by paying the prescribed condonation fee

5.5. Detained students for want of attendance: Students who have earned less than 50% of attendance shall not be permitted to proceed to the next semester and to complete the Program of study. Such Students shall have to repeat the semester, which they have missed by rejoining after completion of final semester of the course, by paying the fee for the break of study as prescribed by the College from time to time.

5.6. Condonation of shortage of attendance for married women students: In respect of married women students undergoing UG programs, the minimum attendance for condonation (Theory/Practical) shall be relaxed and prescribed as 55% instead of 65% if they conceive during their academic career. Medical certificate from the Doctor (D.G.O) from the Government Hospital and the prescribed fee along with attendance details shall be forwarded to the college to consider the condonation of attendance mentioning the category

5.7. Zero Percent (0%) Attendance: The Students, who have earned 0% of attendance, have to repeat the program (by rejoining) without proceeding to succeeding semester and they have to obtain prior permission from the College/University immediately to rejoin the program.

5.8 Transfer of Students and Credits: The strength of the credits system is that it permits

inter Institutional transfer of students. By providing mobility, it enables individual students to develop their capabilities fully by permitting them to move from one Institution to another in accordance with their aptitude and abilities by obtaining necessary permission from the university.

5.8.1 Transfer of Students is permitted from one Institution to another Institution for the same program with same nomenclature.

Provided, there is a vacancy in the respective program of Study in the Institution where the transfer is requested.

Provided the Student should have passed all the courses in the Institution from where the transfer is requested.

5.8.2 The marks obtained in the courses will be converted and grades will be assigned as per the College norms.

5.8.3 The transfer students are eligible for classification.

5.8.4 The transfer students are not eligible for Ranking, Prizes and Medals.

5.8.5 Students who want to go to foreign Universities up to two semesters or Project Work with the prior approval of the Departmental/College Committee are allowed to get transfer of credits and marks which will be converted in to Grades as per the University norms and are eligible to get CGPA and Classification; they are not eligible for Ranking, Prizes and Medals.

5.9 Students are exempted from attendance requirements for online courses of the College and MOOC's.

6. EXAMINATION AND EVALUATION

6.1. Register for all subjects: Students shall be permitted to proceed from the First Semester up to Final Semester irrespective of their failure in any of the Semester Examination. For this purpose, Students shall register for all the arrear subjects of earlier semesters along with the current (subsequent) Semester Subjects.

6.2. Marks for Internal and End Semester Examinations for PART I, II, III, and IV

Category	heory	ractical
Internal Assessment	5	**0**
End semester Examination	**5**	**0**

6.3. Procedure for Awarding Internal Marks

Internal Examination Marks –Theory

Components	Marks
CIA I&II	**5**
Attendance	**5**
Assignment/Quiz	**5**
Total	**5**

6.4 Awarding Marks for Attendance (out of 5)

Percentage of Attendance	Marks
Below 60%	0 marks
60% to 75%	3 marks
75% to 90%	4 marks
Above 90%	5 marks

6.5 Components for Practical CIA.

Components	Marks
CIA –I	**15**
CIA - II	**15**
Observation Note	**05**
Attendance	**5**
Total	**40**

6.6 Components for Practical ESE.

Components	Marks
Completion of Experiments	**50**
Record	**05**
Viva voce	**05**
Total	**60**

6.7 Guidelines for Value Education Yoga and Environmental Studies (Part IV)

6.7.1. The Course Value Education Yoga is to be treated as 100% CIA course which is offered in V Semester for I year UG students.

6.7.2. The Course Environmental Studies is to be treated as 100% CIA course which is offered in IV Semester for I year UG students.

6.7.3 Total Marks for the Course = 100

Components	Marks
Two Tests(2 x30)	**60**
Field visit and report (10+10)	**20**
Two assignments (2 x10)	**20**
Total	**100**

The passing minimum for this course is 40%

6.7.4 In case, the candidate fails to secure 40% passing minimum, he/she may have to reappear for the same in the subsequent odd/even semesters.

6.8 Internship/ Industrial Training, Mini Project and Major Project Work

Internship/Industrial Training		Mini Project	Major Project Work		
Components	**Marks**	**Marks**	**Components**		Marks
CIA*[2]			**CIA** a) Attendance b) Review / Work Diary*[1]	10 Marks 30 Marks	**40**
Work Diary	25	-			
Report	50	50			
Viva–voce	25	50			
Examination					
Total	**100**	**100**	**ESE*[2]** a) Final Report 40Marks b)Viva-voce 20Marks		**60**
			Total		100

*1. Review is for Individual Project and Work Diary is for Group Projects (Group consisting of minimum 3 and maximum 5)

*2 Evaluation of report and conduct of viva voce will be done jointly by Internal and External Examiners

6.9 Guidelines for Professional Competency Skill- Online Mode (Part IV)- Online Exam 3 hours

Components	Marks
100 Objective Type Questions 100*1=100 Marks	**100**

Objective type Questions from Question Bank.

- The passing minimum for this paper is 40%
- In case, the candidate fails to secure 40% passing minimum, he/ she may have to reappear for the same in the subsequent semesters.

QUESTION PAPER PATTERN FOR CIA I, II AND ESE	
(3 HOURS)	**MAXIMUM:75Marks**
SECTION-A (**Objective Type**) **Answer ALL Questions** ALL Questions Carry EQUAL Marks	(10 x1=10 marks)
SECTION-B **(Either or Type)** **Answer ALL Questions** ALL Questions Carry EQUAL Marks	(5 x 5 = 25 marks)
SECTION-C **(Either or Type)** **Answer ALL Questions** ALL Questions Carry EQUAL Marks	(5 x 8 = 40 marks)
(Syllabus for CIA-I 2.5 Unit ,Syllabus for CIA-II All 5 Unit)	

6.10 PASSING MINIMUM

6.10.1 There shall be no passing minimum for Internal.

6.10.2 For external examination, passing minimum shall be 40% [Forty Percentage] of the maximum marks prescribed for the course for each Course/Practical/Project and Viva-Voce.

6.10.3 In the aggregate [External/Internal] the passing minimum shall be of 40%.

6.10.4 He / She shall be declared to have passed the whole examination, if he/she passes in all the Courses and Practical wherever prescribed as per the scheme of the examinations by earning 140 CREDITS in Part I, II, III, IV& V. He/she shall also fulfill the extension activities prescribed earning a minimum of 1 credit to qualify for the Degree.

6.11 SUPPLIMENTARY EXAMINATION:

Supplementary Examinations is conducted for the students who appeared in the final semester examinations. Eligible criteria for appearing in the Supplementary Examinations are as follows:

6.11.1 Eligibility: A Student who is having arrear of only one theory course in any of the semester or two theory course in the Final semester of the UG degree programme alone is eligible for Supplementary Examinations.

6.11.2 Non-eligibility for those completed the program: Students who have completed their Program duration but having arrears are not eligible to appear for Supplementary Examinations.

6.12 RETOTALLING, REVALUATION AND PHOTOCOPY OF THE ANSWER SCRIPTS:

6.12.1. Re-totaling: All UG Students who appeared for their Semester Examinations are eligible for applying for re-totaling of their answer scripts.

6.12.2. Revaluation: All current batch Students who have appeared for their Semester Examinations are eligible for Revaluation of their answer scripts. Passed out candidates are not eligible for Revaluation.

6.12.3. Photo copy of the answer scripts: Students who have applied for revaluation can apply for the Photocopy of answer scripts by paying prescribed fee.

7. CLASSIFICATION OF SUCCESSFUL STUDENTS

7

RANGE OF MARKS	GRADE POINTS	LETTER GRADE	DESCRIPTION
0-100	9.0-10.0	O	**Outstanding**
0-89	8.0-8.9	D+	**Excellent**
5-79	7.5-7.9	D	**Distinction**
0-74	7.0-7.4	A+	**Very Good**
0-69	6.0-6.9	A	**Good**
0-59	5.0-5.9	B	**Average**
0-49	4.0-4.9	C	**Satisfactory**
0-39	0.0	U	**Re-appear**
ABSENT	0.0	AAA	**ABSENT**

7.1 Computation of Grade Point Average (GPA) in a Semester, Cumulative Grade Point Average(CGPA) and Classification

GPA for a Semester: = ∑iCiGi ,∑iCi

That is, GPA is the sum of the multiplication of grade points by the credits of the courses divided by the sum of the credits of the courses in a semester.

CGPA for the entire programme: = ∑n∑iCniGni ,∑n∑iCni That is, CGPA is the sum of the multiplication of grade points by the credits of the entire programme divided by the sum of the credits of the courses of the entire programme

Where,

Ci= Credits earned for course I in any semester,

Gi=GradePointsobtainedforcourseiinanysemestern=Semesterinwhichsuchcourseswere credited.

7.2 Letter Grade and Classification

CGPA	GRAD E	CLASSIFICATION OF FINAL RESULT
9.5-10.0	O+	**First Class -Exemplary***
9.0 and above but below9.5	O	
8.5 and above but below 9.0	D++	**First Class with Distinction***
8.0 and above but below 8.5	D+	
7.5 and above but below 8.0	D	
7.0 and above but below 7.5	A++	**First Class**
6.5 and above but below 7.0	A+	
6.0 and above but below 6.5	A	
5.5 and above but below 6.0	B+	**Second Class**
5.0 and above but below 5.5	B	
4.5 and above but below 5.0	C +	**Third Class**
4.0 and above but below 4.5	C	
0.0 and above but below 4.0	**U**	**Re-appear**

*The Students who have passed in the first appearance and within the prescribed semester of the UG Programme (Major, Allied and Elective courses only) are eligible.

8. RANKING

Students who pass all the examinations prescribed for the Program in the FIRST APPEARANCE ITSELF ALONE are eligible for Ranking I, II and III.

9. MAXIMUM PERIOD FOR COMPLETION OF THE PROGRAM TO QUALIFY FOR A DEGREE

9.1. A Student who for whatever reasons is not able to complete the program within the normal period (N) or the Minimum duration prescribed for the programme, may be allowed two years period beyond the normal period to clear the backlog to be qualified for the degree. (Time Span =N+2years for the completion of programme.)

Scheme of Examinations from the Academic Year 2023-2024 Onwards

Structure of Credit Distribution as per the TANSCHE/UGC Guidelines

S.No.	Study Components	Part	Sem I		Sem II		Sem III		Sem IV		Sem V		Sem VI		No.of Paper	Total Credit
			No.of Paper	Credit	No.of Paper	Credit	No.of Paper	Credit	No.of Paper	Credit	No.of Paper	Credit	No.of Paper	Credit		
1	LANGUAGE – I	I	1	**3**	1	**3**	1	**3**	1	**3**					**4**	**12**
2	LANGUAGE - II	II	1	**3**	1	**3**	1	**3**	1	**3**					**4**	**12**
3	CORE COURSE THEORY	III	1	**5**	1	**5**	1	**5**	1	**5**	3	**15**	2	**10**	**9**	**45**
4	CORE COURSE PRACTICAL	III	1	**3**	1	**3**	1	**3**	1	**3**	1	**3**	1	**3**	**6**	**18**
5	DISCIPLINE SPECIFIC ELECTIVES	III									2	**6**	2	**6**	**4**	**12**
6	ALLIED THEORY	III	1	**3**	1	**3**	1	**3**	1	**3**					**4**	**12**
7	ALLIED PRACTICAL	III														**0**
8	PROJECT WORK	III											1	**4**	**1**	**4**
9	SKILL ENHANCEMENT COURSE (SEC) (DISCIPLINE/SUBJECT SPECIFIC)	IV			1	**2**	1	**2**	1	**2**					**3**	**6**
10	ENTREPRENEURIAL BASED (ANY ONE) - SEC 4	IV													**0**	**0**
11	FOUNDATION COURSE	IV	1	**2**											**1**	**2**
12	SKILL ENHANCEMENT COURSES (NME)	IV	1	**2**	1	**2**	1	**2**	1	**2**					**4**	**8**
13	INTERNSHIP	IV									1	**2**			**1**	**2**
14	PROFESSIONAL COMPETENCT SKILLS	IV											1	**2**	**1**	**2**
15	ENVIRONMENTAL STUDIES (EVS)	IV							1	**2**					**1**	**2**
16	VALUE EDUCATION - YOGA	IV									1	**2**			**1**	**2**
17	EXTENSION ACTIVITY	V											1	**1**	**1**	**1**
	Cumulative Credits		**7**	**21**	**7**	**21**	**7**	**21**	**8**	**23**	**8**	**28**	**8**	**26**	**45**	**140**

Total No.of Subjects	45
Marks	**4400**

PART	No.of Credits
PART - I	12
PART - II	12
PART - III	91
PART - IV	24
PART - V	1
Grand Total	**140**

Extra Credit (2+2)	**4**
	144

Scheme of Examinations LOCF-CBCS Pattern

(for the Students Admitted from the Academic Year:2023-2024 Onwards B.Sc. Information Technology

S.No.	PART	STUDY COMPONENTS	COURSE_CODE	TITLE OF THE COURSE	Hrs.		CREDIT	MARKS		
					Lect.	Lab.		CIA	ESE	TOTAL
SEMESTER - I										
1	I	LANGUAGE - I	23M1UFTA01	TAMIL - I	6	-	3	25	75	100
2	II	LANGUAGE - II	23M1UFEN01	ENGLISH - I	6	-	3	25	75	100
3	III	DSC THEORY - I	23M1UITC01	PROGRAMMING IN C	5	-	5	25	75	100
4	III	DSC PRACTICAL - I	23M1UITP01	PRACTICAL: C PROGRAMMING	-	5	3	40	60	100
5	III	GEC THEORY - I	23M1UMAA03	ALLIED: DISCRETE MATHEMATICS - I	4	-	3	25	75	100
6	IV	NMEC - I	23M1UELN01	PRINCIPLES OF CELLULAR COMMUNICATION AND SMARTPHONES	2		2	25	75	100
7	IV	FC- I	23M1UITFC01	FUNDAMENTALS OF COMPUTERS	2		2	25	75	100
				TOTAL	**25**	**5**	**21**	**190**	**510**	**700**
SEMESTER - II										
1	I	LANGUAGE - I	23M2UFTA02	TAMIL - II	6	-	3	25	75	100
2	II	LANGUAGE - II	23M2UFEN02	ENGLISH - II	6	-	3	25	75	100
3	III	DSC THEORY - II	23M2UITC02	JAVA PROGRAMMING	5	-	5	25	75	100
4	III	DSC PRACTICAL - II	23M2UITP02	PRACTICAL: JAVA PROGRAMMING AND DATA STRUCTURES	-	5	3	40	60	100
5	III	GEC THEORY - II	23M2UMAA04	ALLIED: DISCRETE MATHEMATICS - II	4	-	3	25	75	100
6	IV	NMEC - II	23M2UELN03	PC AND LAPTOP MAINTENANACE	2	-	2	25	75	100
7	IV	SEC PRACTICAL - II	23M2UITSP1	SEC : HTML PROGRAMMING	-	2	2	40	60	100
				TOTAL	**23**	**7**	**21**	**205**	**495**	**700**

S.No.	PART	STUDY COMPONENTS	COURSE_CODE	TITLE OF THE COURSE	Hrs.		CREDIT	MARKS		
					Lect.	Lab.		CIA	ESE	TOTAL
SEMESTER - III										
1	I	LANGUAGE - I	23M3UFTA03	TAMIL – III	6	-	3	25	75	100
2	II	LANGUAGE - II	23M3UFEN03	ENGLISH - III	6	-	3	25	75	100
3	III	DSC THEORY - III	23M3UITC03	RELATIONAL DATABASE MANAGEMENT SYSTEM	5	-	5	25	75	100
4	III	DSC PRACTICAL - III	23M3UITP03	PRACTICAL: RDBMS		5	3	40	60	100
5	III	GEC THEORY - III	23M3USTA08	ALLIED : STATICSTICAL METHODS AND ITS APPLICATIONS- I	4	-	3	25	75	100
6	IV	SEC PRACTICAL - III	23M3UITSP2	SEC : PHP PROGRAMMING		2	2	40	60	100
7	IV	NMEC - III	23M3UMAN01	QUANTITATIVE APTITUDE - I	2	-	2	25	75	100
				TOTAL	**23**	**7**	**21**	**205**	**495**	**700**
SEMESTER - IV										
1	I	LANGUAGE - I	23M4UFTA04	TAMIL – IV	6	-	3	25	75	100
2	II	LANGUAGE - II	23M4UFEN04	ENGLISH - IV	6	-	3	25	75	100
3	III	DSC THEORY - IV	23M4UITC04	.NET PROGRAMMING	5	-	5	25	75	100
4	III	DSC PRACTICAL - IV	23M4UITP04	PRACTICAL: .NET PROGRAMMING	-	5	3	40	60	100
5	III	GEC THEORY - IV	23M4USTA09	ALLIED : STATICSTICAL METHODS AND ITS APPLICATIONS- II	4	-	3	25	75	100
6	IV	SEC PRACTICAL - III	23M4UITSP3	SEC : MULTIMEDIA SYSTEMS		2	2	40	60	100
8	IV	NMEC - IV	23M3UMAN03	QUANTITATIVE APTITUDE - II	2		2	25	75	100
9	IV	AECC-ENVIRONMENTAL STUDIES*	23M4UEVS01	ENVIRONMENTAL STUDIES	-	-	2	100	-	100
		SELF STUDY*								
				TOTAL	**23**	**7**	**23**	**305**	**495**	**800**

S.No.	PART	STUDY COMPONENTS	COURSE_CODE	TITLE OF THE COURSE	Hrs.		CREDIT	MARKS		
					Lect.	Lab.		CIA	ESE	TOTAL
SEMESTER – V										
1	III	DSC THEORY - V	23M5UITC05	PYTHON PROGRAMMING	5	-	5	25	75	100
2	III	DSC PRACTICAL - V	23M5UITP05	PRACTICAL: PYTHON PROGRAMMING	-	5	3	40	60	100
3	III	DSC THEORY - VI	23M5UITC06	OPERATING SYSTEMS	5	-	5	25	75	100
4	III	DSC THEORY - VII	23M5UITC07	COMPUTER GRAPHICS	5		5	25	75	100
5	III	DSE THEORY- I	23M5UITE _ _	ELECTIVE – I :	4	-	3	25	75	100
6	III	DSE THEORY – II	23M5UITE _ _	ELECTIVE – II :	4	-	3	25	75	100
7	IV	AECC	23M5UVE01	VALUE EDUCATION	2	-	2	25	75	100
8	IV	INTERNSHIP	23M5UITIS1	INTERNSHIP	-	-	2	100	-	100
				TOTAL	**25**	**5**	**28**	**290**	**510**	**800**
SEMESTER - VI										
1	III	DSC THEORY - VIII	23M6UITC08	DATA MINING	5	-	5	25	75	100
2	III	DSC PRACTICAL - VII	23M6UITP06	PRACTICAL: DATA MINING	-	5	3	40	60	100
3	III	DSC THEORY - IX	23M6UITC09	DATA COMMUNICATION AND NETWORKING	5	-	5	25	75	100
4	III	DSE THEORY - III	23M6UITE _ _	ELECTIVE – III :	5	-	3	25	75	100
5	III	DSE THEORY - IV	23M6UITE _ _	ELECTIVE – IV :	5	-	3	25	75	100
6	III	PROJECT WORK	23M6UITPR1	PROJECT WORK	5	-	4	40	60	100
7	IV	PROFESSIONAL COMPETENCY SKILLS	23M6UCSOE1	INFORMATION TECHNOLOGY FOR COMPETITIVE EXAMS	-	-	2	100	-	100
9	V	EXTENSION ACTIVITY	21M6UEXA01	EXTENSION ACTIVITY	-	-	1		-	
				TOTAL	**25**	**5**	**26**	**280**	**420**	**700**
				OVERALL TOTAL	**144**	**36**	**140**	**1475**	**2925**	**4400**
1		EXTRA CREDIT		MOOC Courses offered in SWAYAM / NPTEL	-	-	2	-	-	-
2		EXTRA CREDIT		VAC	-	-	2	-	-	-

The students should undergo compulsory 2 weeks internship programs during the IV Semester vacation. The students should submit the report at the end of the V semester. Project report should be submitted at the end of the VI semester.

HOD MEMBER SECRETARY ACADEMIC COUNCIL PRINCIPAL

B.Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards								
Course Code	**Course Title**	**Course Type**	**Sem.**	**Hours**	**L**	**T**	**P**	**C**
23M1UITC01	**PROGRAMMING IN C**	**DSC THEORY - I**	**I**	**5**	**5**	**-**	**-**	**5**
Objective	Student can able to understand the basic concepts of C Programming language.							

Unit	Course Content	Knowledge Levels	Sessions
I	Overview of C: Introduction - Basic Structure of C Programs – Executing a 'C' Program. Constants, Variables and Data Types: C Tokens – Keyword and Identifiers - Constants - Variables - Data types - Declaration of Variables - Assigning values to variables - Defining Symbolic Constants. Operators and Expressions: Arithmetic, Relational, Logical, Assignment, Increment and Decrement operators, Conditional, Bitwise, and Special Operators - Arithmetic Expressions - Evaluation of Expressions - Precedence of Arithmetic Operators Type Conversion in Expressions. Managing Input and Output Operations: Reading a Character - Writing a Character - Formatted Input - Formatted Output.	K1	12
II	Decision Making and Branching: Introduction – Simple If Statement - If.....Else Statement - Nesting of If....Else Statements - Else If Ladder – Switch Statement - The? : Operator – GOTO Statement. Decision Making and Looping: Introduction - while statement - do statement – for statement - Jumps in loops.	K2	13
III	Arrays. Character Arrays and Strings - User-Defined Functions: Introduction – Need for User-Defined Functions - Elements of User-Defined Functions - Definition of Functions - Return Values and their Types - Function Calls – Function Declaration– Category of Functions- Nesting of Functions - Recursion – Passing Arrays to Functions - Passing Strings to Functions	K3	12
IV	Structures and Unions: Introduction - Defining a Structure - Declaring Structure Variables - Accessing Structure Members - Structures and Functions - Unions and Structures.	K3	11
V	Pointers: Understanding pointers - Accessing the address of a variable - Declaring Pointer Variables - Initialization of Pointer Variables - Accessing a variable through its pointer. File Management in C: Defining and opening a file - Closing a file - Input/Output operations on files - Error handling during I/O operations - Random access to files - Command line arguments.	K4	12
Course Outcome	CO1: Remember the Basic computer concepts	K1	
	CO2: Understand and use various constructs of the programming language such as conditionals, iteration, and recursion	K2	
	CO3: Apply the concept of string and user-defined function	K3	
	CO4: Apply the process of structure, union and pointers	K3	
	CO5: Analyze the concept of files	K4	

Learning Resources	
Text Books	1. E. Balaguruswamy, Programming in ANSI C, Fifth Edition, Tata McGraw Hill Publications, 2010
Reference Books	1. Ashok N Kamthane: Programming with ANSI and Turbo C, Pearson Edition Publ, 2002. 2. Kernighan, Brian, and Dennis Ritchie. The C Programming Language. 2nd ed. Upper Saddle River, NJ: Prentice Hall, 1988. ISBN: 9780131103627.

Website Link	1. https://www.geeksforgeeks.org/c-programming-language/ 2. http://onlinecourses.swayam2.ac.in/cec21_cs05/preview			
	L-Lecture	**T-Tutorial**	**P-Practical**	**C-Credit**

B.Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards

Course Code	Course Title	Course Type	Sem	Hours	L	T	P	C
23M1UITC01	**PROGRAMMING IN C**	**DSC THEORY - I**	**I**	**5**	**5**	**-**	**-**	**5**

CO-PO Mapping

CO Number	PO1	PO2	PO3	PO4	PO5	PS O1	PSO2	PSO3	PSO4	PSO5
CO1	S	M	M	M	L	S	M	M	M	L
CO2	S	M	M	M	M	S	M	M	M	L
CO3	M	M	M	M	M	M	M	M	M	M
CO4	M	M	M	M	S	M	M	M	M	M
CO5	L	M	M	S	S	L	M	M	M	S

Level of Correlation between CO and PO	L-LOW	M- MEDIUM	S-STRONG

Tutorial Schedule	Conducting Group Discussion, Class test,
Teaching and Learning Methods	Handling classes through chalk & talk method and presentation
Assessment Methods	Attendance, Assignment, CIA I, CIA II and ESE

Designed By	**Verified By**	**Approved By**
M.Krishnamoorthi	HOD Mr.P Subramaniam	Member Secretary Dr.S.Shahitha

B.Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards								
Course Code	**Course Title**	**Course Type**	**Sem**	**Hours**	**L**	**T**	**P**	**C**
23M1UITP01	**PRACTICAL:C PROGRAMMING**	**DSC PRACTICAL - I**	**I**	**5**	**-**	**-**	**5**	**3**
Objective	Familiarize the different control and decision making statements. Student can Build programs using arrays, strings and files.							

S.No.	List of Experiments / Programs	Knowledge Levels	Sessins
1	Develop a C program to print prime numbers within the range of integers given.	K1	5
2	Develop a C Program to find the sum and average of given N numbers.	K2	5
3	Develop a C Program using all decision making and looping statements	K2	5
4	Develop a C Program to arrange the given numbers in ascending /descending order.	K3	5
5	Develop a C Program to perform matrix multiplication.	K3	5
6	Develop a C Program to manipulate string functions.	K3	5
7	Develop a C Program to find the Fibonacci series for a give number using recursive function.	K4	5
8	Develop a C Program to show Call by Value and Call by Reference.	K4	5
9	Develop a C program to swap two numbers using pointers.	K4	5
10	Develop a C Program to update the student's details using various file modes.	K5	10
11	Develop a C Program to copy the content of one file to another file.	K5	5
Course Outcome	**CO1:** Remember all the statements in C Programming	K1	
	CO2: Understand the problem and construct the algorithm	K2	
	CO3: Apply the algorithm that are relevant to the casual	K3	
	CO4: Analyze the source lines that are match up with the casual	K4	
	CO5: Evaluate the flow of execution	K5	

Learning Resources

Text Books	1. Problem solving and program design in C / Jeri R. Hanly, Elliot B.Koffman. —7th ed., PEARSON 2. E. Balagurusamy, Programming in ANSI C, fifth edition, Tata McGraw-Hill.
Reference Books	1. V. Rajaraman Computer Programming in C Prentice Hall of India Pvt Ltd, 1st Edition,2004 2. Yashwvant Kanetkar Let us C BPB Publications 13th Edition, 2014
Website Link	1. https://www.geeksforgeeks.org/c-programming-language/

	L-Lecture	T-Tutorial	P-Practical	C-Credit

B.Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards								
Course Code	**Course Title**	**Course Type**	**Sem**	**Hours**	**L**	**T**	**P**	**C**
23M1UITP01	**PRACTICAL:C PROGRAMMING**	**DSC PRACTICAL- I**	**I**	**5**	**-**	**-**	**5**	**3**

CO-PO Mapping

CO Number	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	L	M	M	S	S	S	S	S	M	M
CO2	S	M	M	L	M	S	S	M	M	M
CO3	S	M	M	L	M	S	M	M	M	M
CO4	M	M	M	S	S	S	M	M	M	M
CO5	M	M	M	M	M	M	M	L	M	M

Level of Correlation between CO and PO	L-LOW	M-MEDIUM	S-STRONG

Tutorial Schedule	To give more sample programs to related topic
Teaching and Learning Methods	Handling practical session through projector
Assessment Methods	Attendance, Observation, Model Practical(CIA I & CIA II) & ESE

Designed By	**Verified By**	**Approved By**
M.Krishnamoorthi	HOD Mr.P Subramaniam	Member Secretary Dr.S.Shahitha

B.Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards								
Course Code	**Course Title**	**Course Type**	**Sem.**	**Hours**	**L**	**T**	**P**	**C**
23M1UITFC1	**Fundamentals of Computers**	**FC THEORY - I**	**I**	**2**	**2**	**-**	**-**	**2**

Objective	Understand the student's main principles of imperative, functional and logic oriented programming languages.

Unit	**Course Content**	**Knowledge Levels**	**Sessions**
I	Introduction: Characteristics of Computers - Evolution of Computers Basic Computer Organization: I/O Unit - Storage Unit - Arithmetic Logic Unit - Control Unit - Central Processing Unit	K1	6
II	Computer Software: Types of Software - System Architecture Computer Languages: Machine Language - Assembly Language - High Level Language - Object Oriented Languages	K1	6
III	Problem Solving Concepts: Problem Solving in Everyday life - Types of Problems - Problem solving with computers - Difficulties with Problem Solving	K2	4
IV	Problem Solving concepts for the computer: Constant Variables - Data Types - Functions -Operators - Expressions and Equations - Organizing the Solution: Analyzing the problem - Algorithm - Flowchart - Pseudo code	K4	4
V	Programming Structure: Structuring a solution - Modules and their function - Local and Global variables - Parameters - Return values - Sequential Logic Structure - Problem solving with Decision - Problem Solving with Loops.	K5	4
Course Outcome	CO1: Outline the Computer fundamentals and various problem solving concepts in Computers	K1	
	CO2: Describe the basic computer organization, software, computer languages.	K2	
	CO3: Identify the types of computer languages, software, computer problems	K3	
	CO4: Choose most appropriate programming languages, constructs and features to solve the problems in diversified domains.	K3	
	CO5: Analyze the design of modules and functions in structuring the solution.	K4	

Learning Resources

Text Books	1. Pradeep K.Sinha and Priti Sinha, (2004) —Computer Fundamentals‖, Sixth Edition, BPB Publications. (Unit I : Chapter 1 & 2, Unit II : Chapter 10 & 12) 2. Maureen Sprankle and Jim Hubbard, (2009) —Problem Solving and Programming Concept, Ninth Edition, Prentice Hall. (Unit III: Chapter 1,2 &3) Unit IV : Chapter 3, Unit V : Chapter 4,5 ,6,7 & 8)
Reference Books	1. R.G. Dromey, (2007), —How to Solve it by Computer‖, Prentice Hall International Series in Computer Science. 2. C. S. V. Murthy, (2009), —Fundamentals of Computers‖, Third Edition, Himalaya Publishing House.
Website Link	1. http://www.tutorialspoint.com/computer_fundamentals/ 2. https://www.programiz.com/article/flowchart-programming

	L-Lecture	T-Tutorial	P-Practical	C-Credit
B.Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards				

Course Code	Course Title	Course Type	Sem.	Hours	L	T	P	C
23M1UITFC1	Fundamentals of Computers	FC THEORY - I	I	2	2	-	-	2

CO-PO Mapping

CO Number	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	M	M	M	S	S	M	M	M	S
CO2	S	M	M	M	M	S	M	M	M	M
CO3	S	S	S	S	M	S	S	S	S	M
CO4	S	M	M	M	S	S	M	M	M	S
CO5	S	S	M	M	M	S	S	M	M	M

Level of Correlation between CO and PO	L-LOW	M- MEDIUM	S-STRONG

Tutorial Schedule	**Conducting Group Discussion, Class test,**
Teaching and Learning Methods	**Handling classes through chalk & talk method and presentation**
Assessment Methods	**Attendance, Assignment, CIA I, CIA II and ESE**

Designed By	Verified By	Approved By
E.Jamuna	HOD Mr.P Subramaniam	Member Secretary Dr.S.Shahitha

B.Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards								
Course Code	**Course Title**	**Course Type**	**Sem.**	**Hours**	**L**	**T**	**P**	**C**
23M2UITC02	**JAVA PROGRAMMING**	**DSC THEORY - II**	**II**	**5**	**5**	**-**	**-**	**5**
Objective	Student can able to use the SDK environment to create, debug and run servlet program							

Unit	Course Content	Knowledge Levels	Sessions
I	Fundamentals of Object- Oriented Programming: Introduction – Object Oriented Paradigm – Concepts of Object – Oriented Programming – Benefits of OOP – Evolution: Java History- Java Features - Differs from C and C++ - Overview of Java Language: Java Program-Structure – Tokens – Java Statements – Java Virtual Machine – Command Line Arguments	K1	12
II	Constants, Variables and Data Types – Operators and Expressions – Decision making and Branching – Looping – Arrays - Strings – Collection Interfaces and classes	K2	12
III	Classes objects and methods: Introduction – Defining a class – Method Declaration – Constructors - Method Overloading – Static Members – Nesting of methods – Inheritance – Overriding – Final variables and methods – Abstract methods and classes	K3	12
IV	Multiple Inheritance: Defining Interfaces – Extending Interfaces – Implementing Interfaces – Packages: Creating Packages – Accessing Packages – Using a Package – Managing Errors and Exceptions - Multithreaded Programming	K4	12
V	Layout Managers - JDBC – Java Servlet: - Servlet Environment Role – Servlet API – Servlet Life Cycle – Servlet Context – HTTP Support – HTML to Servlet Communication	K5	12
Course Outcome	CO1: Outline the basic terminologies of OOP,JDBC and Internet programming concepts	K1	
	CO2: Solve problems using basic constructs, mechanisms, techniques and technologies of Java	K2	
	CO3: Analyze and explain the behavior of simple programs involving different techniques.	K3	
	CO4: Assess various problem-solving strategies involved in Java to develop a high-level application.	K3	
	CO5: Design GUI based JDBC applications and able to develop Servlets using suitable OOP concepts and techniques	K4	
Learning Resources			

Text Books	1. E Balagurusamy(2010), ―Programming with Java‖, Tata McGraw Hill Edition India Private Ltd, 4th Edition 2. C Xavier,‖Java Programming – A Practical Approach‖, Tata McGraw Hill Edition Private Ltd
Reference Books	1. P.Naughton and H.Schildt (1999), ―Java 2 The Complete Reference‖, TMH, 3rd Edition 2. Jaison Hunder & William Crawford (2002),‖Java Servlet Programming‖, O'Reilly 3. Jim Keogh (2002), ―J2EE: The Complete Reference‖, Tata McGraw Hill Edition.
Website Link	1. http://www.tutorialspoint.com/java/ 2. http://www.journaldev.com/1877/servlet-tutorial-java

	L-Lecture	**T-Tutorial**	**P-Practical**	**C-Credit**

B.Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards

Course Code	Course Title	Course Type	Sem.	Hours	L	T	P	C
23M2UITP02	**JAVA PROGRAMMING**	**DSC THEORY - II**	**II**	**5**	**5**	**-**	**-**	**5**

CO-PO Mapping

CO Number	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	M	M	M	S	S	M	M	M	S
CO2	S	M	M	M	M	S	M	M	M	M
CO3	S	S	S	S	M	S	S	S	S	M
CO4	S	M	M	M	S	S	M	M	M	S
CO5	S	S	M	M	M	S	S	M	M	M

Level of Correlation between CO and PO	L-LOW	M- MEDIUM	S-STRONG

Tutorial Schedule	**Conducting Group Discussion, Class test,**
Teaching and Learning Methods	**Handling classes through chalk & talk method and presentation**
Assessment Methods	**Attendance, Assignment, CIA I, CIA II and ESE**

Designed By	**Verified By**	**Approved By**
M.Sudha	HOD Mr.P Subramaniam	Member Secretary Dr.S.Shahitha

B.Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards								
Course Code	**Course Title**	**Course Type**	**Sem.**	**Hours**	**L**	**T**	**P**	**C**
23M2UITP02	**PRACTICAL:JAVA PROGRAMMING AND DATA STRUCTURES**	**DSC PRACTICAL - II**	**II**	**5**	**-**	**-**	**5**	**3**
Objective	To design and develop applications using different Java programming language techniques, JDBC & Servlets student learned java concepts.							

S.No.	List of Experiments / Programs	Knowledge Levels	Sessions
1	Write a Java program to implement the Stack ADT using a singly linked list.	K1	5
2	Write a Java program to implement the Queue ADT using a singly linked list.	K2	5
3	Write a Java program for the implementation of circular Queue.	K2	5
4	Write a Java program that reads an infix expression, converts into postfix form	K3	5
5	Write a Java program to evaluate the postfix expression (use stack ADT).	K3	5
6	Write a Java program to an Insert an element into a binary search tree.	K3	5
7	Write a Java program to delete an element from a binary search tree.	K4	5
8	Write a Java program to search for a key element in a binary search tree.	K4	5
9	Write a Java program for the implementation of BFS for a given graph.	K5	10
10	Write a Java program for the implementation of DFS for a given graph.	K5	10
Course Outcome	**CO1:** Identify and explain the way of solving the simple problems	K1	
	CO2: Use appropriate software development environment to write compile and execute object-oriented Java programs	K2	
	CO3: Analyze and identify necessary mechanisms of Java needed to solve real-world problem	K3	
	CO4: Test for defects and validate a Java program with different inputs	K4	
	CO5: Design, develop and compile Core Java , GUI , JDBC and servlet applications that utilize OOP and data structure concepts	K5	

Learning Resources	
Text Books	1. E Balagurusamy(2010), ―Programming with Java‖, Tata McGraw Hill Edition India Private Ltd, 4th Edition 2. C Xavier,‖Java Programming – A Practical Approach‖, Tata McGraw Hill Edition Private Ltd
Reference Books	1. P.Naughton and H.Schildt (1999), ―Java 2 The Complete Reference‖, TMH, 3rd Edition 2. Jaison Hunder & William Crawford (2002),‖Java Servlet Programming‖, O'Reilly 3. Jim Keogh (2002), ―J2EE: The Complete Reference‖, Tata McGraw Hill Edition.
Website Link	1. http://www.tutorialspoint.com/java/ 2. http://www.journaldev.com/1877/servlet-tutorial-java

	L-Lecture	**T-Tutorial**	**P-Practical**	**C-Credit**

B.Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards

Course Code	Course Title	Course Type	Sem.	Hours	L	T	P	C
23M2UITP02	**PRACTICAL:JAVA PROGRAMMING AND DATA STRUCTURES**	**DSC PRACTICAL - II**	**II**	**5**	**-**	**-**	**5**	**3**

CO-PO Mapping

CO Number	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	M	M	M	S	S	M	M	M	S
CO2	S	M	M	M	M	S	M	M	M	M
CO3	S	S	S	S	M	S	S	S	S	M
CO4	S	M	M	M	S	S	M	M	M	S
CO5	S	S	M	M	M	S	S	M	M	M

Level of Correlation between CO and PO	L-LOW	M- MEDIUM	S-STRONG

Tutorial Schedule	To give more sample programs to related topic
Teaching and Learning Methods	Handling practical session through projector
Assessment Methods	Attendance, Observation, Model Practical(CIA I & CIA II) & ESE

Designed By	Verified By	Approved By
M.Sudha	HOD Mr.P Subramaniam	Member Secretary Dr.S.Shahitha

B.Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards								
Course Code	**Course Title**	**Course Type**	**Sem.**	**Hours**	**L**	**T**	**P**	**C**
23M3UITC03	**Relational Database Management System**	**DSC THEORY-III**	**III**	**5**	**5**	**-**	**-**	**5**
Objective	To understand the basic DBMS models and architecture and student to learn how to query and normalize the database.							

Unit	Course Content	Knowledge Levels	Sessions
I	**Introduction to Databases**: Introduction – Characteristics of the Database Approach – Actors on the Scene – Workers behind the scene – Advantages of using DBMS Approach. **Overview of database and Architectures:** Data Models- Schemas- and Instances – Three-schema Architecture and Data Independence – Database languages & Interfaces – Database System Environment– Centralized & Client Server Architecture for DBMS - Classification of DBMS.	K1	12
II	**Basic Relational Model:** Relational Model Concepts – Relational Model Constraints and Relational Database Schemas – Update Operations, Tractions, Dealing with Constraint Violations – Formal Relational Languages: Unary Relational Operations: SELECT and PROJECT – Relational Algebra Operations from Set Theory – Binary Relational Operations: JOIN and DIVISION – Examples of Queries in Relational Algebra.	K2	12
III	**Conceptual Data Modeling using the ER Model:** Using High-Level Conceptual Data Models for Database Design – An example DB application – Entity Types- Entity Sets- Attributes- and Keys – Relationship Types- Relationship sets- Roles- and Structural Constraints – Weak entity types – Example- Mapping a Conceptual Design into Logical Design: Relational Database Design using ER-Relational Mapping –Mapping EER Model Constructs to Relations	K3	12
IV	**Functional Dependencies and Normalization for Relational Database:** Functional Dependencies – Definition of Functional Dependency – Normal Forms based on Primary Keys – Normalization of Relations – First Normal Form – Second Normal Form – Third Normal Form – BCNF- Fourth Normal Form- Fifth Normal Form	K4	12

V	**SQL:** The Relational Database Standard: Data definition, Constraints, and schema changes in SQL – Basic Queries in SQL – More complex SQL Queries – Insert- delete and update statements in SQL – Views in SQL. PL/SQL: Introduction to PL/SQL – More on PL/SQL – Error Handling in PL/SQL – Oracles Named Exception Handlers – Stored Procedures and Functions – Execution of Procedures and Functions – Advantages – Procedures Vs. Functions – Syntax for Creating Procedures and Functions – Deleting a Stored Procedure or Function – Oracle Packages – Database Triggers – Types Of Triggers – Deleting a	K5	12
	Trigger – Raise-Application Error Procedure. **Current Trends* A Survey and Comparison of Relational and Non-Relational Database ***		
	…… Self Study		
Course Outcome	CO1: Outline the fundamental RDBMS concepts and PL/SQL	K1	
	CO2: Apply database operations, mapping, normalization, SQL and PL/SQL	K2	
	CO3: Analyze the requirements to implement relational database concepts	K3	
	CO4: Evaluate the database based on various models and normalization	K4	
	CO5: Design and construct normalized tables and manipulate it effectively using SQL and PL/SQL database objects	K5	

Learning Resources				
Text Books	1. Ramez Elmasri, Shamkant B. Navathe (2014), ―Database Systems‖, Sixth edition, Pearson Education, New Delhi. 2. Ivan Bayross (2003 Reprint), SQL, PL/SQL-The Programming Language of Oracle, Second Revised Edition, BPB Publications, New Delhi.			
Reference Books	1. Abraham Silberschatz, Henry F.Korth, S.Sudarshan, Database System Concepts, Tata McGraw Hill Publication, 4th Edition.			
Website Link	https://ecomputernotes.com/database-system/rdbms			
Self-Study Material	https://www.ijstr.org/final-print/june2019/Database-Management-System.pdf			
	L-Lecture	**T-Tutorial**	**P-Practical**	**C-Credit**

B.Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards										
Course Code	**Course Title**			**Course Type**	**Sem**	**Hours**	**L**	**T**	**P**	**C**
23M3UITC03	**Relational Database Management System**			**DSC THEORY-III**	**III**	**5**	**5**	**-**	**-**	**5**

CO-PO Mapping

CO Number	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	M	M	S	L	M	S	S	S	L
CO2	S	S	S	S	S	M	S	M	M	M
CO3	M	S	S	M	M	S	S	M	S	M
CO4	M	S	S	S	S	S	S	S	S	M
CO5	L	S	M	S	S	L	M	S	S	S

Level of Correlation between CO and PO	L-LOW	M- MEDIUM	S-STRONG

Tutorial Schedule	Conducting Group Discussion
Teaching and Learning Methods	Handling classes through chalk & talk method, PPT presentation
Assessment Methods	Attendance, Assignment, CIA I, CIA II and ESE

Designed By	**Verified By**	**Approved By**
M .Krishnamoorthi	HOD Mr.P Subramaniam	Member Secretary Dr.S.Shahitha

B.Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards								
Course Code	**Course Title**	**Course Type**	**Sem**	**Hours**	**L**	**T**	**P**	**C**
23M3UITP03	**PRACTICAL: RDBMS**	**DSC PRACTICAL - III**	**III**	**5**	**-**	**-**	**5**	**3**
Objective	Student will earn and implement SQL & PL/SQL concepts.							

S.No.	List of Experiments / Programs	Knowledge Levels	Sessions
1	DDL Commands	K1	5
2	DML Commands	K2	5
3	DCL Commands	K2	5
4	SQL Built-in functions	K3	6
5	Using Sub Queries	K3	6
6	Simple programs using PL/SQL	K3	6
7	Procedures	K4	6
8	User-defined functions	K4	7
9	Exception Handling	K5	7
10	Triggers	K5	7
Course Outcome	**CO1:** Choose appropriate SQL queries and PL/SQL blocks for the database.	K1	
	CO2: Implement SQL and PL/SQL blocks for the given problem effectively.	K2	
	CO3: Analyze the problem and Exceptions using queries and PL/SQL blocks.	K3	
	CO4: Validate the database for normalization using SQL and PL/SQL blocks.	K4	
	CO5: Design Database tables, create Procedures, user-defined functions and Triggers.	K5	
Learning Resources			

Text Books	1. Ramez Elmasri, Shamkant B. Navathe (2014), ―Database Systems‖, Sixth edition, Pearson Education, New Delhi. 2. Ivan Bayross (2003 Reprint), SQL, PL/SQL-The Programming Language of Oracle, Second Revised Edition, BPB Publications, New Delhi.

Reference Books	1. Abraham Silberschatz, Henry F.Korth, S.Sudarshan, Database System Concepts, Tata McGraw Hill Publication, 4th Edition.
Website Link	https://ecomputernotes.com/database-system/rdbms https://www.tutorialspoint.com/sql/sql-rdbms-concepts.htm

	L-Lecture	**T-Tutorial**	**P-Practical**	**C-Credit**

B.Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards

Course Code	Course Title	Course Type	Sem	Hours	L	T	P	C
23M3UITP03	**PRACTICAL: RDBMS**	**DSC PRACTICAL - III**	**III**	**5**	**-**	**-**	**5**	**3**

CO-PO Mapping

CO Number	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	M	S	S	S	S	S	S	S	M
CO2	S	S	S	S	M	S	S	S	S	S
CO3	S	S	S	S	M	S	M	S	S	S
CO4	S	S	M	S	S	S	S	S	S	S
CO5	M	S	S	S	S	M	S	S	M	S

Level of Correlation between CO and PO	L-LOW	M-MEDIUM	S-STRONG

Tutorial Schedule	To give more sample programs to related topic
Teaching and Learning Methods	Handling practical session through projector
Assessment Methods	Attendance, Observation, Model Practical(CIA I & CIA II) & ESE

Designed By	**Verified By**	**Approved By**
M .Krishnamoorthi	HOD Mr.P Subramaniam	Member Secretary Dr.S.Shahitha

B.Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards								
Course Code	**Course Title**	**Course Type**	**Sem.**	**Hours**	**L**	**T**	**P**	**C**
23M4UITC04	**.Net Programming**	**DSC THEORY-IV**	**IV**	**5**	**5**	**-**	**-**	**5**
Objective	Students identify and understand the goals and objectives of the .NET framework and ASP.NET with C# language.							

Unit	Course Content	Knowledge Levels	Sessions
I	**Overview of .NET framework:** Common Language Runtime (CLR), Framework Class Library- C# Fundamentals: Primitive types and Variables – Operators - Conditional statements Looping statements – Creating and using Objects – Arrays – String operations.	K1	12
II	**Introduction to ASP.NET:** IDE-Languages supported Components - Working with Web Forms – Web form standard controls: Properties and its events – HTML controls -List Controls: Properties and its events.	K2	12
III	**Rich Controls:** Properties and its events - validation controls: Properties and its events - File Stream classes - File Modes - File Share - Reading and Writing to files - Creating, Moving, Copying and Deleting files - File uploading	K3	12
IV	**ADO.NET:** Overview of ADO .Net Database Connections - Commands - Data Reader - Data Adapter - Data Sets - Data Controls and its Properties - Data Binding	K4	12
V	**Grid View Control:** Deleting, editing, Sorting and Paging. XML classes - Web form to manipulate XML files - Website Security - Authentication - Authorization – Creating aWeb application. **Current Trends-***.NET Web Development Firm*	K5	12
	…… Self Study		
Course Outcome	CO1: Remember the knowledge of C# programming constructs and the .NET Framework	K1	
	CO2: Understanding a software to solve real-world problems using ASP.NET	K2	
	CO3: Apply Work On Various Controls Files	K3	
	CO4: To analyze the web application using Microsoft ADO.NET	K4	
	CO5: To evaluate the web applications using XML	K5	

Learning Resources	
Text Books	1. SvetlinNakov,VeselinKolev& Co, Fundamentals of Computer Programming with 2. C#,Faber publication,2019. 2. Mathew, Mac Donald, The Complete Reference ASP.NET, Tata McGraw-Hill,2015

Reference Books	1. Herbert Schildt, The Complete Reference C#.NET, TataMcGraw-Hill,2017. 2. Kogent Learning Solutions, C# 2012 Programming Covers .NET 4.5 Black Book, Dreamtechpres,2013 3. Anne Boehm, Joel Murach, Murach's C# 2015, Mike Murach& Associates Inc.2016 4. DenielleOtey, Michael Otey, ADO.NET: The Complete reference, McGrawHill,2008
Website Link	1. https://www.geeksforgeeks.org/introduction-to-net-framework/ 2. https://www.javatpoint.com/net-framework
Self-Study Material	https://www.ijirt.org/master/publishedpaper/IJIRT142726_PAPER.pdf

	L-Lecture	**T-Tutorial**	**P-Practical**	**C-Credit**

B.Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards									
Course Code	**Course Title**	**Course Type**	**Sem**	**Hours**	**L**	**T**	**P**	**C**	
23M4UITC04	**.NET Programming**	**DSC THEORY-IV**	**IV**	**5**	**5**	**-**	**-**	**5**	

CO-PO Mapping

CO Number	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PSO1**	**PSO2**	**PSO3**	**PSO4**	**PSO5**
CO1	S	S	M	M	L	S	M	M	M	L
CO2	S	S	M	M	L	S	S	M	M	L
CO3	S	M	M	M	L	S	M	M	M	L
CO4	S	M	M	M	M	S	S	S	S	M
CO5	S	M	M	M	M	S	S	S	S	M

Level of Correlation between CO and PO	L-LOW	M- MEDIUM	S-STRONG

Tutorial Schedule	Conducting Group Discussion, Class test
Teaching and Learning Methods	Handling classes through chalk & talk method, PPT presentation
Assessment Methods	Attendance, Assignment, CIA I, CIA II and ESE

Designed By	**Verified By**	**Approved By**
T.Tamilarasi	HOD Mr.P Subramaniam	Member Secretary Dr.S.Shahitha

B.Sc. Information Technology– Syllabus LOCF – CBCS with effect from 2023-2024 Onwards								
Course Code	**Course Title**	**Course Type**	**Sem**	**Hours**	**L**	**T**	**P**	**C**
23M4UITP04	**.NET PROGRAMMING**	**DSC-PRACTICAL-IV**	**IV**	**5**	**-**	**-**	**5**	**3**
Objective	Students can create rich database applications using ADO.NET to implement the file handling operations.							

S.No.	List of Experiments / Programs	Knowledge Levels	Sessions
1	Create an exposure of Web applications and tools	K1	3
2	Implement the Html Controls	K1	3
3	Implement the Server Controls	K1	3
4	Web application using Web controls.	K2	3
5	Web application using List controls.	K2	3
6	Web Page design using Rich control. Validate user input using Validation controls. Working with File concepts.	K2	4
7	Web application using Data Controls.	K3	4
8	Data Binding with Web controls	K3	4
9	Data Binding with Data Controls.	K3	4
10	Database application to perform insert, update and delete operations.	K4	4
11	Database application using Data Controls to perform insert, delete, edit, paging and sorting operation.	K4	5
12	Implement the Xml classes.	K4	5
13	Implement Authentication – Authorization.	K5	5
14	Ticket reservation using ASP.NET controls.	K5	5
15	Online examination using ASP.NET controls.	K5	5
Course Outcome	**CO1:** Remember the web applications and implement various controls.	K1	
	CO2: Understand the web pages in Rich control.	K2	
	CO3: Apply the knowledge about file handling operations	K3	
	CO4: Create a design XML classes	K5	
	CO5: Create a software to solve real-world problems using ASP.NET	K5	

Learning Resources	
Text Books	1. SvetlinNakov, VeselinKolev& Co, Fundamentals of Computer Programming with C#, Faber publication,2019. 2. Mathew, Mac Donald, The Complete Reference ASP.NET, Tata McGraw-Hill,2015.
Reference Books	1.Herbert Schildt, The Complete Reference C#.NET, TataMcGraw-Hill,2017. 2. Kogent Learning Solutions, C# 2012 Programming Covers .NET 4.5 Black Book, Dreamtech pres, 2013. 3. Anne Boehm, Joel Murach, Murach's C# 2015, Mike Murach& Associates Inc.2016.
Website Link	https://www.geeksforgeeks.org/introduction-to-net-framework/ https://www.javatpoint.com/net-framework

	L-Lecture	T-Tutorial	P-Practical	C-Credit

B.Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards								
Course Code	**Course Title**	**Course Type**	**Sem**	**Hours**	**L**	**T**	**P**	**C**
23M4UITP04	**.NET PROGRAMMING**	**DSC PRACTICAL-IV**	**IV**	**5**	**-**	**-**	**5**	**3**

CO-PO Mapping

CO Number	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	L	M	M	S	S	S	M	L	M	L
CO2	S	M	M	L	M	S	S	M	M	S
CO3	S	M	M	L	M	S	S	M	S	S
CO4	M	M	M	S	S	S	M	S	M	M
CO5	M	M	M	M	M	S	M	M	M	S

Level of Correlation between CO and PO	L-LOW	M-MEDIUM	S-STRONG

Tutorial Schedule	To give more sample programs to related topic
Teaching and Learning Methods	Handling practical session through projector
Assessment Methods	Attendance, Observation, Model practical's(CIA I, CIA II and ESE)

Designed By	Verified By	Approved By
T.Tamilarasi	HOD Mr.P Subramaniam	Member Secretary Dr.S.Shahitha

B.Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards								
Course Code	**Course Title**	**Course Type**	**Sem.**	**Hours**	**L**	**T**	**P**	**C**
23M5UITC05	**PYTHON PROGRAMMING**	**DSC THEORY- V**	**V**	**5**	**5**	**-**	**-**	**5**
Objective	Students Understand the concepts of Python programming and apply the OOPs concept.							

Unit	Course Content	Knowledge Levels	Sessions
I	**Basics of Python Programming:** History of Python-Features of Python-Literal-Constants-Variables - Identifiers–Key words Built-in Data Types-Output Statements – Input Statements Comments – Indentation- Operators-Expressions-Type conversions. Python **Arrays**: Defining and Processing Arrays – Array methods	K1	12
II	**Control Statements**: Selection/Conditional Branching statements: if, if-else, nested if and if-elif-else statements. **Iterative Statements**: while loop-for loop-else suite in loop and nested loops. **Jump Statements**: break-continue and pass statements	K2	12
III	**Functions**: Function Definition – Function Call – Variable Scope and its Lifetime-Return Statement. **Function Arguments**: Required Arguments-Keyword Arguments,- Default Arguments and Variable Length Arguments-Recursion. **Python Strings**: String operations- Immutable Strings - Built-in String Methods and Functions - String Comparison. **Modules**: import statementThe Python module – dir () function – Modules and Namespace – Defining our own modules	K3	12
IV	**Lists:** Creating a list -Access values in List-Updating values in Lists-Nested lists -Basic list operations-List Methods. **Tuples:** Creating, Accessing-Updating and Deleting Elements in a tuple – Nested tuples– Difference between lists and tuples. **Dictionaries:** Creating-Accessing-Updating and Deleting Elements in a Dictionary – Dictionary Functions and Methods - Difference between Lists and Dictionaries.	K4	12
V	**Python File Handling**: Types of files in Python - Opening and Closing files-Reading and Writing files: write() and write lines() methods- append() method – read() and read lines() methods – with keyword – Splitting words – File methods - File Positions Renaming and deleting files. **Current trends * Web Development***	K5	12
	…… Self Study		
	CO1: Remember Outline the basic concepts in python language.	K1	

Course Outcome	CO2: Understanding the Interpret different looping and conditional statements in python language	K2	
	CO3: Apply the various data types and identify the usage of control statements.	K3	
	CO4:Analyze and solve problems using basic constructs and techniques of python	K4	
	CO5:Evaluate the approaches used in the development of interactive application	K5	

Learning Resources	
Text Books	1.ReemaThareja, ―Python Programming using problem solving approach‖, First Edition, 2017, Oxford University Press
Reference Books	1. VamsiKurama, ―Python Programming: A Modern Approach‖, Pearson Education Mark Lutz, ‖Learning Python‖, Orielly. 2.Dr. R. Nageswara Rao, ―Core Python Programming‖, First Edition, 2017, Dream tech Publishers
Website Link	1. https://www.programiz.com/python-programming 2. https://www.guru99.com/python-tutorials.html
Self-Study Material	1.https://realpython.com/tutorials/web-dev/ 2. https://www.fullstackpython.com/web-development.html

	L-Lecture	**T-Tutorial**	**P-Practical**	**C-Credit**

B.Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards									
Course Code	**Course Title**	**Course Type**	**Sem**	**Hours**	**L**	**T**	**P**	**C**	
23M5UITC05	**PYTHON PROGRAMMING**	**DSC THEORY-V**	**V**	**5**	**5**	**-**	**-**	**5**	

CO-PO Mapping

CO Number	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	M	M	M	M	S	M	M	S	M
CO2	M	M	S	S	S	M	S	M	S	M
CO3	M	M	M	M	S	M	S	M	M	S
CO4	S	M	M	M	S	L	S	M	S	S
CO5	M	M	M	S	S	M	S	M	S	S

Level of Correlation between CO and PO	L-LOW	M- MEDIUM	S-STRONG

Tutorial Schedule	Conducting Group Discussion, Class test
Teaching and Learning Methods	Handling classes through chalk & talk method, PPT presentation
Assessment Methods	Attendance, Assignment, CIA I, CIA II and ESE

Designed By	Verified By	Approved By
E .Jamuna	HOD Mr.P Subramaniam	Member Secretary Dr.S.Shahitha

B.Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards								
Course Code	**Course Title**	**Course Type**	**Sem**	**Hours**	**L**	**T**	**P**	**C**
23M5UITP05	**PRACTICAL: PYTHON PROGRAMMING**	**DSC PRACTICAL-V**	**V**	**5**	**-**	**-**	**5**	**3**
Objective	Students Learn how to use Python libraries and modules to solve problems.							

S.No.	List of Experiments / Programs	Knowledge Levels	Sessions
1	Write a program to using variables, constants, I/O statements in Python.	K1	6
2	Write a program using Operators in Python.	K1	6
3	Write a program using Conditional Statements.	K2	6
4	Write a program using Loops.	K3	6
5	Write a program using Jump Statements.	K3	6
6	Write a program using Functions.	K4	6
7	Write a program using Recursion.	K3	6
8	Write a program using Arrays.	K4	6
9	Program using Strings.	K4	6
10	Write a program using Modules.	K5	6
Course Outcome	CO1: Remember the significance of control statements, loops and functions in creating Simple programs.	K1	
	CO2: Understand Interpret the core data structures available in python to store.	K2	
	CO3: Apply the real time applications using python programming language.	K3	
	CO4: Analyze the real time problem using suitable python concepts.	K4	
	CO5: Evaluate the complex problems using appropriate concepts in python.	K5	
Learning Resources			

Text Books	1. Mark summerfield, programming in python 3: a complete introduction to the python Language , Addision-Wesley professional,2009. 2. Martin C. Brown,PYTHON: The complete Reference , McGraw-Hill,2001 3. E.Balagurusamy(2017),"Problem solving and Python Programming", McGraw-Hill,First Edition
Reference Books	1. Wesley J Chun , core Python Application Programming||,Prentice Hall,2012
Website Link	https://www.guru99.com/python-tutorials.html

	L-Lecture	**T-Tutorial**	**P-Practical**	**C-Credit**

B.Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards

Course Code	Course Title	Course Type	Sem	Hours	L	T	P	C
23M5UITP05	**PRACTICAL: PYTHON PROGRAMMING**	**DSC PRACTICAL-V**	**V**	**5**	**-**	**-**	**5**	**3**

CO-PO Mapping

CO Number	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M	M	L	S	S	S	M	S	S	S
CO2	S	M	M	M	M	S	S	M	S	S
CO3	S	M	M	M	M	S	M	M	S	M
CO4	M	M	M	L	S	S	M	S	M	M
CO5	M	M	M	M	M	S	S	S	S	M

Level of Correlation between CO and PO	L-LOW	M-MEDIUM	S-STRONG

Tutorial Schedule	To give more sample programs to related topic
Teaching and Learning Methods	Handling practical session through projector
Assessment Methods	Attendance, Observation, Model Practical(CIA I & CIA II) & ESE

Designed By	**Verified By**	**Approved By**
E.Jamuna	HOD Mr.P Subramaniam	Member Secretary Dr.S.Shahitha

B.Sc. Information Technology– Syllabus LOCF – CBCS with effect from 2023-2024 Onwards								
Course Code	**Course Title**	**Course Type**	**Sem**	**Hours**	**L**	**T**	**P**	**C**
23M5UITC06	**OPERATING SYSTEM**	**DSC THEORY-VI**	**V**	**5**	**5**	**-**	**-**	**5**
Objective	Student's objective of this course is to provide an introduction to the internal operation of modern operating systems.							

Unit	Course Content	Knowledge Levels	Sessions
I	**Introduction:** Definition of Operating System - OS Structures: OS Services - System Calls - Virtual Machines - Process Management: Process Concept - Process Scheduling - Operation on Processes - Co-operating Processes - Inter-process Communication	K1	12
II	**CPU Scheduling**: Basic Concepts - Scheduling Criteria - Scheduling Algorithms - Process Synchronization: The Critical Section Problem - Semaphores - Classical Problems of Synchronization - Critical Regions	K2	12
III	**Deadlocks:** System Model - Deadlock characterization – Methods for Handling Deadlocks Deadlock Prevention - Deadlock avoidance- Deadlock Detection - Recovery from Deadlock	K3	12
IV	**Storage management**: Memory management - Swapping – Contiguous Memory allocation. Paging – Segmentation – Segmentation with Paging –Virtual memory: Demand paging Page replacement – Thrashing. Mass-Storage Structure: Disk Structure-Disk scheduling.	K4	12
V	**File-System Interface**: File Concept-File Attributes-File Operations – Access Methods: Sequential Access – Direct Access –Directory Structure: Single-Level Directory- Two – Level Directory-Tree-Structured Directories- Introducing Shell Programming – Linux General Purpose Commands-Process Oriented Commands – Communication Oriented Commands. **Current Trends *Cloud Operating Systems***	K4	12
	…… Self Study		
Course Outcome	CO1: Remember the Outline the fundamental concepts of an OS	K1	
	CO2:Illustrate the importance of open source operating system commands	K2	
	CO3:Identify and stimulate management activities of operating system	K3	
	CO4: Analyze the various services provided by the operating system.	K4	

	CO5: Evaluate Interpret different problems related to Process, Scheduling, Deadlock, memory and Files	K5	

Learning Resources	
Text Books	1.Abraham Silberschatz, Peter Baer Galvin, Greg Gagne (2012), ―Operating System Concepts‖, 9th edition, Wiley Student Edition
Reference Books	1.Milan Milenkovic (2003), ―Operating System Concepts and Design‖, McGraw Hill. 2. Andrew S. Tanenbaum, (2001), ―Modern Operating Systems‖, 2nd Edition, Prentice Hall of India. 3. Deital and Deital (1990), ―Introduction to Operating System‖, Pearson Education. 4. William Stallings (1997), ―Operating Systems‖, Prentice Hall of India.
Website Link	http://www.tutorialspoint.com/operating_system/ http://www.reallylinux.com/docs/files.shtml http://www.tutorialspoint.com/operating_system/os_linux.htm
Self-Study Material	1.https://www.techopedia.com/definition/26867/cloud-operating-system-cloud-os https://nordvpn.com/cybersecurity/glossary/cloud-operating

	L-Lecture	T-Tutorial	P-Practical	C-Credit

B.Sc. Information System– Syllabus LOCF – CBCS with effect from 2023-2024 Onwards

Course Code	Course Title	Course Type	Sem	Hours	L	T	P	C
23M5UITC06	OPERATING SYSTEM	DSC-THEORY-VI	V	5	5	-	-	5

CO-PO Mapping

CO Number	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	M	S	L	M	S	M	M	S	S
CO2	S	M	M	M	M	S	S	M	S	S
CO3	M	M	M	M	M	S	S	S	S	S
CO4	M	M	M	M	S	S	S	S	S	S
CO5	L	M	S	S	S	S	S	S	S	S

Level of Correlation between CO and PO	L-LOW	M- MEDIUM	S-STRONG

Tutorial Schedule	Conducting Group Discussion, Class test
Teaching and Learning Methods	Handling classes through chalk & talk method, PPT presentation
Assessment Methods	Attendance, Assignment, CIA I, CIA II and ESE

Designed By	Verified By	Approved By
E.Jamuna	HOD Mr.P Subramaniam	Member Secretary Dr.S.Shahitha

B.Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards								
Course Code	**Course Title**	**Course Type**	**Sem**	**Hours**	**L**	**T**	**P**	**C**
23M5UITC07	**COMPUTER GRAPHICS**	**DSC THEORY - VII**	**V**	**5**	**5**	**-**	**-**	**5**
Objective	Students able to Computer Graphic and To familiar with scan and I/O devices.							

Unit	Course Content	Knowledge Levels	Sessions
I	**Overview of graphics Systems**: Video Display Device – Refresh Cathode-Ray tubes Raster – Scan Displays Random – Scan Displays – Color CRT Monitors –Direct view Storage tubes Flat – Panel Displays Three – Dimensional Viewing Devices. Stereoscopic and Virtual – Reality Systems.	K1	12
II	Raster – Scan Systems Video Controller – Random – Scan Systems Video Controller – Random-Scan Systems – **Input device**: Keyboard Mouse – Trackball and Space ball . Joysticks – Data Glove – Digitizers- Image Scanners – Touch Panels – Light pens. Voice Systems – Hard-Copy Devices – Line Drawing Algorithms DDA Algorithms – Circle generating Algorithm Properties of Ellipses	K2	12
III	**Two Dimensional Geometric Transformation**: Basic Transformations - Translation – Rotation – Scaling – Matrix Representations and Homogeneous Coordinates – Other Transformations Reflections **Two Dimensional Viewing** : Windows to view point coordinate Transformations – Clipping Operations – Point Clipping – Line Clipping – Curve Clipping – Text Clipping – Exterior Clipping.	K3	12
IV	**Three Dimensional Concepts:** Three Dimensional Display method – Parallel projection – Depth cueing - visible line and surface – Three Dimensional Geometric and modeling Transformations: Translation – Rotation - Scaling – Composite Transformations. **Three Dimensional Viewing**: Viewing pipeline – Viewing Coordinates – Projections – Parallel Projections – Perspective Projections.	K4	12
V	**Visible Surface Detection Methods** : Classification Visible Surface Detection Algorithms – Back Face Detection – Depth – Buffer Method – A-Buffer Method – Scan line method – Depth sorting method – BSP tree method – Area Subdivision Method. **Current Trends* 3D Modeling***	K5	12
	…… Self Study		
Course	CO1: Remember the basic concepts of Graphics system .	K1	
	CO2:Understand scan system and I/O Devices	K2	

Outcome	CO3: Apply the 2D Transformations.	K3	
	CO4: Analyze the 3D Transformations.	K4	
	CO5: Evaluate the Implement visual surface techniques.	K5	

Learning Resources	
Text Books	1.Donald Hearn &M.Pauline Baker , ―Computer Graphics‖,2nd Edition, 1996
Reference Books	1.John f. Hughes, Andries Van Dam, Morgan Mcguire, David F. Sklar, James D. Foley, Steven K. Feiner, Kurt Akeley, ―Computer Graphics Principles and Practice‖ 3rdEdition, Pearson Education,2014
Website Link	1.www.javatpoint.com/computer-graphics 2.www.taylorfrancis.com
Self-Study Material	1. https://www.javatpoint.com/computer-graphics-3d-modelling-system 2. https://www.fiverr.com/resources/guides/graphic-design/what-is-3d-modeling

	L-Lecture	**T-Tutorial**	**P-Practical**	**C-Credit**

B.Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards

Course Code	**Course Title**	**Course Type**	**Sem**	**Hours**	**L**	**T**	**P**	**C**
23M5UITC07	**COMPUTER GRAPHICS**	**DSC THEORY - VII**	**V**	**5**	**5**	**-**	**-**	**5**

CO-PO Mapping

CO Number	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PSO1**	**PSO2**	**PSO3**	**PSO4**	**PSO5**
CO1	M	S	M	L	S	S	S	S	S	M
CO2	S	M	M	M	S	S	S	M	S	S
CO3	S	M	L	L	S	S	M	S	M	S
CO4	M	S	L	M	S	S	S	S	S	S
CO5	S	S	M	L	M	S	S	S	S	S

Level of Correlation between CO and PO	L-LOW	M- MEDIUM	S-STRONG

Tutorial Schedule	Conducting Group Discussion, Class test
Teaching and Learning Methods	Handling classes through chalk & talk method, PPT presentation
Assessment Methods	Attendance, Assignment, CIA I, CIA II and ESE

Designed By	**Verified By**	**Approved By**
K .Shanmugapriya	HOD Mr.P Subramaniam	Member Secretary Dr.S.Shahitha

B.Sc. Information Technology– Syllabus LOCF – CBCS with effect from 2023-2024 Onward s								
Course Code	**Course Title**	**Course Type**	**Sem.**	**Hours**	**L**	**T**	**P**	**C**
23M6UITC08	**DATA MINING**	**DSC THEORY-VIII**	**VI**	**5**	**5**	**-**	**-**	**5**
Objective	Student can able to identify the underlying concepts and the fundamental data mining methodologies with the ability to formulate and solve problems							

Unit	Course Content	Knowledge Levels	Sessions
I	**Introduction**: Data Mining – Kinds of Data and Patterns to be Mined – Technologies used –Kinds of Applications are Targeted - Major Issues – Data objects and Attribute types – Basic statistical Descriptions of Data-Data Preprocessing : Data Cleaning – Data Integration - Data Reduction -Data Transformation.	K1	12
II	**Association Rules Mining**: Introduction – Frequent Itemset Mining Methods: Apriori Algorithm-Generating Association Rules from Frequent Itemsets-Improving the efficiency of Apriori-A Pattern – Growth Approach for mining Frequent Itemsets-Pattern Evaluation Methods.	K2	12
III	**Classification:** Introduction –Basic concepts – Logistic regression - Decision tree induction–Bayesian classification, Rule–based classification-Model Evaluation and selection.	K3	12
IV	**Cluster Analysis**: Introduction-Requirements for Cluster Analysis - Partitioning Methods: The K-Means method - Hierarchical Method: Agglomerative method - Density based methods: DBSCANEvaluation of Clustering: Determining the Number of Clusters – Measuring Clustering Quality.	K4	12
V	**Outlier Detection**: Outliers and Outlier Analysis – Outlier Detection Methods - Data Visualization: Pixel-oriented visualization – Geometric Projection visualization technique-Icon-based-Hierarchical visualization-Visualizing complex data and relations. **Currents Trends: ***Data mining techniques and applications*****	K5	12
	…… Self Study		
Course Outcome	**CO1:** Outline the fundamentals and the principles of Data Mining	K1	
	CO2: Apply suitable different preprocessing for data mining	K2	
	CO3: Classify data-mining techniques based on the different applications	K3	
	CO4: Analyze the various data mining algorithms with respect to functionality	K4	
	CO5: Recommend appropriate data models for data mining techniques to solve real world problems	K5	

Learning Resources	
Text Books	1. Jiawei Han, Micheline Kamber, Jian Pei, ―Data Mining concepts and techniques‖, 3rd Edition, Elsevier publication, 2012.
Reference Books	1. Ian H. Witten and Eibe Frank, (2005), ―Data Mining: Practical Machine Learning Tools and Techniques (Second Edition)‖, Morgan Kaufmann. 2. Arun K Pujari, ―Data Mining Techniques‖, 10 impression, University Press, 2008.
Website Link	1. http://csed.sggs.ac.in/csed/sites/default/files/WEKA%20Explorer%20Tutorial.pdf 2. https://www.cs.auckland.ac.nz/courses/compsci367s1c/tutorials/IntroductionToWeka .pdf
Self-Study Material	https://ieeexplore.ieee.org/abstract/document/8082090

	L-Lecture	**T-Tutorial**	**P-Practical**	**C-Credit**

B.Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards

Course Code	Course Title	Course Type	Sem	Hours	L	T	P	C
23M6UITC08	DATA MINING	DSC THEORY-VIII	VI	5	5	-	-	5

CO-PO Mapping

CO Number	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	M	M	M	L	S	M	M	S	M
CO2	S	M	M	M	M	S	S	M	S	M
CO3	M	M	M	M	M	S	S	S	S	M
CO4	M	M	M	M	S	S	S	M	S	M
CO5	L	M	M	S	S	S	S	M	S	S

Level of Correlation between CO and PO	L-LOW	M- MEDIUM	S-STRONG

Tutorial Schedule	Conducting Group Discussion, Class test
Teaching and Learning Methods	Handling classes through chalk & talk method, PPT presentation
Assessment Methods	Attendance, Assignment, CIA I, CIA II and ESE

Designed By	Verified By	Approved By
R.Mohanraj	HOD Mr.P Subramaniam	Member Secretary Dr.S.Shahitha

B.Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards								
Course Code	**Course Title**	**Course Type**	**Sem**	**Hours**	**L**	**T**	**P**	**C**
23M6UITP06	**PRACTIAL: DATA MINING**	**DSC PRACTICAL - VI**	**VI**	**5**	**-**	**-**	**5**	**3**
Objective	Students will be able to Understand the data sets, data preprocessing and demonstrate the working of algorithms for data mining.							

S.No.	List of Programs	Knowledge Levels	Sessions
1	Understanding the data	K1	5
2	Visualization Techniques	K2	5
3	Data Preprocessing	K2	5
4	Handling Missing Values	K3	5
5	Data Reduction-Principal Component Analysis	K3	5
6	Data Normalization-Min-Max, Z-score, Decimal Scaling	K3	4
7	Association Rule Mining-Apriori Algorithm	K4	4
8	Classification	K4	4
9	Logistic Regression	K4	4
10	Decision Tree	K4	4
11	Naive Bayesian	K5	3
12	Clustering	K5	3
13	K-Means Clustering	K5	3
14	DBSCAN	K5	3
15	Agglomerative	K5	3
Course Outcome	**CO1:** Understand the real time datasets for analysis	K1	
	CO2: Apply suitable preprocessing for data mining task	K2	
	CO3: Demonstrate data-mining techniques based on the different applications	K3	
	CO4: Analyze the performance evaluation of various data mining algorithms	K4	

	CO5: Prescribe appropriate data models for data mining techniques to solve real world problems	K5	

Learning Resources	
Text Books	1. Jiawei Han, Micheline Kamber, Jian Pei, ―Data Mining concepts and techniques‖, 3rd Edition, Elsevier publication, 2012.
Reference Books	1. Ian H. Witten and Eibe Frank, (2005), ―Data Mining: Practical Machine Learning Tools and Techniques (Second Edition)‖, Morgan Kaufmann 2. Arun K Pujari, ―Data Mining Techniques‖, 10 impression, University Press, 2008. 3. Daniel T. Larose , Chantal D. Larose, "Data mining and Predictive analytics," Second Ed., Wiley Publication, 2015.
Website Link	https://www.rdatamining.com/examples/text-mining https://www.w3schools.com/r/

	L-Lecture	**T-Tutorial**	**P-Practical**	**C-Credit**

B.Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards

Course Code	**Course Title**	**Course Type**	**Sem**	**Hours**	**L**	**T**	**P**	**C**
23M6UITP06	**PRACTICAL: DATA MINING**	**DSC PRACTICAL - VI**	**VI**	**5**	**-**	**-**	**5**	**3**

CO-PO Mapping

CO Number	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PSO1**	**PSO2**	**PSO3**	**PSO4**	**PSO5**
CO1	M	S	M	S	S	S	S	S	M	S
CO2	S	S	S	S	M	S	S	M	S	S
CO3	S	S	S	S	M	S	S	S	S	S
CO4	M	M	S	S	S	S	S	M	S	S
CO5	S	S	M	S	M	M	S	S	M	S

Level of Correlation between CO and PO	L-LOW	M-MEDIUM	S-STRONG

Tutorial Schedule	To give more sample programs to related topic
Teaching and Learning Methods	Handling practical session through projector
Assessment Methods	Attendance, Observation, Model practical’s

Designed By	**Verified By**	**Approved By**
M.Krishnamoorthi	HOD Mr.P Subramaniam	Member Secretary Dr.S.Shahitha

B.Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards								
Course Code	**Course Title**	**Course Type**	**Sem.**	**Hours**	**L**	**T**	**P**	**C**
23M6UITC09	**Data Communication and Networking**	**DSC THEORY-IX**	**VI**	**5**	**5**	**-**	**-**	**5**
Objective	To familiarize the students with the basic taxonomy and terminology of the computer.							

Unit	Course Content	Knowledge Levels	Sessions
I	**Introduction:** Data Communication-**Networks:** Distributed Processing - Network Criteria Physical Structures – Network Models - Categories of Network - Internetwork - The Internet Protocols and Standards – **Network Models:** Layers in the OSI Model - TCP/IP Protocol Suite	K2	12
II	**Data and Signals:** Analog and Digital Data - Analog and Digital Signals - Performance - **Digital Transmission:** Transmission Modes – **Multiplexing:** FDM – WDM - Synchronous TDM Statistical TDM - **Transmission Media:** Guided media - Unguided Media	K2	12
III	**Switching:** Circuit Switched Networks - Datagram Networks - Virtual Circuit Network - **Error Detection and Correction:** Introduction - Block Coding - Linear Block Codes - **Cyclic Codes:** Cyclic Redundancy Check - Checksum. **Data Link Control:** Framing - Flow Control and Error Control - **Noiseless Channel:** Stop-and-wait Protocol	K2	12
IV	**Wired LANs:** Standard Ethernet - GIGABIT Ethernet - Wireless LAN : **Bluetooth Connecting LANs:** Connecting Devices: Passive Hubs - Repeaters - Active Hubs - Bridges - Two Layer Switches - Routers - Three layer Switches - Gateway - **Network Layer:** Internet Protocol: IPv4 – Ipv6-Transition from IPv4 to IPv6	K2	12
V	**Network Layer:** Delivery, Forwarding and Routing - **Unicast Routing Protocols:** Distance Vector Routing - Link state routing - **Future & Current Trends in Computer Networks:** 5G Network: Salient Features - Technology - Applications - Advanced Features - Advantages & Disadvantages - **Internet of Things:** Key Features - Advantages & Disadvantages - IOT Hardware- IOT Technology and Protocols-IOT Common Uses-Applications-Wi-Fi-WiMax Life- Life vs Wifi. **Current Trends-*Data Analytics***	K2	12
	…… Self Study		
Course Outcome	CO1: Understand the fundamental concepts of computer networks and its application areas	K2	
	CO2: Identify and use various networking techniques and components to establish networking connection and transmission	K3	

	CO3: Analyze the services performed by different network layers and recent advancements in networking	K4	
	CO4: Analyze the various networking models, layers, protocols and technologies	K4	
	CO5: Analyze the appropriate networking mechanisms to build a reliable network	K4	

Learning Resources	
Text Books	1. Behrouz and Forouzan,(2006), Data Communication and Networking, 4th Edition,TMH.
Reference Books	1. Jean Walrand (1998), Communication Networks,Second Edition, TataMcGrawHill. 2. Ajit Pal,(2014), Data Communication and Computer Networks, PHI.
Website Link	1. http://www.tutorialspoint.com/data_communication_computer_network/ 2. http://www.slideshare.net/zafar_ayub/data-communication-and-network-11903853 3. http://www.freetechbooks.com/data-communication-and-networks-f31.html
Self-Study Material	1. https://aws.amazon.com/what-is/data-analytics/ **2.**https://nlist.inflibnet.ac.in/search/Record/978-3-8348-2589-6 (N-list)

L-Lecture	**T-Tutorial**	**P-Practical**	**C-Credit**

B.Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards

Course Code	Course Title	Course Type	Sem	Hours	L	T	P	C
23M6UITC09	Data Communication and Networking	DSC THEORY-IX	VI	5	5	-	-	5

CO-PO Mapping

CO Number	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	M	M	M	L	S	M	M	M	M
CO2	S	M	M	M	L	S	M	M	M	L
CO3	M	M	M	M	M	S	S	S	M	M
CO4	M	M	M	M	S	S	S	M	M	M
CO5	L	M	M	S	S	S	S	S	M	M
Level of Correlation between CO and PO				L-LOW		M- MEDIUM			S-STRONG	

Tutorial Schedule	Conducting Group Discussion, Quiz
Teaching and Learning Methods	Handling classes through chalk and talk method
Assessment Methods	Attendance, Assignment, CIA I, CIA II and ESE

Designed By	Verified By	Approved By
D.Vasanthi	HOD Mr.P Subramaniam	Member Secretary Dr.S.Shahitha

S. NO.	SEM	COURSE_CODE	TITLE OF THE COURSE
1	V	23M5UITE01	NATURAL LANGUAGE PROCESSING
2	V	23M5UITE02	ANALYTICS FOR SERVICE INDUSTRY
3	V	23M5UITE03	CRYPTOGRAPHY
4	V	23M5UITE04	BIG DATA ANALYTICS
5	V	23M5UITE05	IOT AND ITS APPLICATION
6	V	23M5UITE06	HUMAN COMPUTER INTERACTION
7	VI	23M6UITE07	ROBOTICS AND ITS APPLICATIONS
8	VI	23M6UITE08	COMPUTATIONAL INTELLIGENCE
9	VI	23M6UITE09	GRID COMPUTING
10	VI	23M6UITE10	TRENDS IN COMPUTING
11	VI	23M6UITE11	AGILE PROJECT MANAGEMENT
12	VI	23M6UITE12	ARTIFICIAL INTELLIGENCE

B.Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards								
Course Code	**Course Title**	**Course Type**	**Sem**	**Hours**	**L**	**T**	**P**	**C**
23M5UITE01	**NATURAL LANGUAGE PROCESSING**	**DSE-THEORY-I**	**V**	**4**	**2**	**2**	**-**	**3**
Objective	Students gaining knowledge about natural language processing and to learn how to apply basic algorithms in this field.							

Unit	Course Content	Knowledge Levels	Sessions
I	**Introduction :** Natural Language Processing tasks in syntax-semantics-and pragmatics – Issue- Applications – The role of machine learning – Probability Basics –Information theory – Collocations -N-gram Language Models – Estimating parameters and smoothing – Evaluating language models.	K1	12
II	**Word level and Syntactic Analysis**: Word Level Analysis: Regular Expressions-Finite-State Automata-Morphological Parsing-Spelling Error Detection and correction-Words and Word classes Part-of Speech Tagging. Syntactic Analysis: Context-free Grammar-Constituency- Parsing Probabilistic Parsing.	K2	12
III	**Semantic analysis and Discourse Processing:** Semantic Analysis: Meaning Representation-Lexical Semantics- Ambiguity-Word Sense Disambiguation. Discourse Processing: cohesion-Reference Resolution- Discourse Coherence and Structure.	K3	10
IV	**Natural Language Generation:** Architecture of NLG Systems-Generation Tasks and Representations- Application of NLG. **Machine Translation:** Problems in Machine Translation. Characteristics of Indian Languages Machine Translation Approaches-Translation involving Indian Languages.	K4	8
V	**Information retrieval and lexical resources:** Information Retrieval: Design features of Information Retrieval Systems-Classical-Non-classical-Alternative Models of Information Retrieval – valuation Lexical Resources: WorldNet Frame Net Stemmers- POS Tagger- Research Corpora SSAS. **Current Trends** ***Deep Learning for Text Classification***	K5	6
	…… Self Study		
Course Outcome	CO1: Remember the fundamental concepts and techniques of natural language processing.	K1	
	CO2: Understand the various techniques in natural processing	K2	
	CO3: Analyze appropriate descriptions, visualizations, and statistics.	K3	
	CO4: Analyze large volume text data generated from a range of real-world applications.	K4	
	CO5: Develop robotic process automation to manage business Processes	K5	

Learning Resources	
Text Books	1. Daniel Jurafsky, James H. Martin, —Speech & language processing‖, Pearson publications. 2. Allen, James. Natural language understanding. Pearson, 1995.
Reference Books	1. Pierre M. Nugues, —An Introduction to Language Processing with Perl and Prolog‖,Springer
Website Link	https://en.wikipedia.org/wiki/Natural_language_processing
Self-Study Material	https://towardsdatascience.com/deep-learning-techniques-for-text-classification-78d9dc40bf7c?gi=f79dc9c2fa1f https://machinelearningmastery.com/best-practices-document-classification-deep-learning/

L-Lecture	**T-Tutorial**	**P-Practical**	**C-Credit**

B.Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards

Course Code	Course Title	Course Type	Sem	Hours	L	T	P	C
23M5UITE01	**NATURAL LANGUAGE PROCESSING**	**DSE THEORY-I**	**V**	**4**	**2**	**2**	**-**	**3**

CO-PO Mapping

CO Number	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	S	S	S	S	S	S	S	S	S
CO2	S	M	S	M	S	M	S	S	S	S
CO3	M	S	S	S	M	S	S	S	S	S
CO4	S	S	S	S	S	S	M	S	S	M
CO5	S	S	S	M	S	S	S	S	S	S

Level of Correlation between CO and PO	L-LOW	M- MEDIUM	S-STRONG

Tutorial Schedule	Conducting Group Discussion, Class test
Teaching and Learning Methods	Handling classes through chalk & talk method, PPT presentation
Assessment Methods	Attendance, Assignment, CIA I, CIAII and ESE

Designed By	Verified By	Approved By
K.Shunmugapriya	HOD Mr.P Subramaniam	Member Secretary Dr.S.Shahitha

B.Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards								
Course Code	**Course Title**	**Course Type**	**Sem**	**Hours**	**L**	**T**	**P**	**C**
23M5UITE02	**ANALYTICS FOR SERVICE INDUSTRY**	**DSE-THEORY-I**	**V**	**4**	**2**	**2**	**-**	**3**
Objective	Enable to student Recognize challenges in dealing with data sets in service industry.							

Unit	Course Content	Knowledge Levels	Sessions
I	**Healthcare Analytics :** Introduction to Healthcare Data Analytics- Electronic Health Records– Components of EHR- Coding Systems- Benefits of EHR- Barrier to Adopting HER Challenges-Phenotyping Algorithms. Biomedical Image Analysis and Signal Analysis- Genomic Data Analysis for Personalized Medicine. Review of Clinical Prediction Models.	K1	12
II	**Healthcare Analytics Applications :** Applications and Practical Systems for Healthcare– Data Analytics for Pervasive Health- Fraud Detection in Healthcare- Data Analytics for Pharmaceutical Discoveries- Clinical Decision Support Systems- Computer-Assisted Medical Image Analysis Systems- Mobile Imaging and Analytics for Biomedical Data.	K2	12
III	**HR Analytics:** Evolution of HR Analytics- HR information systems and data sources- HR Metric and HR Analytics- Evolution of HR Analytics- HR Metrics and HR Analytics- Intuition versus analytical thinking- HRMS/HRIS and data sources- Analytics frameworks like LAMP- HCM:21(r) Model.	K3	10
IV	**Performance Analysis:** Predicting employee performance- Training requirements- evaluating training and development- Optimizing selection and promotion decisions.	K4	8
V	**Tourism and Hospitality Analytics:** Guest Analytics – Loyalty Analytics – Customer Satisfaction – Dynamic Pricing – optimized disruption management – Fraud detection in payments. **Current trends:*** Predictive Analytics*	K5	6
	…… Self Study		
Course Outcome	CO1: Understand and critically apply the concepts and methods of business analytics.	K2	
	CO2: Identify, model and solve decision problems in different settings.	K2	
	CO3: Identify appropriate courses of action for a given managerial situation whether a problem or an opportunity.	K3	
	CO4: Create viable solutions to decision making problems.	K4	

	CO5: Apply the sense of ethical decision-making and commitment to the long-run welfare of both organizations.	K5

Learning Resources	
Text Books	1. Chandan K. Reddy and Charu C Aggarwal, —Healthcare data analytics‖, Taylor & Francis, 2015.
Reference Books	1. Hui Yang and Eva K. Lee, —Healthcare Analytics: From Data to Knowledge to Healthcare Improvement, Wiley, 2016. 2. Fitz-enzJac, Mattox II John (2014), —Predictive Analytics for Human Resources‖, Wiley, ISBN- 1118940709.
Website Link	1. https://www.ukessays.com/essays/marketing/contemporary-issues-in-marketing-marketing-essay.php 2. https://yourbusiness.azcentral.com/examples-contemporary-issues-marketing-field-26524.html
Self-Study Material	https://www.ibm.com/topics/predictive-analytics

	L-Lecture	**T-Tutorial**	**P-Practical**	**C-Credit**

B.Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards

Course Code	Course Title	Course Type	Sem	Hours	L	T	P	C
23M5UITE02	**ANALYTICS FOR SERVICE INDUSTRY**	**DSE-THEORY-I**	**V**	**4**	**2**	**2**	**-**	**3**

CO-Mapping

CO Number	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	S	S	S	S	S	S	S	M	S
CO2	S	M	S	S	S	S	M	S	M	S
CO3	M	S	S	S	S	S	S	S	M	S
CO4	S	S	S	S	S	M	S	S	S	M
CO5	S	S	S	S	S	S	M	S	S	S
Level of Correlation between CO and PO				L-LOW		M- MEDIUM			S-STRONG	

Tutorial Schedule	Conducting Group Discussion, Class test
Teaching and Learning Methods	Handling classes through chalk & talk method, PPT presentation
Assessment Methods	Attendance, Assignment, CIA I, CIA II and ESE

Designed By	Verified By	Approved By
K.Shunmugapriya	HOD Mr.P Subramaniam	Member Secretary Dr.S.Shahitha

B.Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards								
Course Code	**Course Title**	**Course Type**	**Sem**	**Hours**	**L**	**T**	**P**	**C**
23M5UITE03	**CRYPTOGRAPHY**	**DSE THEORY-I**	**V**	**4**	**2**	**2**	**-**	**3**

Objective	Students gain the knowledge about fundamentals of Cryptography and Design security.		
Unit	**Course Content**	**Knowledge Levels**	**Sessions**
I	**Introduction:** The OSI security Architecture – Security Attacks Security Mechanisms – Security Services – A model for network Security.	K1	12
II	**Classical Encryption Techniques:** Symmetric cipher model – Substitution Techniques: Caesar Cipher– Mono alphabetic cipher- Play fair cipher – Poly Alphabetic Cipher – Transposition techniques – Stenography	K2	12
III	**Block Cipher and DES**: Block Cipher Principles – DES – The Strength of DES –RSA: The RSA algorithm.	K3	10
IV	**Network Security Practices**: IP Security overview - IP Security architecture – Authentication Header. Web Security: Secure Socket Layer and Transport Layer Security – Secure Electronic Transaction.	K4	8
V	Intruders – Malicious software – Firewalls. **Current Trends *Crypto Currency***	K5	6
	…… Self Study		
Course Outcome	CO1: Analyze the vulnerabilities in any computing system and hence be able to design a security solution.	K1	
	CO2:Apply the different cryptographic operations of symmetric cryptographic algorithms	K2	
	CO3:Apply the different cryptographic operations of public key cryptography	K3	
	CO4: Apply the various Authentication schemes to simulate Different applications.	K4	
	CO5:Understand various Security practices and System security standards	K5	

Learning Resources	
Text Books	1.William Stallings, ―Cryptography and Network Security Principles and Practices‖.
Reference Books	1. Behrouz A. Foruzan, ―Cryptography and Network Security‖, Tata McGraw-Hill, 2007. 2 AtulKahate, ―Cryptography and Network Security‖, Second Edition, 2003,TMH. 3 M.V. Arun Kumar, ―Network Security ‖, 2011, First Edition,USP.

Website Link	https://www.tutorialspoint.com /cryptography/ https://gpgtools.tenderapp.com/kb/how-to/introduction-to-cryptography			
Self-Study Material	1. https://www.investopedia.com/tech/explaining-crypto-cryptocurrency/ 2. https://www.geeksforgeeks.org/what-is-a-cryptocurrency/			
	L-Lecture	**T-Tutorial**	**P-Practical**	**C-Credit**

B.Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards

Course Code	Course Title	Course Type	Sem	Hours	L	T	P	C
23M5UITE03	**CRYPTOGRAPHY**	**DSE THEORY-I**	**V**	**4**	**2**	**2**	**-**	**3**

CO-Mapping

CO Number	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	S	S	S	S	S	S	S	M	S
CO2	S	M	S	S	S	S	M	S	M	S
CO3	M	S	S	S	S	S	S	S	M	S
CO4	S	S	S	S	S	M	S	S	S	M
CO5	S	S	S	S	S	S	M	S	S	S

Level of Correlation between CO and PO	L-LOW	M- MEDIUM	S-STRONG

Tutorial Schedule	Conducting Group Discussion, Class test
Teaching and Learning Methods	Handling classes through chalk & talk method, PPT presentation
Assessment Methods	Attendance, Assignment, CIA I, CIA II and ESE

Designed By	Verified By	Approved By
K.Shunmugapriya	HOD P Subramaniam	Member Secretary Dr.S.Shahitha

B.Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards								
Course Code	**Course Title**	**Course Type**	**Sem**	**Hours**	**L**	**T**	**P**	**C**
23M5UITE04	**BIG DATA ANALYTICS**	**DSE THEORY-II**	**V**	**4**	**2**	**2**	**-**	**3**
Objective	Student gain the knowledge about Big Data Platform and its Use cases, Map Reduce Jobs.							

Unit	Course Content	Knowledge Levels	Sessions
I	**Introduction**: Evolution of Big data — Best Practices for Big data Analytics — Big data characteristics — Validating — The Promotion of the Value of Big Data — Big Data Use Cases- Characteristics of Big Data Applications — Perception and Quantification of Value -Understanding Big Data Storage — A General Overview of High-Performance Architecture — HDFS MapReduce and YARN — Map Reduce Programming Model	K1	12
II	**Advanced Analytical Theory and Methods**: Overview of Clustering - Kmeans - Use Cases — Overview of the Method — Determining the Number of Clusters — Diagnostics — Reasons to Choose and Cautions . **Classification:** Decision Trees — Overview of a Decision Tree — The General Algorithm — Decision Tree Algorithms — Evaluating a Decision Tree — Decision Trees in R — Naïve Bayes — Bayes? Theorem — Naïve Bayes Classifier	K2	12
III	**Advanced Analytical Theory and Methods**: Association Rules — Overview — Apriori Algorithm — Evaluation of Candidate Rules — Applications of Association Rules — Finding Association& finding similarity — **Recommendation System:** Collaborative Recommendation Content Based Recommendation — Knowledge Based Recommendation Hybrid Recommendation Approaches.	K3	10
IV	Introduction to Streams Concepts — Stream Data Model and Architecture — Stream Computing, Sampling Data in a Stream — Filtering Streams — Counting Distinct Elements in a Stream — Estimating moments — Counting oneness in a Window — Decaying Window — Real time Analytics Platform(RTAP) applications — Case Studies — Real Time Sentiment Analysis, Stock Market Predictions. Using Graph Analytics for Big Data: Graph Analytics	K4	8
V	**NoSQL Databases** : Schema-less Models?: Increasing Flexibility for Data Manipulation-Key Value Stores- Document Stores — Tabular Stores — Object Data Stores — Graph Databases Hive — Sharding —Hbase — Analyzing big data with twitter — Big data for E-Commerce Big data for blogs	K5	6

	— Review of Basic Data Analytic Methods using R. **Current trends *** Big Data in E-commerce****		
	…… Self Study		
Course Outcome	CO1: Remember the Work with big data tools.	K1	
	CO2: Analyze data by utilizing clustering.	K4	
	CO3: Learn and apply different mining algorithms.	K3	
	CO4: Analysis the analytics on data streams.	K4	
	CO5: Evaluate NoSQL databases and management.	K5	

Learning Resources	
Text Books	1.AnandRajaraman and Jeffrey David Ullman, ―Mining of Massive Datasets‖, Cambridge University Press, 2012.
Reference Books	1.David Loshin, ―Big Data Analytics: From Strategic Planning to Enterprise Integration with Tools, Techniques, NoSQL, and Graph‖, Morgan Kaufmann/El sevier Publishers, 2013.
Website Link	1.https://www.simplilearn.com 2.https://www.sas.com/en_us/insights/analytics/big-data-analytics.html
Self-Study Material	1. https://blog.lengow.com/price-intelligence/big-data-in-e-commerce-explanation-anduse-cases/

	L-Lecture	**T-Tutorial**	**P-Practical**	**C-Credit**

B.Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards

Course Code	Course Title	Course Type	Sem	Hours	L	T	P	C
23M5UITE04	**BIG DATA ANALYTICS**	**DSE THEORY-II**	**V**	**4**	**2**	**2**	**-**	**3**

CO-PO Mapping

CO Number	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	M	S	S	S	S	S	S	S	S
CO2	M	S	S	S	S	S	M	S	S	M
CO3	S	S	S	S	M	S	S	M	S	S
CO4	S	S	S	S	S	M	S	S	S	S
CO5	S	M	S	S	S	S	S	S	M	S
Level of Correlation between CO and PO				L-LOW		M- MEDIUM			S-STRONG	

Tutorial Schedule	Conducting Group Discussion, Class test
Teaching and Learning Methods	Handling classes through chalk & talk method, PPT presentation
Assessment Methods	Attendance, Assignment, CIA I, CIA II and ESE

Designed By	**Verified By**	**Approved By**
K.Shunmugapriya	HOD P Subramaniam	Member Secretary Dr.S.Shahitha

B.Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards								
Course Code	**Course Title**	**Course Type**	**Sem.**	**Hours**	**L**	**T**	**P**	**C**
23M5UITE05	**Internet of Things and its Applications**	**DSE THEORY-II**	**V**	**4**	**2**	**2**	**-**	**3**
Objective	Students can able to IoT applications in different domain and be able to analyze their performance							

Unit	Course Content	Knowledge Levels	Sessions
I	**IoT& Web Technology:** The Internet of Things Today- Time for Convergence- Towards the IoT Universe- Internet of Things Vision- IoT Strategic Research and Innovation Directions- IoT Applications- Future Internet Technologies- Infrastructure Networks and Communication- Processes- Data Management Security- Privacy & Trust- Device Level Energy Issues- IoT Related Standardization- Recommendations on Research Topics.	K1	10
II	**M2M to IoT** : A Basic Perspective– Introduction, Some Definitions- M2M Value Chains-IoT Value Chains- An emerging industrial structure for IoT- The international driven global value chain and global information monopolies. M2M to IoT-An Architectural Overview: Building an architecture- Main design principles and needed capabilities- An IoT architecture outline standards considerations.	K2	10
III	**IoT Architecture, State of the Art** – Introduction- State of the art Architecture. -Reference Model- Introduction-Reference Model and architecture- IoT reference Model- IoT Reference Architecture Introduction- Functional View- Information View-Deployment and Operational View-Other Relevant architectural views	K3	10
IV	**IoT Applications for Value Creations:** Introduction- IoT applications for industry- Future Factory Concepts- Brownfield IoT- Smart Objects- Smart Applications-Four Aspects in your Business to Master IoT- Value Creation from Big Data and Serialization- IoT for Retailing Industry- IoT For Oil and Gas Industry- Opinions on IoT Application and Value for Industry Home Management	K4	9

V	**Internet of Things Privacy, Security and Governance:** Introduction- Overview of Governance-Privacy and Security Issues- Contribution from FP7 Projects- Security- Privacy and Trust in IoT-Data- Platforms for Smart Cities- First Steps Towards a Secure Platform-Smartie Approach. Data Aggregation for the IoT in Smart Cities- Security. **Current Trends:** Satellite IoT: A new paradigm in IoT connectivity	K5	9
	…… Self Study		
Course Outcome	**CO1:** Remembering the Use of Devices, Gateways and Dat Management in IoT	K1	
	CO2: Understanding the IoT applications in different domain an be able to analyze their performance	K2	
	CO3: Apply the basic IoT applications on embedded platform	K3	
	CO4: Analysis the knowledge on Industry Internet of Things	K4	
	CO5: Design the privacy and Security issues in IoT	K5	

Learning Resources	
Text Books	1. Vijay Madisetti and ArshdeepBahga, "Internet of Things: (A Hands-on Approach)", Universities Press (INDIA) Private Limited 2014, 1st Edition.
Reference Books	1.Michael Miller, "The Internet of Things: How Smart TVs, Smart Cars, Smart Homes, and Smart Cities Are Changing the Worldǁ", kindle version. 2. Francis daCosta, "Rethinking the Internet of Things: A Scalable Approach to Connecting Everything", Apress Publications 2013, 1st Edition.
Website Link	1. https://www.simplilearn.com 2. https://www.javatpoint.com 3. https://www.w3schools.com
Self Study Link	https://iot.eetimes.com/satellite-iot-a-new-paradigm-in-iot-connectivity/

L-Lecture	**T-Tutorial**	**P-Practical**	**C-Credit**

B.Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards								
Course Code	**Course Title**	**Course Type**	**Sem**	**Hours**	**L**	**T**	**P**	**C**
23M5UITE05	**Internet of Things and its Applications**	**DSE THEORY-II**	**V**	**4**	**2**	**2**	**-**	**3**

CO-PO Mapping

CO Number	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	M	M	M	L	S	M	M	S	S
CO2	S	M	M	M	M	S	M	M	S	S
CO3	M	M	M	M	M	S	M	S	S	S
CO4	M	M	M	M	S	S	S	M	S	S
CO5	L	M	M	S	S	S	S	M	S	S

Level of Correlation between CO and PO	L-LOW	M- MEDIUM	S-STRONG

Tutorial Schedule	Conducting Group Discussion, Class test
Teaching and Learning Methods	Handling classes through chalk & talk method, PPT presentation
Assessment Methods	Attendance, Assignment, CIA I, CIA II and ESE

Designed By	Verified By	Approved By
M.Sudha	HOD P Subramaniam	Member Secretary Dr.S.Shahitha

B.Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards								
Course Code	**Course Title**	**Course Type**	**Sem**	**Hours**	**L**	**T**	**P**	**C**
23M5UITE06	**HUMAN COMPUTER INTERACTION**	**DSE THEORY -II**	**V**	**4**	**2**	**2**	**-**	**3**
Objective	To learn about the foundations of Human Computer Interaction and student to learn HCI models and theories.							

Unit	Course Content	Knowledge Levels	Sessions
I	**Foundations Of HCI :**The Human: I/O channels – Memory- Reasoning and problem solving- The Computer: Devices – Memory – processing and networks. **Interaction:** Models – frameworks – Ergonomics – styles –elements – interactivity- Paradigms. - Case Studies.	K1	10
II	**Design & Software Process: Interactive Design**:Basics – process – scenarios **Navigation:** screen design Iteration and prototyping.HCI in software process- Software life cycle – usability engineering – Prototyping in practice – design rationale. **Design rules:** Principles- standards- guidelines- rules. Evaluation Techniques – Universal Design	K2	10
III	**Models and Theories:** HCI Models . **Cognitive models**:- Socio-Organizational issues and stakeholder requirements Communication and collaboration models-Hypertext, Multimedia and WWW.	K3	10
IV	**Mobile HCI:** Mobile Ecosystem- Platforms- Application frameworks **Types of Mobile Applications**: Widgets- Applications- Games Mobile Information Architecture. **Mobile 2.0 Mobile Design**: Elements of Mobile Design- Tools. - Case Studies	K4	9
V	**Web Interface Design:** Designing Web Interfaces – Drag & Drop, Direct Selection, Contextual Tools, Overlays, Inlays and Virtual Pages, Process Flow - Case Studies.**Currends Trends:*** Wearable devices *	K5	9
	…… Self Study.		
Course Outcome	**CO1:** Remember the fundamentals of HCI.	K1	
	CO2: Understand the design and software process technologies.	K2	
	CO3: Analysis the HCI models and theories.	K3	
	CO4: Apply the Mobile Ecosystem, types of Mobile Applications, mobile Architecture and design.	K4	
	CO5: Evaluate the various types of Web Interface Design.	K5	
Learning Resources			

Text Books	1. Alan Dix, Janet Finlay, Gregory Abowd, Russell Beale, ‖Human -Computer Interaction‖, III Edition, Pearson Education, 2004 (UNIT I, II & III) 2. Brian Fling, —‖Mobile Design and Development‖, I Edition, O_Reilly Media Inc., 2009(UNIT–IV) 3. Bill Scott and Theresa Neil, —Designing Web Interfaces‖, First Edition, O_Reilly, 2009. (UNIT-V)
Reference Books	1. Shneiderman, —Designing the User Interface: Strategies for Effective Human-Computer Interaction‖, V Edition, Pearson Education.
Website Link	https://www.interaction-design.org/literature/topics/human-computer-interaction https://link.springer.com/10.1007/978-0-387-39940-9_192 https://en.wikipedia.org/wiki/Human%E2%80%93computer_interaction
Self-Study Material	https://medium.com/@ap4916388/human-computer-interaction-through-wearable-sensors-challenges-and-opportunities-c9149cd5ddde

	L-Lecture	**T-Tutorial**	**P-Practical**	**C-Credit**

B.Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards

Course Code	Course Title	Course Type	Sem	Hours	L	T	P	C
23M5UITE06	**HUMAN COMPUTER INTERACTION**	**DSE THEORY -II**	**V**	**4**	**2**	**2**	**-**	**3**

CO-PO Mapping

CO Number	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	M	M	M	L	S	M	M	M	L
CO2	S	M	M	M	M	S	M	M	M	L
CO3	M	M	M	M	M	M	M	M	M	M
CO4	M	M	M	M	S	M	M	M	M	M
CO5	L	M	M	S	S	L	M	M	M	S

Level of Correlation between CO and PO	L-LOW	M- MEDIUM	S-STRONG

Tutorial Schedule	Conducting Group Discussion, Class test
Teaching and Learning Methods	Handling classes through chalk & talk method, PPT presentation
Assessment Methods	Attendance, Assignment, CIA I, CIA II and ESE

Designed By	Verified By	Approved By
Dr.A.Anushapriya	HOD P Subramaniam	Member Secretary Dr.S.Shahitha

B.Sc. Information Technology– Syllabus LOCF – CBCS with effect from 2023-2024 Onwards								
Course Code	**Course Title**	**Course Type**	**Sem**	**Hours**	**L**	**T**	**P**	**C**
23M6UITE07	**Robotics and Its Applications**	**DSE THEORY-III**	**VI**	**5**	**3**	**2**	**-**	**3**
Objective	Student to understand the robotics fundamentals concept of Path Planning, Vision system							

Unit	Course Content	Knowledge Levels	Sessions
I	**Introduction:** Introduction- brief history- components of robotics- classification- workspace- work-envelop- motion of robotic arm- end-effectors and its types- service robot and its application- Artificial Intelligence in Robotics.	K1	12
II	**Actuators and sensors** :Types of actuators- stepper-DC- servo-and brushless motors- model of a DC servo motor-types of transmissions-purpose of sensor-internal and external sensor common sensors-encoders tachometers-strain gauge based force torque sensor- proximity and distance measuring sensors **Kinematics of robots:** Representation of joints and frames- frames transformation, homogeneous matrix-D- H matrix. **Forward and Inverse Kinematics**: Two link planar (RR) and spherical robot (RRP).	K2	12
III	**Localization:** Self-localizations and mapping - Challenges in localizations – IR based localizations – vision based localizations – Ultrasonic based localizations - GPS localization systems.	K3	12
IV	**Path Planning**: Introduction, path planning-overview- road map path planning-cell decomposition path planning potential field path planning-obstacle avoidance-case studies. **Vision system**: Robotic vision systems-image representation-object recognition and categorization- depth measurement- image data compression visual inspection-software considerations	K4	12
V	**Application:** Ariel robots-collision avoidance robots for agriculture-mining-exploration-underwater-civilian- and military applications-nuclear applications-space Applications-Industrial robots-artificial intelligence in robots-application of robots in material handling- continuous arc welding-spot welding-spray painting- assembly operation-cleaning.***Current trends** Advanced Applications of Industrial Robotics: New Trends and Possibilities*****	K5	12
	…… Self Study		
Course Outcome	**CO1:** remember the different physical forms of robot architectures.	K1	
	CO2: understand the Kinematically model simple manipulator and mobile robots.	K2	

	CO3: apply the Mathematically describe a kinematic robot system	K3	
	CO4: Analyze the manipulation and navigation problem.	K4	
	CO5: Analysis the Program robotics algorithms related to kinematics, control, optimization, and uncertainty.	K4	

Learning Resources	
Text Books	1. Richared D.Klafter. Thomas Achmielewski and MickaelNegin, Robotic Engineering and Integrated Approach, Prentice Hall India-Newdelhi-2001. 2. SaeedB.Nikku, Introduction to robotics, analysis, control and applications, Wiley-India, 2 nd edition 2011.
Reference Books	1. Industrial robotic technology-programming and application by M.P.Groover et.al, McGrawhill2008 2. Robotics technology and flexible automation by S.R.Deb, THH-2009.
Website Link	https://www.mdpi.com/2076-3417/12/1/135 https://www.tutorialspoint.com/artificial_intelligence/artificial_int elligence_robotics. https://www.geeksforgeeks.org/robotics-introduction/

	L-Lecture	**T-Tutorial**	**P-Practical**	**C-Credit**

B.Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards

Course Code	Course Title	Course Type	Sem	Hours	L	T	P	C
23M6UITE07	**Robotics and Its Applications**	**DSE THEORY-III**	**VI**	**5**	**3**	**2**	**-**	**3**

CO-PO Mapping

CO Number	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	M	M	M	L	S	M	M	S	S
CO2	S	M	M	M	M	S	S	M	S	S
CO3	M	M	M	M	M	S	S	S	S	S
CO4	M	M	M	M	S	S	S	M	S	S
CO5	L	M	M	S	S	S	S	M	S	S

Level of Correlation between CO and PO	L-LOW	M- MEDIUM	S-STRONG

Tutorial Schedule	Conducting Group Discussion, Class test
Teaching and Learning Methods	Handling classes through chalk & talk method, PPT presentation
Assessment Methods	Attendance, Assignment, CIA I, CIA II and ESE

Designed By	**Verified By**	**Approved By**
M.Kalaiselvi	HOD Mr.P Subramaniam	Member Secretary Dr.S.Shahitha

B.Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards								
Course Code	**Course Title**	**Course Type**	**Sem.**	**Hours**	**L**	**T**	**P**	**C**
23M6UITE08	**COMPUTATIONAL INTELLIGENCE**	**DSC THEORY-III**	**VI**	**5**	**3**	**2**	**-**	**3**
Objective	Enable to student apply the concepts of Neural Network and its functions.							

Unit	Course Content	Knowledge Levels	Sessions
I	**Introduction to AI:** Problem formulation – AI Applications – Problems – State Space and Search – Production Systems – Breadth First and Depth First – Travelling Salesman Problem – **Heuristic search techniques**: Generate and Test – Types of Hill Climbing.	K1	12
II	**Fuzzy Logic Systems:** Notion of fuzziness – Operations on fuzzy sets – T- norms and other aggregation operators – Basics of Approximate Reasoning – Compositional Rule of Inference – Fuzzy Rule Based Systems – Schemes of Fuzzification – Inferencing – Defuzzification – Fuzzy Clustering – fuzzy rule-based classifier.	K2	12
III	**Neural Networks**: What is Neural Network-Learning rules and various activation functions-Single layer Perceptions-Back Propagation networks-Architecture of Back propagation (BP) Networks-Back propagation Learning- Variation of Standard Back propagation Neural Network-Introduction to Associative Memory- Adaptive Resonance theory and Self Organizing Map-Recent Applications	K3	12
IV	**Artificial Neural Networks**: Fundamental Concepts –Basic Models of Artificial Neural Networks – Important Terminologies of ANNs – McCulloch-Pitts Neuron – Linear Separability – Hebb Network.	K4	12
V	**Genetic Algorithm**: Introduction – Biological Background – Genetic Algorithm Vs Traditional Algorithm – Basic Terminologies in Genetic Algorithm – Simple GA – General Genetic Algorithm – Operators in Genetic Algorithm . ***Currents Trends:** Quantum AI*****	K5	12
	…… Self Study		
Course Outcome	CO1: Remember the fundamentals of artificial intelligence.	K1	
	CO2: understand the fuzzy logic sets and membership Function and defuzzification techniques.	K2	
	CO3: Analysis the concepts of Neural Network and analyze and apply the learning techniques	K3	

	CO4: Apply the artificial neural networks and its Applications.	K4	
	CO5: Evaluate the concept of Genetic Algorithm and Analyze the optimization problems using GAs.	K5	

Learning Resources	
Text Books	1. S.N. Sivanandam and S.N. Deepa, ―Principles of Soft Computing‖, 2nd Edition, Wiley India Pvt. Ltd.
Reference Books	1.F. Martin, Mc neill, and Ellen Thro, ―Fuzzy Logic: A Practical approach‖, AP Professional, 2000. Chin Teng Lin, C. S. George Lee,‖ Neuro-Fuzzy Systems‖, PHI
Website Link	1.https://www.javatpoint.com/artificial-intelligence-tutorial 2.https://www.w3schools.com/ai/
Self-study Material	https://www.forbes.com/sites/bernardmarr/2024/02/19/the-biggest-ai-trends-in-the-10-years/?sh=f595950f8b26

L-Lecture	**T-Tutorial**	**P-Practical**	**C-Credit**

B.Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards

Course Code	Course Title	Course Type	Sem.	Hours	L	T	P	C
23M6UITE08	**COMPUTATIONAL INTELLIGENCE**	**DSC THEORY-III**	**VI**	**5**	**3**	**2**	**-**	**3**

CO-PO Mapping

CO Number	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	M	M	S	L	S	M	M	S	S
CO2	M	M	M	M	M	S	S	M	S	S
CO3	S	M	M	M	M	S	S	S	M	S
CO4	S	M	M	M	S	S	S	M	S	S
CO5	S	M	M	S	S	S	M	M	L	M

Level of Correlation between CO and PO	L-LOW	M- MEDIUM	S-STRONG

Tutorial Schedule	Conducting Group Discussion, Class test
Teaching and Learning Methods	Handling classes through chalk & talk method, PPT presentation
Assessment Methods	Attendance, Assignment, CIA I, CIA II and ESE

Designed By	Verified By	Approved By
N.Ramya	HOD P Subramaniam	Member Secretary Dr.S.Shahitha

B.Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards								
Course Code	**Course Title**	**Course Type**	**Sem**	**Hours**	**L**	**T**	**P**	**C**
23M6UITE09	**GRID COMPUTING**	**DSE THEORY-III**	**VI**	**5**	**3**	**2**	**-**	**3**
Objective	To learn the basic construction and application of Grid computing and student to learn various type of Grid Architecture.							

Unit	Course Content	Knowledge Levels	Sessions
I	**Introduction:** Early Grid Activity- Current Grid Activity- Overview of Grid Business areas- Grid Applications- Grid Infrastructures.	K1	12
II	**Grid Computing organization and their Roles**: Organizations Developing Grid Standards- Best Practice Guidelines- Global Grid Forum (GCF)- #Organization Developing Grid Computing Toolkits and Framework#- Organization and building and using grid based solutions to solve computing- commercial organization building and Grid Based solutions.	K2	12
III	**Grid Computing Anatomy**: The Grid Problem- The conceptual of virtual organizations-# Grid Architecture # and relationship to other distributed technology.	K3	12
IV	**The Grid Computing Road Map**: Autonomic computing- Business on demand and infrastructure virtualization- Service-Oriented Architecture and Grid- #Semantic Grids#.	K4	12
V	**Merging the Grid services Architecture with the Web Services Architecture:** Service-Oriented Architecture- Web Service Architecture- #XML messages and Enveloping#- Service message description Mechanisms- Relationship between Web Services and Grid Services- Web services Interoperability and the role of the WS-I Organization.**Current Trends:* Datafication***	K5	12
	…… Self Study		
Course Outcome	CO1: Understand the basic elements and concepts of Grid computing.	K2	
	CO2: Understand the Grid computing toolkits and Framework.	K2	
	CO3: Understand the concepts of Anotomy of Grid Computing.	K2	
	CO4: Understand the concept of service oriented architecture.	K2	
	CO5: Gain knowledge on grid and web service architecture	K3	

Learning Resources	
Text Books	1. Joshy Joseph and Craig Fellenstein, Grid computing, Pearson / IBM Press, PTR, 2004.
Reference Books	1. Ahmer Abbas and Graig computing, A Practical Guide to technology and applications, Charles River Media, 2003.

Website Link	1. https://en.wikipedia.org/wiki/Grid_computing 2. https://link.springer.com/chapter/10.1007/978-1-84882-409-6_4 3. https://www.redbooks.ibm.com/redbooks/pdfs/sg246778.pdf
Self-study Link	https://www.purpleslate.com/datafication-the-future-tense-of-data-analytics/

	L-Lecture	**T-Tutorial**	**P-Practical**	**C-Credit**

B.Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards

Course Code	Course Title	Course Type	Sem	Hours	L	T	P	C
23M6UITE09	**GRID COMPUTING**	**DSE THEORY-III**	**VI**	**5**	**3**	**2**	**-**	**3**

CO-PO Mapping

CO Number	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	M	M	M	S	S	M	S	M	M
CO2	S	S	M	M	S	S	S	M	M	S
CO3	S	S	S	S	S	S	S	M	S	S
CO4	S	S	M	M	S	S	S	S	M	M
CO5	S	S	M	M	S	S	S	M	M	S

Level of Correlation between CO and PO	L-LOW	M- MEDIUM	S-STRONG

Tutorial Schedule	Conducting Group Discussion, Class test
Teaching and Learning Methods	Handling classes through chalk & talk method, PPT presentation
Assessment Methods	Attendance, Assignment, CIA I, CIA II and ESE

Designed By	Verified By	Approved By
N.Ramya	HOD P Subramaniam	Member Secretary Dr.S.Shahitha

B.Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards								
Course Code	**Course Title**	**Course Type**	**Sem.**	**Hours**	**L**	**T**	**P**	**C**
23M6UITE10	**TRENDS IN COMPUTING**	**DSC THEORY-IV**	**VI**	**5**	**3**	**2**	**-**	**3**
Objective	Student can able to Learning current trends in various computer science and information technology fields.							

Unit	Course Content	Knowledge Levels	Sessions
I	**Era of Cloud Computing**: Introduction – Components of Cloud Computing – Cloud Types- Private-Public and Hybrid clouds – Limitations of the Cloud **-Virtualization:** Structure and Mechanisms.	K1	12
II	**Cloud computing Services:** Software as a Service(SaaS) – Platform as a Service(PaaS)- Infrastructure as a Service(IaaS)- Database as a Service (DBaaS)- Recent Trends in cloud computing and Standards-**Data Security in Cloud**: Risks and Challenges with Cloud Data- Security as a Service**.**	K2	12
III	**Edge Computing**: Edge Computing and Its Essentials: Introduction- Edge Computing Architecture- Advantages and Limitations of Edge- Computing Systems- Edge Computing Interfaces and Devices - **Edge Analytics**: Edge Data Analytics – Potential of Edge Analytics – Architecture of Edge Analytics – Case study.	K3	12
IV	**Edge Data storage Security**: Edge-Based Attack Detection and Prevention-Edge Computing Use Cases and Case Studies: Edge Computing High- Potential Use Cases. **Introduction to green computing**–Calculating carbon footprint- **Choosing Green PC path**: A green make over – Buying green computer- Choosing Earth Friendly peripherals.	K4	12
V	**Fog Computing**: Introduction to Fog computing – Architecture - Characteristics - Fog Computing Services – Fog Resource Estimation and Its Challenges-Fog computing on 5G networks – Fog computing Use cases and Case studies.	K5	12
	…… Self Study		
Course Outcome	CO1: Outline the concepts, applications, benefits and limitations of various computing paradigms.	K1	
	CO2: Classify the computing technologies based on its architecture and infrastructure and identify its strategies.	K2	

	CO3: Examine various cloud services, Security threat exposure within a cloud computing infrastructure.	K3		
	CO4: Asses the problems and solutions involved in various stages of different	K4		
	CO5: Discuss the importance of cloud, edge and Fog technology and implement innovative ideas and practices for regulating green IT.	K5		
Learning Resources				
Text Books	1.Kailas Jayaswal,Jagannath Kallakurchi,Donald J.Houde,Dr.Devan Shah ― Cloud Computing –Black Book‖ Edition :2020 (UNIT I & II : CHAPTER 1,2,3,9,11) 2. K. Anitha Kumari G. Sudha Sadasivam D. Dharani M. Niranjanamurthy, ―EDGE COMPUTING Fundamentals, Advances and Applications‖, First Edition 2022, CRC Press. (UNIT III & IV : CHAPTER 1, 2 , 3, 4,5,6) 3. Woody Leonhard and Katherine Murray (2009) ,Green Home Computing for Dummies,Willey Publishing Inc. (UNIT IV : CHAPTER 2 ,5,6,7) 4. Evangelos Markakis, George Mastorakis, Constandinos X.Mavromoutakis and Evangelos pallis ―Cloud and Fog computing in 5G mobile Networks‖ ,First edition 2017. (UNIT V: CHAPTER 2)			
Reference Books	RajKumar Buyya, ChristianVecchiola, S.ThamaraiSelvi, (2013), Mastering Cloud Computing,McGraw Hill Education.			
Website Link	https://static.googleusercontent.com/media/www.google.com/en//green/pdfs/google-green- computing.pdf (Case Study)			
Self-study Material	http://whatiscloud.com/basic_concepts_and_terminology/cloud http://www.computerweekly.com/guides/Using-green-computing-for-improving-energy- efficiency			
	L-Lecture	**T-Tutorial**	**P-Practical**	**C-Credit**

B.Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards										
Course Code	**Course Title**			**Course Type**	**Sem.**	**Hours**	**L**	**T**	**P**	**C**
23M6UCSE10	**TRENDS IN COMPUTING**			**DSC THEORY-IV**	**VI**	**5**	**3**	**2**	**-**	**3**

CO-PO Mapping

CO Number	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	M	M	S	L	S	M	M	S	S
CO2	M	M	M	M	M	S	S	M	S	S
CO3	S	M	M	M	M	S	S	S	M	S
CO4	S	M	M	M	S	S	S	M	S	S
CO5	S	M	M	S	S	S	M	M	L	M

Level of Correlation between CO and PO	L-LOW	M- MEDIUM	S-STRONG
Tutorial Schedule	Conducting Group Discussion, Class test		
Teaching and Learning Methods	Handling classes through chalk & talk method, PPT presentation		
Assessment Methods	Attendance, Assignment, CIA I, CIA II and ESE		

Designed By	**Verified By**	**Approved By**
P.Muthamilselvi	HOD P Subramaniam	Member Secretary Dr.S.Shahitha

B.Sc. Information Technology– Syllabus LOCF – CBCS with effect from 2023-2024 Onwards								
Course Code	**Course Title**	**Course Type**	**Sem.**	**Hours**	**L**	**T**	**P**	**C**
23M6UITE11	**AGILE PROJECT MANAGEMENT**	**DSE THEORY-IV**	**VI**	**5**	**3**	**2**	**-**	**3**
Objective	Student able to learn and detailed demonstration about Agile development and testing techniques.							

Unit	Course Content	Knowledge Levels	Sessions
I	**Introduction:** Modernizing Project Management: Project Management Needed a Makeover – Introducing Agile Project Management. **Applying the Agile Manifesto and Principles**: Understanding the Agile manifesto – Outlining the four values of the Agile manifesto -Defining the 15 Agile Principles – Adding the Platinum Principles -Changes as a result of Agile Values – The Agile litmus test. **Why Being Agile Works Better:** Evaluating Agile benefits – How Agile approaches beat historical approaches – Why people like being Agile.	K1	12
II	**Being Agile Agile Approaches:** Diving under the umbrella of Agile approaches Reviewing the Big Three: Lean-Scrum-Extreme Programming -Summary. **Agile Environments in Action:** Creating the physical environment – Low-tech communicating – High-tech communicating – Choosing tools. **Agile Behaviors in Action:** Establishing Agile roles – Establishing new values – Changing team philosophy.	K2	12
III	**Agile Planning and Execution Defining the Product Vision and Roadmap**: Agile planning – Defining the product vision – Creating a product roadmap – Completing the product backlog. **Planning Releases and Sprints:** Refining requirements and estimates – Release planning – Sprint planning. **Working Throughout the Day:** Planning your day – Tracking progress– Agile roles in the sprint – Creating shippable functionality – The end of the day. **Showcasing Work, Inspecting and Adapting:** The sprint review – The sprint retrospective. **Preparing for Release:** Preparing the product for deployment (the release sprint) – Preparing the operational support – Preparing the organization for product deployment - Preparing the marketplace for product deployment	K3	12

IV	**Agile Management Managing Scope and Procurement:** What's different about Agile scope management – Managing Agile scope – What's different about Agile procurement – Managing Agile procurement. **Managing Time and Cost:** What's different about Agile time management – Managing Agile schedules – What's different about Agile cost management – Managing Agile budgets **Managing Team Dynamics and Communication:** What's different about Agile team dynamics – Managing Agile team dynamics – What's different about Agile communication – Managing Agile communication. **Managing Quality and Risk:** What's different about Agile quality – Managing Agile quality – What's different about Agile risk management– Managing Agile risk**.**	K4	12
V	**Implementing Agile Building a Foundation:** Organizational and individual commitment –Choosing the right pilot team members – Creating and environment that enables Agility – Support Agility initially and over time. **Being a Change Agent**: Becoming Agile requires change – why change doesn't happen on its own – Platinum Edge's Change Roadmap –Avoiding pitfalls – Signs your changes are slipping. **Benefits, Factors for Success and Metrics:** Ten key benefits of Agile project management – Ten key factors for project success – Ten metrics for Agile Organizations**.** **Current Trends:** Edge Computing	K5	12
	…… Self Study		
Course Outcome	**CO1:** Remember software design, software technologies and APIs using Agile Management.	K1	
	CO2: Understanding of Agile development and testing techniques.	K2	
	CO3: Apply about Agile Planning and Execution using Sprint.	K3	
	CO4: Analyze of Agile Management Design, scope, Procurement, managing Time and Cost and Quality Check.	K4	
	CO5: Evaluate the Agile development and testing techniques.	K5	

Learning Resources	
Text Books	1. Mark C. Layton, Steven J. Ostermiller, Agile Project Management for Dummies, 2nd Edition, Wiley India Pvt. Ltd., 2018. 2. Jeff Sutherland, Scrum – The Art of Doing Twice the Work in Half the Time, Penguin,2014.
Reference Books	1.Mark C. Layton, David Morrow, Scrum for Dummies, 2nd Edition, Wiley India Pvt.Ltd., 2018. 2. Mike Cohn, Succeeding with Agile – Software Development using Scrum,AddisonWesley Signature Series, 2010. 3. Alex Moore, Agile Project Management, 2020.
Website Link	www.agilealliance.org/resources
Self-Study Material	1 https://en.wikipedia.org/wiki/Edge_computing

	L-Lecture	T-Tutorial	P-Practical	C-Credit

B.Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards

Course Code	Course Title	Course Type	Sem	Hours	L	T	P	C
23M6UITE11	AGILE PROJECT MANAGEMENT	DSE THEORY-IV	VI	5	3	2	-	3

CO-PO Mapping

CO Number	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	M	M	M	L	S	M	M	S	M
CO2	S	M	M	M	M	S	S	M	S	M
CO3	M	M	M	M	M	S	S	S	S	M
CO4	M	M	M	M	S	S	S	M	S	M
CO5	L	M	M	S	S	S	S	M	S	S

Level of Correlation between CO and PO	L-LOW	M- MEDIUM	S-STRONG

Tutorial Schedule	Conducting Group Discussion, Class test
Teaching and Learning Methods	Handling classes through chalk & talk method, PPT presentation
Assessment Methods	Attendance, Assignment, CIA I, CIA II and ESE

Designed By	Verified By	Approved By
V.Arbutharaj	HOD P Subramaniam	Member Secretary Dr.S.Shahitha

B.Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards								
Course Code	**Course Title**	**Course Type**	**Sem**	**Hours**	**L**	**T**	**P**	**C**
23M6UITE12	**ARTIFICIAL INTELLIGENCE**	**DSE THEORY- IV**	**VI**	**5**	**3**	**2**	**-**	**3**
Objective	Students learn various concepts of AI Techniques and Search the Algorithm in AI.							

Unit	Course Content	Knowledge Levels	Sessions
I	**Introduction:** Concept of AI- history- current status- scope-agents- environments- Problem Formulations- Review of tree and graph structures- State space representation- Search graph and Search tree	K1	12
II	**Search Algorithms** : Random search- Search with closed and open list- Depth first and Breadth first search- Heuristic search- Best first search- A* algorithm- Game Search	K2	12
III	**Probabilistic Reasoning** : Probability- conditional probability- Bayes Rule- Bayesian Networks- representation- construction and inference- temporal model- hidden Markov model.	K3	12
IV	**Markov Decision process** : MDP formulation- utility theory- utility functions- value iteration- policy iteration and partially observable MDPs.	K4	12
V	**Reinforcement Learning** : Passive reinforcement learning- direct utility estimation- adaptive dynamic programming- temporal difference learning- active reinforcement learning- Q learning **Current Trends *AI in Gaming***	K5	12
	…… Self Study		
Course Outcome	CO1: Remember the various concepts of AI Techniques.	K1	
	CO2: Understand various Search Algorithm in AI.	k2	
	CO3: Analysis probabilistic reasoning and models in AI.	K3	
	CO4: Apply Markov Decision Process.	K4	
	CO5:Evaluate various type of Reinforcement learning Techniques.	K5	

Learning Resources	
Text Books	1. Stuart Russell and Peter Norvig- ―Artificial Intelligence: A Modern Approach‖ - 3rd Edition- Prentice Hall. 2.Elaine Rich and Kevin Knight- ―Artificial Intelligence‖- Tata McGraw Hill
Reference Books	1.Trivedi- M.C.- ―A Classical Approach to Artifical Intelligence‖- Khanna Publishing House- Delhi. 2.Saroj Kaushik- ―Artificial Intelligence‖- Cengage Learning India- 2011 3.David Poole and Alan Mackworth- ―Artificial Intelligence: Foundations for Computational Agents‖- Cambridge University Press 2010
Website Link	1.NPTEL&MOOCcoursestitledArtificialIntelligenceandExpertSystems 2. https://nptel.ac.in/courses/106106140/
Self-Study Material	https://in.element14.com/latest-trends-in-artificial-intelligence

	L-Lecture	**T-Tutorial**	**P-Practical**	**C-Credit**

B.Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards

Course Code	Course Title	Course Type	Sem	Hours	L	T	P	C
23M6UITE12	**ARTIFICIAL INTELLIGENCE**	**DSC THEORY-IV**	**VI**	**5**	**3**	**2**	**-**	**3**

CO-PO Mapping

CO Number	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	M	S	S	S	S	S	S	M	S
CO2	S	S	S	S	S	M	S	S	S	S
CO3	S	S	M	S	M	S	S	S	S	S
CO4	M	S	S	S	S	S	M	S	S	S
CO5	S	M	S	S	S	S	S	S	S	S

Level of Correlation between CO and PO	L-LOW	M- MEDIUM	S-STRONG

Tutorial Schedule	Conducting Group Discussion- Class test
Teaching and Learning Methods	Handling classes through chalk & talk method- PPT presentation
Assessment Methods	Attendance- Assignment- CIA- I, CIA- II and ESE

Designed By	Verified By	Approved By
E.Jamuna	HOD P Subramaniam	Member Secretary Dr.S.Shahitha

S. NO.	COURSE_CODE	TITLE OF THE COURSE
1	23M2UITSP1	HTML PROGRAMMING(SEC PRACTICAL)
2	23M3UITSP2	PHP PROGRAMMING(SEC PRACTICAL)
3	23M4UITSP3	MULTIMEDIA SYSTEMS(SEC PRACTICAL)
4	23M_UITS01/ 23M_UITN01	FUNDAMENTALS OF INFORMATION TECHNOLOGY
5	23M_UITS02/ 23M_UITN02	ADVANCED EXCEL
6	23M_UITS03/ 23M_UITN03	OFFICE AUTOMATION
7	23M_UITS04/ 23M_UITN04	SOFTWARE TESTING
8	23M_UITS05/ 23M_UITN05	UNDERSTANDING INTERNET
9	23M_UITS06/ 23M_UCSN06	BIOMETRICS
10	23M_UITS07/ 23M_UITN07	CYBER FORENSICS
11	23M_UITS08/ 23M_UITN08	PATTERN RECOGNITION
12	23M_UITS09/ 23M_UITN09	SIMULATION AND MODELLING
13	23M_UITN10	PHP PROGRAMMING
14	23M_UITN11	WEB DESIGNING
15	23M_UITN12	MULTIMEDIA SYSTEMS
16	23M_UITN13	ORGINATIONAL BEHAVIOR

B.Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards								
Course Code	**Course Title**	**Course Type**	**Sem.**	**Hours**	**L**	**T**	**P**	**C**
23M2UITSP1	**HTML PROGRAMMING**	**SEC PRACTICAL - I**	**II**	**2**	**-**	**-**	**2**	**2**

Objective	Students can able to understand the concepts of html and design web pages.		
S. No.	**List of Experiments / Programs**	**Knowledge Levels**	**Sessions**
1	Write HTML code to develop a web page that contains the different background and foreground color, with various styles.	K1	4
2	Write HTML code to create a Webpage that contains an Image at its left hand side of the page when user clicks on the image; it should open another web page that displays the details of that image.	K2	4
3	Create a web Page using HREF tag having the attribute ALINK, VLINK etc.	K2	3
4	Create a web page, when user clicks on the link it should go to the bottom of the page	K3	3
5	Write a HTML code to create a web page of pink color and display moving message in red color	K4	3
6	Create a web page, showing an ordered list of name of your five friends and unordered list of any five your hobbies.	K4	3
7	Create a HTML document containing a nested list showing the content page of any book.	K4	2
8	Create a student mark list in HTML using Tables.	K4	2
Course Outcome	CO1: Remember all the basic html tags	K1	
	CO2: Understand the problem and construct the code	K2	
	CO3: Apply the procedure that are relevant to the casual	K3	
	CO4: Analyze the source lines that are match up with the casual	K4	
	CO5: Evaluate the flow of execution	K5	

Learning Resources	
Text Books	C Xavier, "World Wide Web with HTML", Tata McGraw Hill Education, 2000.
Reference Books	Raj Kamal, "Internet and Web Technologies", 7th Reprint, Tata McGraw Hill Education, 2007.
Website Link	https://www.w3schools.com/html/html_examples.asp

L-Lecture T-Tutorial P-Practical C-Credit

B.Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards										
Course Code	**Course Title**			**Course Type**		**Sem.**	**Hours**	**L**	**T**	**P**	**C**
23M2UITSP1	**HTML PROGRAMMING**			**SEC PRACTICAL - I**		**II**	**2**	**-**	**-**	**2**	**2**
CO-PO Mapping										
CO Number	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PSO1**	**PSO2**	**PSO3**	**PSO4**	**PSO5**
CO1	L	M	M	S	S	S	S	S	M	M
CO2	M	S	M	S	M	S	S	M	M	M
CO3	S	M	M	M	M	S	M	M	S	M
CO4	M	M	M	S	S	S	S	M	S	M
CO5	M	S	M	M	S	M	S	M	M	M
Level of Correlation between CO and PO				L-LOW		M- MEDIUM			S-STRONG	
Tutorial Schedule	To give more sample programs to related topic									
Teaching and Learning Methods	Handling practical session through projector									
Assessment Methods	Attendance, Observation, Model Practical(CIA I & CIA II) & ESE									

Designed By	**Verified By**	**Approved By**
P.Muthamilselvi	HOD Mr.P Subramaniam	Member Secretary Dr.S.Shahitha

B.Sc-Information Technology Syllabus LOCF-CBCS with effect from 2023-2024 onwards								
Course Code	**Course Title**	**Course Type**	**Sem**	**Hours**	**L**	**T**	**P**	**C**
23M3UITSP2	**PHP PROGRAMMING**	**SEC PRACTICAL - II**	**III**	**2**	**-**	**-**	**2**	**2**
Objective	To understand the concepts of html and students can able to create our own program using PHP.							

S. No.	**List of Experiments / Programs**	**Knowledge Levels**	**Sessions**
1	Write a PHP program to find the factorial of a number using forms.	K1	3
2	Write a PHP program to design a login form using Conditional Statements.	K2	3
3	Write a PHP program to design a visiting card.	K2	3
4	Design a simple web page to generate a multiplication table for a given number using PHP.	K3	3
5	Design a web page that should compute one‘s age on a given date using PHP.	K3	2
6	Write a PHP program to download a file from the server.	K3	2
7	Write a PHP program to store the current date and time in a COOKIE and display _Last Visited‘date and time on the web page.	K4	2
8	Write a PHP program to store page views count in SESSION, to increment count on each refresh and to show the count on web page.	K4	2
9	Write a PHP program to design a calendar for the current year.	K5	2
10	Write a PHP Program to create a time table for the current semester.	K5	2
Course Outcome	CO1: Remember all the basic html tags	K1	
	CO2: Understand the problem and construct the code	K2	
	CO3: Apply the procedure that are relevant to the casual	K3	
	CO4: Analyze the source lines that are match up with the casual	K4	
	CO5: Evaluate the flow of execution	K5	

L-Lecture T-Tutorial P-Practical C-Credit

Learning Resources	
Text Books	C Xavier, "World Wide Web with HTML", Tata McGraw Hill Education, 2000.
Reference Books	Raj Kamal, "Internet and Web Technologies", 7th Reprint, Tata McGraw Hill Education, 2007.
Website Link	https://www.w3schools.com/html/html_examples.asp

B.Sc., Information Technology Syllabus LOCF-CBCS with effect from 2023-2024 onwards							
Course Code	**Course Title**	**Course Type**	**Sem**	**Hours**	**L**	**T**	**P**	**C**
23M3UITSP2	**PHP PROGRAMMING**	**SEC PRACTICAL - II**	**III**	**2**	**-**	**-**	**2**	**2**

CO-PO Mapping

CO Number	PO1	PO 2	PO3	PO 4	PO5	PSO1	PSO2	PSO3	PSO 4	PSO5
CO1	L	M	M	S	S	S	S	S	M	M
CO2	M	S	M	S	M	S	S	M	M	M
CO3	S	M	M	M	M	S	M	M	S	M
CO4	M	M	M	S	S	S	S	M	S	M
CO5	M	S	M	M	S	M	S	M	M	M
Level of Correlation between CO and PO	L-LOW			M-MEDIUM		S-STRONG				

Tutorial Schedule	To give more sample programs to related topic
Teaching and Learning Methods	Handling practical session through projector
Assessment Methods	Attendance, Observation, Model Practical(CIA I & CIA II) & ESE

Designed By	Verified By	Approved By
M.Sudha	HOD P Subramaniam	Member Secretary Dr.S.Shahitha

B.Sc. Information Technology Syllabus LOCF - CBCS with effect from 2023-2024 Onwards								
Course Code	**Course Title**	**Course Type**	**Sem.**	**Hours**	**L**	**T**	**P**	**C**
23M4UITSP3	**PRACTICAL: MULTIMEDIA SYSTEMS**	**SEC Practical III**	**IV**	**2**	**-**	**-**	**2**	**2**
Objective	Student can able to Acquire knowledge about the basics of multimedia, image editing and Apply multimedia concepts to real world projects							

S.NO	List of Experiments / Programs	Knowledge Levels	Sessions
I	GIMP's Tools- Taking Advantage of Paths - Working with Layers and masks - Using Channels Exercises: 1. Enlarge a Logo using path 2. Create an ink drawing using path 3. Replace Background of image using Channels	K1	5
II	Manipulating Images: Transforming Images - Using The Image Tools - Adjusting Colors - Working with Text - Painting in Gimp: Creating new brushes - Enhancing Photos - Exploring Filters and Effects. Exercises: 1. Design Front Cover for a Book. 2. Create a Customized logo 3. Use clone tool to remove text from an image 4. Remove Red eye using Filter.	K2	5
III	Using GIMP animation package - Managing the Frames of Image Sequence with GAP - Morphing - onion skinning - Creating a Storyboard. Exercises: 1. Morphing - Create smooth transitions from one image to another. 2. Create a Story board for your project	K3	5
IV	Flash: Introduction - Creating and Editing Objects - Color and Text. Animations: Frame- by- frame animation-Motion Tweening-Motion Guides 1. Creating Frame-by-frame Animation 2. Create a Motion Tween for Graphic and Text Object 3. Create a Motion guide Layer	K4	5

V	Shape Twining - Masking - Interactivity: Adding Script to Buttons - Testing and Publishing. Exercises: 1. Create a Shape Tween for Graphic Object 2. Create a Mask Layer 3. Adding buttons with Action Script	K5	4
	CO1: Demonstrate understanding and use of multimedia fundamentals**.**	K1	
COURSE OUTCOME	**CO2**: Implement appropriate techniques required for editing images.	K2	
	CO3: Solve various design and implementation issues materialize on the development of multimedia systems	K3	
	CO4: Assess different Photo Editing, Video Editing and animation tools and select the appropriate tool based on the requirements	K4	
	CO5: Design and develop Multimedia Projects	K5	

Learning Resources	
Text Books	1. Jason Van Gumster& Robert Shimonski (2010), ―GIMP Bible‖, Wiley, 2nd edition. 2. Chris Gover, 2010, ―Flash CS5: The missing Manual‖, 1st Edition, O‟ Reilly India.
Reference Books	1.Juan Manuel Ferreyra (2011), ―GIMP 2.6 Cookbook‖, PACK publishing Ltd. 2. Robert Reinhard (2003), ―Macromedia Flash MX Bible‖, Wiley Dreamtech India Pvt Ltd.
Website Link	https://www.youtube.com/watch?v=T8NIK3RdoIc (Unit IV: Gimp Video Editing) https://www.youtube.com/watch?v=Jz9WrbELGYA
Self-Study Material	1.https://computers.stmjournals.com/index.php?journal=JoMTRA 2. https://link.springer.com/journal/11042

	L-Lecture	T-Tutorial	P-Practical	C-Credit

B.Sc. – Information Technology Syllabus LOCF - CBCS with effect from 2023-2024 Onwards										
Course Code	**Course Title**		**Course Type**		**Sem**	**Hours**	**L**	**T**	**P**	**C**
23M4UITSP3	**PRACTICAL: MULTIMEDIA SYSTEMS**		**SEC Practical- III**		**IV**	**2**	**-**	**-**	**2**	**2**

CO-PO Mapping										
CO Number	**P01**	**P02**	**P03**	**P04**	**P05**	**PSO1**	**PSO2**	**PSO3**	**PSO4**	**PSO5**
CO1	L	M	M	S	S	S	S	S	M	M
CO2	S	M	M	L	M	S	S	M	M	M
CO3	S	M	M	L	M	S	M	M	M	M
CO4	M	M	M	S	S	S	M	M	M	M
CO5	M	M	M	M	M	M	M	L	M	M
Level of Correlation between CO and PO	L-LOW					M-MEDIUM			S-STRONG	

Tutorial Schedule	To give more sample programs to related topic
Teaching and Learning Methods	Handling practical session through projector
Assessment Methods	Attendance, Observation, Model Practical(CIA I & CIA II) & ESE

Designed By	**Verified By**	**Approved By**
T.Tamilarasi	HOD P Subramaniam	Member Secretary Dr.S.Shahitha

B.Sc. Information Technology Syllabus LOCF - CBCS with effect from 2023-2024 Onwards								
Course Code	**Course Title**	**Course Type**	**Sem.**	**Hours**	**L**	**T**	**P**	**C**
23M_UITS01/ 23M_UITN01	**Fundamentals of Information Technology**			**2**	**2**	**-**	**-**	**2**
Objective	Students can able to learn the Understand basic concepts and terminology of information technology.							

Unit	Course Content	Knowledge Levels	Sessions
I	**Introduction to Computers:** Introduction- Definition- .Characteristics of computer- Evolution of Computer- Block Diagram Of a computer- Generations of Computer- Classification Of Computers- Applications of Computer- Capabilities and limitations of computer	K1	6
II	**Basic Computer Organization:** Role of I/O devices in a computer system. Input Units: Keyboard- Terminals and its types. Pointing Devices- Scanners and its types- Voice Recognition Systems- Vision Input System- Touch Screen- Output Units: Monitors and its types. Printers: Impact Printers and its types. Non-Impact Printers and its types- Plotters- types of plotters- Sound cards- Speakers.	K2	6
III	**Storage Fundamentals:** Primary Vs Secondary Storage- Data storage & retrieval methods. Primary Storage: RAM ROM- PROM- EPROM- EEPROM. Secondary Storage: Magnetic Tapes- Magnetic Disks. Cartridge tape- hard disks- Floppy disks Optical Disks- Compact Disks- Zip Drive- Flash Drives	K3	4
IV	**Software:** Software and its needs- Types of S/W. **System Software:** Operating System- Utility Programs Programming Language: Machine Language- Assembly Language- High Level Language their advantages & disadvantages. Application S/W and its types: Word Processing- Spreadsheet Presentation- Graphics- DBMS s/w	K3	4
V	**Operating System:** Functions- Measuring System Performance- Assemblers- Compilers and Interpreters. Batch Processing- Multiprogramming- Multi Tasking- Multiprocessing- Time Sharing- DOS- Windows- Unix/Linux. **Current Trends-*Internet of Thing (IoT) review of review: Bibliometric overview since its foundation***	K4	4
	…… Self Study.		

Course Outcome	**CO1:** Learn the basics of computer- Construct the structure of the required things in computer- learn how to use it.		K1	
	CO2: Develop organizational structure using for the devices present currently under input or output unit		K2	
	CO3: Concept of storing data in a computer.		K3	
	CO4: Work with different software- Write program in the software and applications of software.		K4	
	CO5: Apply the Operating system in information technology.		K4	
Learning Resources				
Text Books	1. Anoop Mathew- S. KavithaMurugeshan (2009)- ― Fundamental of Information Technology‖- Majestic Books. 2. Alexis Leon- Mathews Leon-‖ Fundamental of Information Technology‖- 2nd Edition			
Reference Books	1. Bhardwaj SushilPuneet Kumar- ―Fundamental of Information Technology 2. GG WILKINSON- ―Fundamentals of Information Technology- Wiley-Blackwell 3. A Ravichandran - ―Fundamentals of Information Technology‖- Khanna Book Publishing			
Website Link	1. https://testbook.com/computer-awareness/computer-fundamentals 2. https://www.tutorialsmate.com/2020/04/computer-fundamentals-tutorial.html 3. https://www.tutorialspoint.com/computer_fundamentals/index.htm			
Self-Study Material	1. https://www.sciencedirect.com/science/article/abs/pii/S0167739X23000237 2. https://publications.jrc.ec.europa.eu/repository/handle/JRC126051			
	L-Lecture	T-Tutorial	P-Practical	C-Credit

B.Sc. Information Technology Syllabus LOCF - CBCS with effect from 2023-2024 Onwards									
Course Code	**Course Title**	**Course Type**	**Sem**	**Hours**	**L**	**T**	**P**	**C**	
23M_UITS01/ 23M_UITN01	**Fundamentals of Information Technology**			**2**	**2**	**-**	**-**	**2**	

CO-PO Mapping

CO Number	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	S	S	S	S	S	S	S	S	S
CO2	S	S	S	M	S	S	M	S	S	M
CO3	S	S	S	S	S	S	S	S	S	S
CO4	S	S	S	S	M	S	S	S	M	S
CO5	S	S	M	S	S	S	S	M	S	S

Level of Correlation between CO and PO	L-LOW	M-MEDIUM	S-STRONG

Tutorial Schedule	Group Discussion- Quiz program- Model preparation and Kahoot app
Teaching and Learning Methods	Audio Video lecture- Chalk and Board class- Assignment- PPT Presentation and Video presentation
Assessment Methods	Assignment- CIA-I, CIA-II and ESE

Designed By	**Verified By**	**Approved By**
P.Muthamilselvi	HOD P Subramaniam	Member Secretary Dr.S.Shahitha

B.Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards								
Course Code	**Course Title**	**Course Type**	**Sem.**	**Hours**	**L**	**T**	**P**	**C**
23M_UITS02/ 23M_UITN02	**Advanced Excel**	**NMEC**		**2**	**2**	**-**	**-**	**2**
Objective	Student should handle large amounts of data then aggregate numeric data and summarize into categories and subcategories.							

Unit	Course Content	Knowledge Levels	Sessions
I	**Basics of Excel:**- Customizing common options- Absolute and relative cells- Protecting and un-protecting worksheets and cells- Working with Functions - Writing conditional expressions - logical functions - lookup and reference functions- VlookUP with Exact Match- Approximate Match- Nested VlookUP with Exact Match- VlookUP with Tables- Dynamic Ranges- Nested VlookUP with Exact Match- Using VLookUP to consolidate Data from Multiple Sheets	K1	6
II	**Data Validations:** - Specifying a valid range of values - Specifying a list of valid values- Specifying custom validations based on formula - Working with Templates Designing the structure of a template- templates for standardization of worksheets - Sorting and Filtering Data - Sorting tables- multiple-level sorting- custom sorting Filtering data for selected view - advanced filter options Working with Reports Creating subtotals- Multiple-level subtotal	K2	6
III	**Creating Pivot tables:** Formatting and customizing Pivot tables- advanced options of Pivot tables- Pivot charts Consolidating data from multiple sheets and files using Pivot tables- external data sources- data consolidation feature to consolidate data- Show Value As % of Row- % of Column- Running Total- Compare with Specific Field Viewing Subtotal under Pivot- Creating Slicers.	K3	4
IV	**More Functions Date and time functions:**- Text functions Database functions- Power Functions - Formatting Using auto formatting option for worksheets- Using conditional formatting option for rows- columns and cells- What If Analysis - Goal Seek- Data Tables- Scenario Manager	K3	**4**
V	**Charts:** - Formatting Charts- 3D Graphs- Bar and Line Chart together- Secondary Axis in Graphs- Sharing Charts with PowerPoint / MS Word- Dynamically- New Features Of Excel Sparklines- Inline Charts- data Charts- Overview of all the new features. ***CURRENT TENDS -** Data-Locality Aware Job Scheduling IoT tasks in fog-cloud computing environments*****	K4	**4**
	…… Self Study		
	CO1: Remember the Work with big data tools and its analysis techniques.	K1	

Course Outcome	CO2: Understand data by utilizing clustering and classification algorithms.	K2	
	CO3: Apply different mining algorithms and recommendation systems for large volumes of data.	K3	
	CO4: Analysis Perform analytics on data streams	K3	
	CO5: Evaluate Learn No-SQL databases and management.	K3	

Learning Resources				
Text Books	1. Excel 2019 All Microsoft Excel 2019 Pivot Table Data Crunching			
Reference Books	1. Excel 2019 All-in-One for Dummies- Greg Harvey- 1st edition			
Website Link	1. https://www.w3schools.com/html/default.asp 2. https://www.teachucomp.com/samples/html/5/manuals/Mastering-HTML5-CSS3.pdf			
Self-Study Material	1. https://www.sciencedirect.com/science/article/pii/S2590123024000331			
	L-Lecture	**T-Tutorial**	**P-Practical**	**C-Credit**

B.Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards									
Course Code	**Course Title**			**Course Type**	**Sem**	**Hours**	**L**	**T**	**P**	**C**
23M_UITS02/ 23M_UITN02	**Advanced Excel**					**2**	**2**	**-**	**-**	**2**

CO-PO Mapping

CO Number	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PSO1**	**PSO2**	**PSO3**	**PSO4**	**PSO5**
CO1	S	M	M	M	M	S	S	M	S	S
CO2	S	S	M	M	M	S	M	M	S	S
CO3	M	M	M	S	S	S	S	M	S	S
CO4	M	M	S	S	S	S	M	M	S	S
CO5	M	S	S	M	S	S	S	M	S	S

Level of Correlation between CO and PO	L-LOW	M- MEDIUM	S-STRONG

Tutorial Schedule	Conducting Group Discussion- Class test
Teaching and Learning Methods	Handling classes through chalk & talk method- PPT presentation
Assessment Methods	Attendance- Assignment- CIA – I, CIA- II and ESE

Designed By	**Verified By**	**Approved By**
M.Kalaiselvi	HOD P Subramaniam	Member Secretary Dr.S.Shahitha

B.Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards								
Course Code	**Course Title**	**Course Type**	**Sem**	**Hours**	**L**	**T**	**P**	**C**
23M_UITS03/ 23M_UITN03	**Office Automation**			**2**	**2**	**-**	**-**	**2**
Objective	Student should understand the basics of computer systems and its components then apply the basic concepts of a word- spread sheet package- PowerPoint tool.							

Unit	Course Content	Knowledge Levels	Sessions
I	**Introduction concepts:** Memory unit–CPU. **Input Devices:** Key board- Mouse and Scanner. **Output devices:** Monitor- Printer. **Introduction to Operating systems & its features:** DOS–UNIX–Windows. Introduction to Programming Languages.	K1	6
II	**Word Processing:** Open- Save and close word document; Editing text – tools- formatting- bullets- Spell Checker - Document formatting – Paragraph alignment- indentation- headers and footers- Numbering- printing–Preview- options- merge.	K2	6
III	**Spreadsheets :** Excel–opening- entering text and data- formatting- navigating- Formulas–entering- handling and copying- Charts– creating- formatting and printing-analysis tables- preparation of Financial statements- introduction to data analytics.	K3	4
IV	**Database Concepts:** The concept of data base management system- Data field- records- and files- Sorting and indexing data- Searching Records. Designing queries- and reports- Linking of data files- Understanding Programming environment in DBMS- Developing Menu drive applications in query language (MS–Access).	K3	4
V	**Power point :** Introduction to Power point - Features – Understanding slide typecasting & viewing slides – creating slide Shows. Applying special object – including objects & pictures – Slide Transition–Animation effects- audio inclusion- timers.***current trends "Macros"***	K3	4
	…… Self Study		
Course Outcome	CO1: remember the Possess the knowledge on the basics of computers and its components	K1	
	CO2: understand the Gain knowledge on Creating Documents- spreadsheet and presentation.	K2	
	CO3: Apply Learn the concepts of Database and implement the Query in Database.	K3	

	CO4: Analysis demonstrates the understanding of different automation tools.	K4	
	CO5: Evaluate the automation tools for documentation-calculation and presentation purpose.	K5	

Learning Resources	
Text Books	1. Peter Norton-—Introduction to Computers‖–Tata Mc Graw-Hill.
Reference Book	1.Jennifer Ackerman Kettel- Guy Hat-Davis- Curt Simmons- —Microsoft 2003‖- Tata McGrawHill.
Self-Study Material	1. https://www.javatpoint.com/automation-tools 2. https://www.udemy.com/course/office-automation-certificate-course/

	L-Lecture	**T-Tutorial**	**P-Practical**	**C-Credit**

B.Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards

Course Code	**Course Title**	**Course Type**	**Sem**	**Hours**	**L**	**T**	**P**	**C**
23M_UITS03/ 23M_UITN03	**Office Automation**	**SEC**		**2**	**2**	**-**	**-**	**2**

CO-PO Mapping

CO Number	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PSO1**	**PSO2**	**PSO3**	**PSO4**	**PSO5**
CO1	M	M	S	M	L	L	L	M	M	M
CO2	S	M	S	M	L	L	M	M	M	S
CO3	S	S	S	M	L	M	M	M	M	L
CO4	S	M	M	M	M	S	M	M	S	M
CO5	S	S	L	M	M	S	S	S	M	S

Level of Correlation between CO and PO	L-LOW	M- MEDIUM	S-STRONG

Tutorial Schedule	Conducting Group Discussion- Class test
Teaching and Learning Methods	Handling classes through chalk & talk method- PPT presentation
Assessment Methods	Attendance- Assignment- CIA I- CIA II and ESE

Designed By	**Verified By**	**Approved By**
M.Kalaiselvi	HOD P Subramaniam	Member Secretary Dr.S.Shahitha

B.Sc. Information Technology– Syllabus LOCF – CBCS with effect from 2023-2024 Onwards

Course Code	Course Title	Course Type	Sem.	Hours	L	T	P	C
23_MUITS04/ 23_MUITN04	SOFTWARE TESTING			2	2	-	-	2

Objective	Student study fundamental concepts in software testing

Unit	Course Content	Knowledge Levels	Sessions
I	**Introduction:** Purpose–Productivity and Quality in Software– Testing Vs Debugging– Model for Testing– Bugs–Types of Bugs – Testing and Design Style.	K1	6
II	Flow / Graphs and Path Testing – Achievable paths – Path instrumentation Application Transaction Flow Testing Techniques.	K2	6
III	Data Flow Testing Strategies - Domain Testing: Domains and Paths – Domains and Interface Testing.	K3	4
IV	Linguistic –Metrics – Structural Metric – Path Products and Path Expressions. Syntax Testing– Formats–Test Cases	K4	4
V	Logic Based Testing–Decision Tables– Transition Testing– States- State Graph- State Testing. **Current Trends**: Machine Learning	k5	4
	…… Self Study		
Course Outcome	CO1: Students learn to apply software testing knowledge and engineering methods	K1	
	CO2: Have an ability to identify the needs of software test automation- and define and develop a test tool to support test automation	K2	
	CO3: Have an ability understand and identify various software testing problems- and solve these problems by designing and selecting software test models- criteria- strategies- and methods.	K3	
	CO4: Have basic understanding and knowledge of contemporary issues in software testing- such as component-based software testing problems	K4	
	CO5: Have an ability to use software testing methods and modern software testing tools for their testing projects.	K5	

Learning Resources

Text Books	1. B.Beizer-—SoftwareTestingTechniques‖-IIEdn.-DreamTechIndia-NewDelhi- 2003 K.V.K.Prasad-—SoftwareTestingTools‖-DreamTech.India-NewDelhi-2005

Reference Books	1. I.Burnstein-2003-—PracticalSoftwareTesting‖-SpringerInternationalEdn. E. Kit- 1995- —Software Testing in the Real World: Improving the Process‖- Pearson Education- Delhi 2. R. Rajani-andP.P.Oak-2004-—SoftwareTesting‖-TataMcgrawHill-New Delhi..
Website Link	1. https://www.javatpoint.com/software-testing-tutorial 2.https://www.guru99.com/software-testing.html
Self-Study Material	https://www.javatpoint.com/machine-learning

	L-Lecture	**T-Tutorial**	**P-Practical**	**C-Credit**

B.Sc. Information Technology– Syllabus LOCF – CBCS with effect from 2023-2024 Onwards

Course Code	**Course Title**	**Course Type**	**Sem**	**Hours**	**L**	**T**	**P**	**C**
23_MUITS04/ 23_MUITN04	**SOFTWARE TESTING**			**2**	**2**	**-**	**-**	**2**

Objective

CO Number	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PSO1**	**PSO2**	**PSO3**	**PSO4**	**PSO5**
CO1	S	M	M	M	L	S	M	M	M	L
CO2	S	M	L	M	M	S	M	M	M	L
CO3	M	M	S	M	M	M	M	M	M	M
CO4	S	M	M	M	S	M	M	M	M	M
CO5	L	M	M	S	S	L	M	M	M	S

Level of Correlation between CO and PO	L-LOW	M- MEDIUM	S-STRONG

Tutorial Schedule	Conducting Group Discussion- Class test
Teaching and Learning Methods	Handling classes through chalk & talk method- PPT presentation
Assessment Methods	Attendance- Assignment- CIA I- CIA II and ESE

Designed By	**Verified By**	**Approved By**
E.Jamuna	HOD P Subramaniam	Member Secretary Dr.S.Shahitha

B.Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards								
Course Code	**Course Title**	**Course Type**	**Sem.**	**Hours**	**L**	**T**	**P**	**C**
23_MUITS05/ 23_MUITN05	**UNDERSTANDING INTERNET**			**2**	**2**	**-**	**-**	**2**
Objective	Student can able to Knowledge of Internet medium Internet as a mass medium Features of Internet Technology internet as source of infotainment							

Unit	Course Content	Knowledge Levels	Sessions
I	The Emergence Of Internet as a mass medium –the world of world wide web.	K1	6
II	Features Of Internet Technology.	K2	6
III	Internet as a source of infotainment – classification based on content and style.	K3	4
IV	Demographic and psychographic descriptions of internet audiences – effect of internet on the values and life-styles.	K4	4
V	Present issues such as cybercrime and future possibilities *__Current Trends: Cloud Computing__ *	k5	4
	…… Self Study		
Course Outcome	CO1: Remember the basic concept in internet Concept of mass medium and world wide web	K1	
	CO2: Understand the concept of internet as a technology.	K2	
	CO3:Apply the concept of infotainment and classification based on content and style	K3	
	CO4: Analyze the Can be able to know about Demographic and psychographic description of internet	K4	
	CO5:Evaluate the concept of cybercrime and future possibilities	K5	

Learning Resources	
Text Books	1. Barnouw- E and Krishnaswamy S [1990] Indian Film. New York- OUP.
Reference Books	1. Acharya- R N [1987] Television in India. Manas Publications- New Delhi. 2. Barnouw- E [1974] Documentary – A History of Nonfiction. Oxford- OUP 3. Luthra- H R [1986] Indian Broadcasting. Ministry of I& B- New Delhi. 4. Vasudev- Aruna [1986] The New Indian Cinema. Macmillan India- New Delhi.
Website Link	1. https://www.teachucomp.com/samples/html/5/manuals/Mastering-HTML5-CSS3.pdf 2. https://www.w3schools.com/html/default.asp

Self-Study Material	https://www.w3schools.in/cloud-computing			
	L-Lecture	**T-Tutorial**	**P-Practical**	**C-Credit**

B.Sc.- Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards

Course Code	Course Title	Course Type	Sem	Hours	L	T	P	C
23_MUITS05/ 23_MUITN05	UNDERSTANDING INTERNET			2	2	-	-	2

CO-PO Mapping

CO Number	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	M	M	M	L	S	M	M	M	L
CO2	S	M	L	M	M	S	M	M	M	L
CO3	M	M	S	M	M	M	M	M	M	M
CO4	S	M	M	M	S	M	M	M	M	M
CO5	L	M	M	S	S	L	M	M	M	S

Level of Correlation between CO and PO	L-LOW	M- MEDIUM	S-STRONG

Tutorial Schedule	Conducting Group Discussion- Class test
Teaching and Learning Methods	Handling classes through chalk & talk method- PPT presentation
Assessment Methods	Attendance- Assignment- CIA I- CIA II and ESE

Designed By	Verified By	Approved By
E.Jamuna	HOD P Subramaniam	Member Secretary Dr.S.Shahitha

B.Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards								
Course Code	**Course Title**	**Course Type**	**Sem.**	**Hours**	**L**	**T**	**P**	**C**
23M_UITS06/ 23M_UITN06	**Biometrics**			**2**	**2**	**-**	**-**	**2**
Objective	To Students the Identify the various biometric technologies and Design of biometric recognition.							

Unit	Course Content	Knowledge Levels	Sessions
I	**Introduction:** What is Biometrics- History- Types of biometric Traits- General architecture of biometric systems- Basic working of biometric matching- Biometric system error and performance measures- Design of biometric system- Applications of biometrics- Biometrics versus traditional authentication methods. **Face Biometrics:** Introduction- Background of Face Recognition- Design of Face Recognition System- Neural Network for Face Recognition- Face Detection in Video Sequences- Challenges in Face Biometrics-7 Face Recognition Methods- Advantages and Disadvantages.	K1	6
II	**Retina and Iris Biometrics**: Introduction- Performance of Biometrics- Design of Retina Biometrics- Design of Iris Recognition System- Iris Segmentation Method - Determination of Iris Region- Determination of Iris Region- Applications of Iris Biometrics - **Advantages and Disadvantages Vein and Fingerprint Biometrics:** Introduction- Biometrics Using Vein Pattern of Palm- Fingerprint Biometrics- Fingerprint Recognition System- Minutiae Extraction- Fingerprint Indexing- Experimental Results-Advantages and Disadvantages.	K2	6
III	**Privacy Enhancement Using Biometrics: Introduction-** Privacy Concerns Associated with Biometric Deployments- Identity and Privacy- Privacy Concerns- Biometrics with Privacy Enhancement- Comparison of Various Biometrics in Terms of Privacy- Soft Biometrics. **Multimodal Biometrics:** Introduction to Multimodal Biometrics- Basic Architecture of Multimodal Biometrics- Multimodal Biometrics Using Face and Ear- Characteristics and Advantages of Multimodal Biometrics- Characteristics and Advantages of Multimodal Biometrics.	K3	4

IV	**Watermarking Techniques:** Introduction- Data Hiding Methods- Basic Framework of Watermarking- Classification of Watermarking- Applications of Watermarking- Attacks on Watermarks- Performance Evaluation- Characteristics of Watermarks-General Watermarking Process- Image Watermarking 6 CO4 Techniques- Watermarking Algorithm- Experimental Results- Effect of Attacks on Watermarking Techniques- Attacks on Spatial Domain Watermarking	K4	4
V	**Scope and Future:** Scope and Future Market of Biometrics- Biometric Technologies - Applications of Biometrics- Biometrics and Information Technology Infrastructure - Role of Biometrics in Enterprise Security - Role of Biometrics in Border Security - Smart Card Technology and Biometrics- Radio Frequency Identification (RFID) Biometrics - DNA Biometrics - Comparative Study of Various Biometric Techniques. **Biometric Standards**: Introduction- Standard Development Organizations- Application Programming Interface (API) - Information Security and Biometric Standards- Biometric Template Interoperability. **Current Trends: Voice recognition**	k5	4
	…… Self Study		
Course Outcome	CO1: Remember the basic concepts and the functionality of the Biometrics.	K1	
	CO2: Understand the concepts Retina and Iris Biometrics and Vein and Fingerprint Biometrics.	K2	
	CO3: Apply the Privacy Enhancement and Multimodal Biometrics.	K3	
	CO4:Analyze get analytical idea on Watermarking Techniques	K4	
	CO5: Evaluate various Biometric Techniques.	K5	

Learning Resources				
Text Books	1.Biometrics: Concepts and Applications by G.R Sinha and SandeepB.Patil - Wiley-2013			
Reference Books	1.Guide to Biometrics by Ruud M. Bolle - SharathPankanti- Nalinik.Ratha- Andrew W.Senior- Jonathan H. Connell - Springer 2009 2. Introduction to Biometrics by Anil k. Jain- Arun A. Ross- KarthikNandakumar 3.Hand book of Biometrics by Anil K. Jain- Patrick Flynn- ArunA.Ross.			
Website Link	1. https://www.tutorialspoint.com/biometrics/index.html 2.. https://www.javatpoint.com/biometrics-tutorial 3.. https://www.thalesgroup.com/en/markets/dig			
Self-Study Material	https://www.thalesgroup.com/en/markets/digital-identity and security/government/biometrics/facial-recognition			
	L-Lecture	**T-Tutorial**	**P-Practical**	**C-Credit**

B. Sc. Information Technology– Syllabus LOCF – CBCS with effect from 2023-2024 Onwards

Course Code	Course Title	Course Type	Sem	Hours	L	T	P	C
23M_UITS06/ 23M_UITN06	Biometrics	NMEC		2	2	-	-	2

CO-PO Mapping

CO Number	PO 1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	M	M	M	L	S	M	M	M	L
CO2	S	M	L	M	M	S	M	M	M	L
CO3	M	M	S	M	M	M	M	M	M	M
CO4	S	M	M	M	S	M	M	M	M	M
CO5	L	M	M	S	S	L	M	M	M	S

Level of Correlation between CO and PO	L-LOW	M- MEDIUM	S-STRONG

Tutorial Schedule	Conducting Group Discussion- Class test
Teaching and Learning Methods	Handling classes through chalk & talk method- PPT presentation
Assessment Methods	Attendance- Assignment- CIA I- CIA II and ESE

Designed By	Verified By	Approved By
E.Jamuna	HOD P Subramaniam	Member Secretary Dr.S.Shahitha

B.Sc. Information Technology– Syllabus LOCF – CBCS with effect from 2023-2024 Onwards								
Course Code	**Course Title**	**Course Type**	**Sem.**	**Hours**	**L**	**T**	**P**	**C**
23M_UITS07/ 23M_UITN07	**Cyber Forensics**	**NMEC**		**2**	**2**	**-**	**-**	**2**
Objective	To enable students to Understand the definition of computer forensics fundamentals and study about the Types of Computer Forensics Evidence							

Unit	Course Content	Knowledge Levels	Sessions
I	**Overview of Computer Forensics Technology: Computer Forensics Fundamentals:** What is Computer Forensics Use of Computer Forensics in Law Enforcement – Computer Forensics Assistance to Human Resources/Employment Proceedings – Computer Forensics Services– Benefits of professional Forensics Methodology- Steps taken by Computer Forensics Specialists – Types of Computer **Forensics Technology**: Types of Business Computer Forensic- Technology – Types of Military Computer Forensic Technology – Types of Law Enforcement – Computer Forensic. Technology – Types of Business Computer Forensic Technology.	K1	6
II	**Computer Forensics Evidence and capture: Data Recovery**: Data Recovery Defined-Data Back–up and Recovery-The Role of Back – up in Data Recovery- The Data – Recovery Solution. **Evidence Collection and Data Seizure:** Collection Options – Obstacles- Types of Evidence- The Rules of Evidence – Volatile Evidence – General Procedure- Collection and Archiving- Methods of Collections- Artefacts- Collection Steps. **Controlling Contamination:** The chain of custody.	K2	6
III	**Duplication and Preservation of Digital Evidence:** Processing steps- Legal Aspects of collecting and Preserving Computer forensic Evidence. **Computer image Verification and Authentication:** Special needs of Evidential Authentication – Practical Consideration – Practical Implementation.	K3	4
IV	**Computer Forensics Analysis:** Discovery of Electronic Evidence: Electronic Document Discovery: A Powerful New Litigation Tool. **Identification of Data:** Time Travel – Forensic Identification and Analysis of Technical Surveillance Devices.	K4	4
V	**Reconstructing Past Events:** How to Become a Digital **Detective**- Useable File Formats – Unusable File Formats – Converting Files. **Networks:** Network Forensics Scenario – a technical approach – Destruction Of E–Mail – Damaging Computer Evidence – Documenting The Intrusion on Destruction of Data- System Testing. **Current Trends-*Digital Forensics***	K5	4

	…… Self Study		
Course Outcome	CO1: Define the definition of computer forensics fundamentals.	K1	
	CO2: Understand the different types of computer forensics technology.	K2	
	CO3: Apply various computer forensics systems.	K3	
	CO4: Analyze the methods for data recovery- evidence collection and data seizure.	K4	
	CO5: Evaluate your Gain knowledge of duplication and preservation of digital evidence.	K5	

Learning Resources	
Text Books	1. John R. Vacca- ―Computer Forensics: Computer Crime Investigation‖- 3/E-Firewall Media- New Delhi- 2002.
Reference Books	1. Nelson- Phillips Enfinger- Steuart-―Computer Forensics and Investigations‖ Enfinger-Steuart- CENGAGE Learning- 2004.
Website Link	1. https://www.vskills.in 2. https://www.hackingarticles.in/best-of-computer-forensics-tutorials/
Self Study Material	https://icssindia.in/blog/future-trends-in-cyber-security-and-digital-forensics/

	L-Lecture	**T-Tutorial**	**P-Practical**	**C-Credit**

B.Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards

Course Code	**Course Title**	**Course Type**	**Sem**	**Hours**	**L**	**T**	**P**	**C**
23M_UITS07/ 23M_UITN07	**Cyber Forensics**	**NMEC**		**2**	**2**	**-**	**-**	**2**

CO-PO Mapping

CO Number	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PSO1**	**PSO2**	**PSO3**	**PSO4**	**PSO5**
CO1	S	M	S	S	L	S	M	M	S	L
CO2	S	M	M	M	M	S	M	S	M	L
CO3	S	S	M	M	M	M	S	M	M	M
CO4	M	M	S	M	S	M	M	M	S	M
CO5	L	M	M	M	S	L	M	M	M	S
Level of Correlation between CO and PO				L-LOW		M- MEDIUM			S-STRONG	

Tutorial Schedule	Conducting Group Discussion- Class test
Teaching and Learning Methods	Handling classes through chalk & talk method- PPT presentation
Assessment Methods	Attendance- Assignment- CIA I- CIA II and ESE

Designed By	**Verified By**	**Approved By**
E.Jamuna	HOD P Subramaniam	Member Secretary Dr.S.Shahitha

B.Sc. Information Technology– Syllabus LOCF – CBCS with effect from 2023-2024 Onwards								
Course Code	**Course Title**	**Course Type**	**Sem**	**Hours**	**L**	**T**	**P**	**C**
23M_UITS08/ 23M_UITN08	**Pattern Recognition**	**NMEC**		**2**	**2**	**-**	**-**	**2**
Objective	Student to learn the various Syntactical Pattern recognition techniques							

Unit	Course Content	Knowledge Levels	Sessions
I	**Pattern Recognition Overview**: Pattern recognition Classification and Description-Patterns and feature Extraction with Examples-Training and Learning in PR systems-Pattern recognition Approaches	K1	6
II	**Statistical Pattern Recognition**: Introduction to statistical Pattern Recognition-supervised Learning using Parametric and Non-Parametric Approaches.	K2	6
III	**Linear discriminant functions and Unsupervised learning and clustering**: Introduction-Discrete and binary Classification Problems- Techniques to directly Obtain linear Classifiers - Formulation of Unsupervised Learning Problems-Clustering for unsupervised learning and classification.	K3	4
IV	**Syntactic Pattern Recognition**: Overview of Syntactic Pattern Recognition-Syntactic recognition via parsing and other grammars–Graphical Approaches to syntactic pattern recognition Learning via grammatical inference.	K4	4
V	**Neural Pattern Recognition**: Introduction to Neural Networks-Feed-forward Networks and training by Back Propagation Content Addressable Memory Approaches and Unsupervised Learning in Neural PR. **Current Trends- Face recognition and visual search**	K5	4
	…… Self Study		
Course Outcome	CO1: Remember the concepts- importance- application and the process of developing Pattern recognition over view.	K1	
	CO2: Understand the basic knowledge and understanding about parametric and non-parametric related concepts.	K2	
	CO3: Apply the framework of frames and bit images to Animations.	K3	
	CO4: Analysis the multimedia projects and stages of requirement in phases of project.	K4	
	CO5: Evaluate the concept of cost involved in multimedia planning- designing- and producing	K5	
Learning Resources			

Text Books	1. Robert Schalkoff- ―Pattern Recognition: Statistical Structural and Neural Approaches‖- John wiley& sons. 2. Duda R.O.- P.E.Hart& D.G Stork- ― Pattern Classification‖- 2nd Edition- J.Wiley
Reference Books	1. Earl Gose- Richard johnsonbaugh- Steve Jost- ―Pattern Recognition and Image Analysis‖- Prentice Hall of India- Pvt Ltd- New Delhi.
Website Link	1. https://www.mygreatlearning.com/blog/pattern-recognition-machine-learning/
Self-Study Material	https://www.geeksforgeeks.org/pattern-recognition-introduction/

L-Lecture	**T-Tutorial**	**P-Practical**	**C-Credit**

B.Sc. Information Technology– Syllabus LOCF – CBCS with effect from 2023-2024 Onwards

Course Code	Course Title	Course Type	Sem	Hours	L	T	P	C
23M_UITS08/ 23M_UITN08	Pattern Recognition	NMEC		2	2	-	-	2

CO-PO Mapping

CO Number	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	M	M	M	L	S	M	M	M	L
CO2	S	M	M	M	M	S	M	M	M	L
CO3	M	M	M	M	M	M	M	M	M	M
CO4	M	M	M	M	S	M	M	M	M	M
CO5	L	M	M	S	S	L	M	M	M	S

Level of Correlation between CO and PO	L-LOW	M- MEDIUM	S-STRONG

Tutorial Schedule	Conducting Group Discussion- Class test
Teaching and Learning Methods	Handling classes through chalk & talk method- PPT presentation
Assessment Methods	Attendance- Assignment- CIA I- CIA II and ESE

Designed By	Verified By	Approved By
S.Niresh	HOD P Subramaniam	Member Secretary Dr.S.Shahitha

B.Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards								
Course Code	**Course Title**	**Course Type**	**Sem**	**Hours**	**L**	**T**	**P**	**C**
23M_UITS09/ 23M_UITN09	**Simulation and Modeling**	**NMEC**		**2**	**2**	**-**	**-**	**2**
Objective	Students Understand the concept of Entity modelling- Path planning and Algorithms							

Unit	Course Content	Knowledge Levels	Sessions
I	**Introduction To Modeling & Simulation:**What is Modeling and Simulation – Complexity Types – Model Types – Simulation Types – M&S Terms and Definitions Input Data Analysis – Simulation Input Modeling – Input Data Collection - Data Collection Problems -Input Modeling Strategy - Histograms –Probability Distributions - Selecting a Probability Distribution.	K1	6
II	**Random Variate Generation** : Random Numbers – Random Number Generators – General principles – Inverse Transform Method –Acceptance Rejection Method –Composition Method – Relocate and Rescale Method - Specific distributions-Output Data Analysis – Introduction -Types of Simulation With Respect to Output Analysis - Stochastic Process and Sample Path - Sampling and Systematic Errors - Mean- Standard Deviation and Confidence Interval - Analysis of Finite- Horizon Simulations - Single Run - Independent Replications - Sequential Estimation – Analysis of Steady-State Simulations - Removal of Initialization Bias (Warm-up Interval) - Replication-Deletion Approach - Batch-Means Method .	K2	6
III	**Comparing Systems via Simulation**: Introduction – Comparison Problems - Comparing Two Systems - Screening Problems - Selecting the Best - Comparison with a Standard - Comparison with a Fixed Performance Discrete Event Simulations – Introduction - Next-Event Time Advance - Arithmetic and Logical Relationships - Discrete-Event Modeling Approaches – Event- Scheduling Approach – Process Interaction Approach.	K3	4

IV	**Entity Modeling** :Entity Body Modeling – Entity Body Visualization – Entity Body Animation – Entity Interaction Modeling – Building Modeling Distributed Simulation – High Level Architecture (HLA) – Federation Development and Execution Process (FEDEP) – SISO RPR FOM Behavior Modeling- General AI Algorithms - Decision Trees Neural Networks - Finite State Machines - Logic Programming - Production Systems – Path Planning - Off-Line Path Planning - Incremental Path Planning - Real-Time Path Planning – Script Programming -Script Parsing – Script Execution.	K4	4
V	**Optimization Algorithms:** Genetic Algorithms – Simulated Annealing Examples: Sensor Systems Modeling – Human Eye Modeling – Optical Sensor Modeling – Radar Modeling. **Current Trends-** Elevating met averse virtual reality experiences through network-integrated neuro-fuzzy emotion recognition and adaptive content generation algorithms	K5	4
	…… Self Study		
Course Outcome	CO1: Remember the Modeling & Simulation- Input Data Analysis and Modeling.	K1	
	CO2: Understand the Random Variate and Number Generation. Analysis of Simulations and methods.	K2	
	CO3: Apply Systems via Simulation	K3	
	CO4: Analysis Entity Body Modeling- Visualization- Animation.	K4	
	CO5: Evaluate the Algorithms and Sensor Modeling.	K5	

Learning Resources				
Text Books	1. Jerry Banks- ―Handbook of Simulation: Principles- Metho dology Advances- Applications- and Practice‖- John Wiley & Sons- Inc.- 1998. 2. George S. Fishman- ―Discrete-Event Simulation: Modeling- Programming and Analysis‖- Springer-Verlag New York- Inc.- 2001.			
Reference Books	1. Andrew F. Seila- Vlatko Ceric- PanduTadikamalla- ―Applied Simulation Modeling‖- Thomson Learning Inc.- 2003.			
Website Link	1. https://www.tutorialspoint.com/modelling_and_simulation/index.html 2. https://www.javatpoint.com/verilog-simulation-basics			
Self Study Material	https://onlinelibrary.wiley.com/doi/full/10.1002/eng2.12894			
	L-Lecture	**T-Tutorial**	**P-Practical**	**C-Credit**

B.Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards									
Course Code	**Course Title**	**Course Type**	**Sem**	**Hours**	**L**	**T**	**P**	**C**	
23M_UITS09/ 23M_UITN09	**Simulation and Modeling**	**NMEC**		**2**	**2**	**-**	**-**	**2**	

CO-PO Mapping										
CO Number	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PSO1**	**PSO2**	**PSO3**	**PSO4**	**PSO5**
CO1	S	M	M	M	L	S	M	M	M	L
CO2	S	M	M	M	M	S	M	M	S	L
CO3	M	M	M	M	M	M	S	S	M	M
CO4	M	M	M	M	S	M	M	M	M	M
CO5	L	M	M	S	S	L	M	M	M	S
Level of Correlation between CO and PO				L-LOW		M- MEDIUM			S-STRONG	

Tutorial Schedule	Conducting Group Discussion- Class test
Teaching and Learning Methods	Handling classes through chalk & talk method- PPT presentation
Assessment Methods	Attendance- Assignment- CIA I- CIA II and ESE

Designed By	**Verified By**	**Approved By**
S.Niresh	HOD P Subramaniam	Member Secretary Dr.S.Shahitha

B.Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards								
Course Code	**Course Title**	**Course Type**	**Sem**	**Hours**	**L**	**T**	**P**	**C**
23M_UITN10	**PHP Programming**	**NMEC**		**2**	**2**	**-**	**-**	**2**
Objective	Students should learn the necessary concepts for working with the files using PHP.							

Unit	Course Content	Knowledge Levels	Sessions
I	Introduction to PHP -Basic Knowledge of websites -Introduction of Dynamic Website -Introduction to PHP -Scope of PHP - XAMPP and WAMP Installation.	K1	6
II	PHP Programming Basics -Syntax of PHP -Embedding PHP in HTML - Embedding HTML in PHP. Introduction to PHP Variable -Understanding Data Types -Using Operators - Using Conditional Statements -If()- else if() and else if condition Statement.	K2	6
III	Switch() Statements -Using the while() Loop -Using the for() Loop PHP Functions. PHP Functions -Creating an Array - Modifying Array Elements –Processing Arrays with Loops - Grouping Form Selections with Arrays -Using Array Functions.	K3	4
IV	PHP Advanced Concepts -Reading and Writing Files -Reading Data from a File.	K3	4
V	Managing Sessions and Using Session Variables -Destroying a Session -Storing Data in Cookies -Setting Cookies. **Current Trends *Zend Framework***	K3	**4**
	…… Self Study		
Course Outcome	CO1: Remember PHP scripts to handle HTML forms	K1	
	CO2: Understand regular expressions including modifiers- operators- and metacharacters.	K2	
	CO3: Apply PHP Program using the concept of array.	K3	
	CO4: Analysis PHP programs that use various PHP library functions	K3	
	CO5:Evaluate and Manipulate files and directories.	K5	

Learning Resources	
Text Books	1. Head First PHP & MySQL: A Brain-Friendly Guide- 2009-Lynn mighley and Michael Morrison. 2. The Joy of PHP: A Beginner's Guide to Programming Interactive Web Applications with PHP and MySQL- Alan Forbes.
Website Link	1. PHP: The Complete Reference-Steven Holzner. 2. DT Editorial Services (Author)- ―HTML 5 Black Book (Covers CSS3- JavaScript- XML- XHTML- AJAX- PHP- jQuery)‖- Paperback 2016- 2ndEdition.

Self-Study Material	1. https://www.simplilearn.com/learn-php-basics-free-course-			
	L-Lecture	**T-Tutorial**	**P-Practical**	**C-Credit**

B.Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards

Course Code	Course Title	Course Type	Sem	Hours	L	T	P	C
23M_UITN10	PHP Programming	NMEC		2	2	-	-	2

CO-PO Mapping

CO Number	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M	S	M	S	S	S	M	L	M	L
CO2	S	M	S	M	M	S	S	M	M	S
CO3	M	M	S	S	S	S	S	M	S	S
CO4	M	S	S	M	S	S	M	S	M	M
CO5	S	M	M	S	S	S	M	M	M	S

Level of Correlation between CO and PO	L-LOW	M- MEDIUM	S-STRONG

Tutorial Schedule	Conducting Group Discussion- Class test
Teaching and Learning Methods	Handling classes through chalk & talk method- PPT presentation
Assessment Methods	Attendance- Assignment- CIA I- CIA II and ESE

Designed By	Verified By	Approved By
S.Niresh	HOD P Subramaniam	Member Secretary Dr.S.Shahitha

B.Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards								
Course Code	**Course Title**	**Course Type**	**Sem.**	**Hours**	**L**	**T**	**P**	**C**
23M_UITN11	**WEB DESIGNING**	**NMEC**		**2**	**2**	**-**	**-**	**2**
Objective	Student should know the concept of JavaScript and identify and understand the goals and objectives of the Ajax							

Unit	Course Content	Knowledge Levels	Sessions
I	**HTML:** HTML-Introduction-tag basics- page structure- adding comments working with texts- paragraphs and line break. Emphasizing test- heading and horizontal rules-list-font size- face and color alignment links-tables-frames.	K1	6
II	**Forms & Images Using Html: Graphics:** Introduction-How to work efficiently with images in web pages- image maps- GIF animation- adding multimedia- data collection with html forms textbox- password- list box- combo box- text area- tools for building web page front page.	K2	6
III	**XML & DHTML**: Cascading style sheet (CSS)-what is CSS-Why we use CSS-adding CSS to your web pages-Grouping styles-extensible markup language (XML).	K2	4
IV	**MDynamic HTML:** Document object model (DCOM)-Accessing HTML & CSS through DCOM Dynamic content styles & positioning-Event bubbling-data binding. **JavaScript:** Client-side scripting- What is JavaScript- How to develop JavaScript- simple JavaScript- variables- functions- conditions-loops and repetition.	K3	4
V	Advance script- JavaScript and objects- JavaScript own objects- the DOM and web browser environments- forms and validations. ***CURRENT TRENDS - AngularJS***	K3	4
	…… Self Study		
Course Outcome	CO1: Remember the knowledge of HTML	K1	
	CO2: Apply the develop and publish Web pages using Hypertext Markup Language (HTML).	K3	
	CO3: understand to optimize page styles and layout with Cascading Style Sheets (CSS).	K2	
	CO4: Analysis to develop a java script	K4	
	CO5: Evaluate to develop web application using Ajax.	K5	

Learning Resources	
Text Books	1. Pankaj Sharma —Web Technology- SkKataria& Sons Bangalore 2011. 2. Mike Mcgrath —Java Script- Dream Tech Press 2006- 1st Edition. 3. Achyut S Godbole&AtulKahate- —Web Technologies- 2002- 2nd Edition.

Reference Books	1. Laura Lemay- RafeColburn - Jennifer Kyrnin- ―Mastering HTML- CSS & Javascript Web Publishing‖- 2016. 2. DT Editorial Services (Author)- ―HTML 5 Black Book (Covers CSS3- JavaScript- XML- XHTML- AJAX- PHP- jQuery)- Paperback 2016- 2nd Edition.
Website Link	1. NPTEL & MOOC courses titled Web Design and Development. 2. https://www.geeksforgeeks.org/
Self-Study Material	1. https://en.wikipedia.org/wiki/Natural_language_processing 2. https://www.sciencedirect.com/science/article/abs/pii/S0899707124000949

	L-Lecture	**T-Tutorial**	**P-Practical**	**C-Credit**

B.Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards

Course Code	**Course Title**	**Course Type**	**Sem**	**Hours**	**L**	**T**	**P**	**C**
23M_UITN11	**WEB DESIGNING**	**SEC**		**2**	**2**	**-**	**-**	**2**

CO-PO Mapping

CO Number	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PSO1**	**PSO2**	**PSO3**	**PSO4**	**PSO5**
CO1	S	M	L	M	M	S	S	M	S	S
CO2	S	S	M	M	S	S	M	M	S	S
CO3	S	S	M	S	S	S	S	M	S	S
CO4	S	M	S	M	S	S	M	M	S	S
CO5	S	M	M	M	S	S	S	M	S	S

Level of Correlation between CO and PO	L-LOW	M- MEDIUM	S-STRONG

Tutorial Schedule	Conducting Group Discussion- Class test
Teaching and Learning Methods	Handling classes through chalk & talk method- PPT presentation
Assessment Methods	Attendance- Assignment- CIA I- CIA II and ESE

Designed By	**Verified By**	**Approved By**
N.Ramya	HOD P Subramaniam	Member Secretary Dr.S.Shahitha

B.Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards								
Course Code	**Course Title**	**Course Type**	**Sem.**	**Hours**	**L**	**T**	**P**	**C**
23_MUITN12	**MULTIMEDIA SYSTEMS**	**NMEC**		**2**	**2**	**-**	**-**	**2**
Objective	To study about the Image File Formats- Sounds Audio File Formats.							

Unit	Course Content	Knowledge Levels	Sessions
I	**Introduction**: Multimedia Definition-Use Of Multimedia Delivering Multimedia- Text: About Fonts and Faces - Using Text in Multimedia -Computers and Text Font Editing and Design Tools Hypermedia and Hypertext.	K1	6
II	**Images**: Plan Approach - Organize Tools - Configure Computer Workspace -Making Still Images - Color - Image File Formats. Sound: The Power of Sound -Digital Audio- Midi Audio Midi vs. .Digital Audio-Multimedia System Sounds Audio File Formats -Vaughan's Law of Multimedia Minimums - Adding Sound to Multimedia Project	K2	6
III	**Animation:** The Power of Motion-Principles of Animation - Animation by Computer - Making Animations that Work. Video: Using Video - Working with Video and Displays Digital Video Containers-Obtaining Video Clips Shooting and Editing Video.	K3	4
IV	**Making Multimedia**: The Stage of Multimedia Project - The Intangible Needs -The Hardware Needs - The Software Needs - An Authoring Systems Needs Multimedia Production Team.	K4	4
V	**Planning and Costing**: The Process Making Multimedia-Scheduling-Estimating - RFPs and Bid Proposals. Designing and Producing - Content and Talent: Acquiring Content Ownership of Content Created for Project Acquiring Talent. **Current Trends: Immersive experiences with AR and VR**	k5	4
	…… Self Study		
Course Outcome	CO1:Remember the concepts- importance- application and the process of developing multimedia	K1	
	CO2: Understand have basic knowledge and understanding about image related processings	K2	
	CO3:To Apply the framework of frames and bit images to animations	K3	
	CO4: Analyse about the multimedia projects and stages of requirement in phases of project.	K4	

	CO5:Evaluate the concept of cost involved in multimedia planning- designing- and producing	K5	

Learning Resources	
Text Books	1. TayVaughan-"Multimedia:MakingItWork"-8thEdition-Osborne/McGrawHill-2001.
Reference Books	1.RalfSteinmetz&KlaraNahrstedt"MultimediaComputing-Communication& Applications"-PearsonEducation-2012
Website Link	1. https://www.geeksforgeeks.org/multimedia-systems-with-features-or-characteristics/
Self-Study Material	https://www.thinkwithgoogle.com/intl/en-emea/future-of marketing/emergingtechnology/vr-ar-mr-and-what-does-immersion-actually-mean/

L-Lecture	**T-Tutorial**	**P-Practical**	**C-Credit**

B .Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards

Course Code	**Course Title**	**Course Type**	**Sem**	**Hours**	**L**	**T**	**P**	**C**
23_MUITN11	**Multimedia Systems**	**NMEC**		**2**	**2**	**-**	**-**	**2**

CO-PO Mapping

CO Number	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PSO1**	**PSO2**	**PSO3**	**PSO4**	**PSO5**
CO1	S	M	M	M	L	S	M	M	M	L
CO2	S	M	L	M	M	S	M	M	M	L
CO3	M	M	S	M	M	M	M	M	M	M
CO4	S	M	M	M	S	M	M	M	M	M
CO5	L	M	M	S	S	L	M	M	M	S

Level of Correlation between CO and PO	L-LOW	M- MEDIUM	S-STRONG

Tutorial Schedule	Conducting Group Discussion- Class test
Teaching and Learning Methods	Handling classes through chalk & talk method- PPT presentation
Assessment Methods	Attendance- Assignment- CIA I- CIA II and ESE

Designed By	**Verified By**	**Approved By**
E.Jamuna	HOD P Subramaniam	Member Secretary Dr.S.Shahitha

B.Sc. Information Technology– Syllabus LOCF – CBCS with effect from 2023-2024 Onwards								
Course Code	**Course Title**	**Course Type**	**Sem**	**Hours**	**L**	**T**	**P**	**C**
23M_UITN13	**Organizational Behavior**	**NMEC**		**2**	**2**	**-**	**-**	**2**
Objective	Student able to understanding of Group Behavior- Organizational Change- Conflict and Power							

Unit	Course Content	Knowledge Levels	Sessions
I	**Introduction** : Concept of Organizational Behavior (OB): Nature-Scope and Role of OB- Disciplines that contribute to OB-Opportunities for OB (Globalization-Indian workforce diversity-customer service-innovation and change- networked organizations- work-life balance-people skills-positive work environment-ethics)	K1	6
II	**Individual Behavior:** Learning- attitude and Job satisfaction: Concept of learning-conditioning-shaping and reinforcement. Concept of attitude-components-behavior and attitude. **Job satisfaction**: causation-impact of satisfied employees on workplace. **Motivation**: Concept-Theories (Hierarchy of needs- X and Y-Two factor- McClelland-Goal setting-Self-efficacy-Equity theory)-Job characteristics model- Redesigning jobs-Personality and Values : Concept of personality-Myers-Briggs Type Indicator (MBTI)-Big Five model. Relevance of values- Linking personality and values to the workplace (person-job fit- person-organization fit)Perception- Decision Making : Perception and Judgments; Factors- Linking perception to individual decision making:	K2	6
III	**Group Behavior** : Groups and Work Teams : Concept : Five Stage model of group development- Group norms-cohesiveness-Group think and shift -Team- types of teams- Creating team players from individuals and team based work(TBW)Leadership : Concept- Trait theories; Behavioral theories (Ohio and Michigan studies); Contingency theories (Fiedler-Hersey and Blanchard- Path-Goal)	K3	4
IV	**Organizational Culture And Structure** : Concept of culture-Impact (functions and liability)- Creating and sustaining culture- Concept of structure-Prevalent organizational designs-New design options	K4	4
V	**Organisational change- conflict and power:** Forces of change; Planned change; Resistance; Approaches (Lewin's model- Organizational development);. Concept of	K5	4

	conflict- Conflict process; Types- Functional/ Dysfunctional. Introduction to power and politics. **Current Trends-Employee Engagement:** The Key to Improving Performance		
	…… Self Study		
Course Outcome	CO1: Remember Organizational Behavior- Understand the opportunity through OB.	K1	
	CO2: To Understand self-awareness- motivation- leadership and learning Theories at workplace.	K2	
	CO3: To apply the complexities and solutions of group behavior.	K3	
	CO4: To Analysis and bring positive change in the culture of the organization.	K4	
	CO5: To Evaluate a congenial climate in the organization	K5	

Learning Resources	
Text Books	1. NeharikaVohra Stephen P. Robbins- Timothy A. Judge - *Organizational Behaviour*- Pearson Education- 18th Edition- 2022. 2. Fred Luthans- Organizational Behaviour- Tata McGraw Hill- 2017.
Reference Books	1. Uma Sekaran- Organizational Behaviour Text & cases- 2nd edition- Tata McGraw Hill Publishing CO. Ltd. 2. GangadharRao- Narayana- V.S.P Rao- Organizational Behaviour 1987- Reprint 2000- Konark Publishers Pvt. Ltd- 1st edition.
Website Link	https://psychopedia.in/trends-in-organizational-behavior/ https://www.researchgate.net/publication/358356661_New_Trends_in_Organizational_Behavior
Self Study Material	https://www.geeksforgeeks.org/organisational-behaviour-concept-nature-and-role/

	L-Lecture	**T-Tutorial**	**P-Practical**	**C-Credit**

B.Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards									
Course Code	**Course Title**	**Course Type**	**Sem**	**Hours**	**L**	**T**	**P**	**C**	
23M_UITN13	**Organizational Behavior**	**NMEC**		**2**	**2**	**-**	**-**	**2**	

CO-PO Mapping

CO Number	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	M	M	M	L	S	M	M	M	L
CO2	S	M	M	M	M	S	M	M	M	L
CO3	M	M	M	M	M	M	M	M	M	M
CO4	M	M	M	M	S	M	S	S	M	M
CO5	L	M	M	S	S	L	M	M	M	S

Level of Correlation between CO and PO	L-LOW	M- MEDIUM	S-STRONG

Tutorial Schedule	Conducting Group Discussion- Class test
Teaching and Learning Methods	Handling classes through chalk & talk method- PPT
Assessment Methods	Attendance- Assignment- CIA I- CIA II and ESE

Designed By	Verified By	Approved By
P.Muthamilselvi	HOD P Subramaniam	Member Secretary Dr.S.Shahitha

B.Sc.-Information Technology Syllabus LOCF-CBCS with effect from 2023-2024 Onwards								
Course Code	**Course Title**	**Course Type**	**Sem**	**Hours**	**L**	**T**	**P**	**C**
23M5UITIS1	**INTERNSHIP TRAINING**	**INTERNSHIP**	**V**	**-**	**-**	**-**	**-**	**2**
Objective	Student can able to give optimum exposure on the practical aspects of computer information technology in Industries							

Guidelines for Internship Programme	**Knowledge Levels**	**Sessions**
1. Duration of the internship training is 15 days during the Vacation which falls at the end of the 5th Semester. 2. The departments concerned will prepare on exhaustive panel of Institutions- Industries and practitioners. 3. The individual student has to identify the institution / industry / practitioners of their choice and inform the same to the HOD / Staff-in-Charge. 4. The students hereafter will be called Trainees should maintain a work diary in which the daily work done should be entered and the same should be Attested by the Section in-charge. 5. The departments should prepare an outline of the job to be done-Sections in which they have to be attached both in the office as well as in the field. 6. The trainees should strictly adhere to the rules and regulations and office Timings of the institutions to which they are attached. 7. The trainees have to obtain a certificate on successful completion of the Internship from the Chief Executive of the organization. 8. A Staff member of a Department (Guide) will be monitoring the Performance of the Candidate. 9. Schedule of visit to be made by the staff is to be prepared by the HOD / Staff-in-charge. 10. Report writing manual and format should be prepared by the respective Departments. 11. All model forms are to be attached wherever it is necessary. 12. Report evaluation: External Viva-Voce examination will be conducted and the maximum mark is 100. 13. Report should be properly submitted after the completion of internship Training.	K4-K5	

Course Outcome	**CO1:** Analyze and Evaluate to test the theoretical learning in practical situations by accomplishing the tasks assigned during the internship period.	K5	

Learning Resources	
Website Link	https://www.tutorialspoint.com/r/index.htm https://www.javatpoint.com/net-framework https://www.w3schools.com/java/java_intro.asp https://www.w3schools.com/r/

	L-Lecture	T-Tutorial	P-Practical	C-Credit

B.Sc.-Information Technology Syllabus LOCF-CBCS with effect from 2023-2024 Onwards								
Course Code	**Course Title**	**Course Type**	**Sem**	**Hours**	**L**	**T**	**P**	**C**
23M5UITIS1	**INTERNSHIP TRAINING**	**INTERNSHIP**	**V**	**-**	**-**	**-**	**-**	**2**

CO-PO Mapping

CO Number	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	S	S	S	S	S	S	S	S	S

Level of correlation between CO and PO	L-LOW	M-MEDIUM	S-STRONG

Tutorial Schedule	-
Teaching and Learning Methods	Working with programming languages such as C++- Python and Java
Assessment Methods	CIA -100 % 1. Work Diary – 25% 2. Training Report and Viva-voce – 75%

Designed By	Verified By	Approved By
S.Jothivel	HOD P Subramaniam	Member Secretary Dr.S.Shahitha

B.Sc.- Information Technology Syllabus LOCF-CBCS with effective from 2023-2024 Onwards								
Course Code	**Course Title**	**Course Type**	**Sem**	**Hours**	**L**	**T**	**P**	**C**
23M6UITPR1	**PROJECT WORK**	**PROJECT**	**VI**	**5**	**5**			**4**
Objective	The aim of the mini project is that the student has to understand the real time software development environment.							

Unit	Course Content	Knowledge Levels	Sessions

Project Planning:

B.Sc (Information Technology)/ Project is an involved exercise- which has to be planned well in advance. The topic should be chosen in the beginning of final year itself. Related reading training and discussions of project should be completed in the first term of final year.

I Selection of Team

To meet the stated objectives- it is imperative that mini project is done through a team effort. Though it would be ideal to select the team members at random and this should be strongly recommended- due to practical consideration students may also be given the choice of forming themselves into teams with Two members. A team leader shall be selected. Team shall maintain the minutes of meeting of the team members and ensure that tasks have been assigned to every team member in writing. Team meeting minutes shall form a part of the project report. Even if students are doing project as groups- each one must independently take different modules of the work and must submit the report.

II Selection of Tools

No restrictions shall be placed on the students in the choice of platform/tools/languages to be utilized for their project work- though open source is strongly recommended- wherever possible. No value shall be placed on the use of tools in the evaluation of the project.

III REGULATIONS OF PROJECT WORK

Three copies of the project report must be submitted by each student..

- The final outer dimensions of the project report shall be 21cm X 30 cm.
- Only hard binding should be done. The text of the report should be set in 12
- pt- Times New Roman- 1.5 spaced. Headings should be set as follows: CHAPTER HEADINGS 16 pt- Arial-
- Bold- All caps- Centered

Section Headings 14 pt Bookman old style- Bold- Left adjusted. Section Sub-heading 12 pt- Bookman old style.

- Title of figures tables etc are done in 12 point- Times New Roman- Italics-
- centered. Only 1.5 space need be left above a section or subsection heading and no
- space may be left after them. References shall be IEEE format (see any IEEE magazine for detail) While

- doing the project keep note of all books you refer- in the correct format and include them in alphabetical order in your reference list. The Candidate should submit the filled in format as given in Annexure-I to the
- department for approval during the First Week of December. Periodically the project should be reviewed

.· A Sample format is enclosed in Annexure-II.

- Format of the Title page and Certificate are enclosed in Annexure III.

1. The students may use power point presentation during their viva voce examination.

Course Outcome	CO1: Understand of research idea	K1	
	CO2: Analyze of problem solving skills	K2	
	CO3:Analyze sources for conduct of Research	K3	
	CO4: Evaluate the research report	K4	
	CO5:Create the research report	K4	

Learning Resources

Text Books	1. Bert Bates- Karthy Sierra - Eric Freeman- Elisabeth Robson- "Head First Design Patterns"- O" REILLY Media Publishers. 0. Mathew Mac Donald- "ASP.NET Complete Reference"- TMH 2005.
Reference Books	1. Jan Graba- "An Introduction to Network Programming with Java- Java 7 Compatible"- 3rd Edition-Springer. 2. Crouch Matt J- "ASP.NET and VB.NET Web Programming"- Addison Wesley
Website Link	https://www.tutorialspoint.com/r/index.htm https://www.javatpoint.com/net-framework https://www.w3schools.com/java/java_intro.asp https://www.w3schools.com/r/

	L-Lecture	T- Tutorial	P-Practical		C-Credit		

B.Sc.- Information Technology Syllabus LOCF-CBCS with effective from 2023-2024 Onwards								
Course Code	**Course Title**	**Course Type**	**Sem**	**Hours**	**L**	**T**	**P**	**C**
23M6UITPR1	**PROJECT WORK**	**PROJECT**	**VI**	**5**	**5**			**4**

CO-PO Mapping

CO Number	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M	M	M	M	S	M	M	S	S	S
CO2	S	S	S	S	S	M	S	S	S	S
CO3	S	S	S	S	S	S	S	S	M	M
CO4	S	S	S	M	S	S	S	S	M	M
CO5	M	M	M	S	S	M	M	S	S	S

Level of Correlation between CO and PO	L-LOW	M-MEDIUM	S-STRONG

Tutorial Schedule	-
Teaching and Learning Methods	Working with programming languages such as R- Python- Java and .Net.
Assessment Methods	Attendance- Review / Work Diary- Final Report and Viva Voce

Designed By	Verified By	Approved By
S.Jothivel	HOD P Subramaniam	Member Secretary Dr.S.Shahitha

B.Sc. Information Technology Syllabus LOCF-CBCS with effective from 2023-2024 Onwards								
Course Code	**Course Title**	**Course Type**	**Sem**	**Hours**	**L**	**T**	**P**	**C**
23M6UITOE1	**Information Technology for Competitive Examination**	**Professional Competency Skills**	**VI**			**2**		**2**
Objective	Creating the awareness on competitive examination among students. Imparting knowledge about the appearing for Competitive Examination and it impacts and developing an attitude of appearing for such exams.							

Unit	Course Content	Knowledge Levels	Sessions
	This course deals with the question related to Software Engineering- Internet of Things- Operating System- Computer Architecture- Database Management System- Computer Networks- Programming Languages- Java- Algorithms- Artificial Intelligence- and Mobile Computing. Major emphasis has been put forth to include recent developments in the subjects. This course aims to give a holistic view of all the topics which comprised of some factual text points- multiple choice questions (MCQ)- it is extremely suitable for students pursuing their higher degree in University/institute for their entrance exams- students preparing for various national and state level competitive entrance exams such as TANCET- IBPS- SSC for creating MCQ pattern.		
	1. Objective type online examination will be conducted at the end of 4th semester. 0. Questions must be taken from all previous question papers of TANCET-IBPS And SSC. 0. Test critical thinking. Multiple choice questions to test the superficial knowledge. Learners to interpret facts- evaluate situations- explain cause and effect- make inferences- and predict results. Emphasize Higher-Level Thinking. Use memory-plus application oriented questions. These questions require students to recall principles- rules or facts in a real life context.		
	Eg.1 One Tera byte (1 TB) is equal to? (a)1028 gb (b)1012 gb (c)1000 gb (d)1024 gb Eg.2 URL stands for: (a)Uniform Resource Locator (b)Uniform Resource Library		

(c)United Resource Locators (d)None of these 5. HOD's instruct to the faculty to prepare minimum 500 questions booklet (cumulatively for each programme) with solutions and circulate among the students.			
Course Outcome	**CO1:** Remember and Understand the basic language implementation techniques	K1	
	CO2: Apply the problem and develop problem solving skills in competitive exams	K2	
	CO3: Apply on Computational problems	K3	
	CO4: Analyze computer science theory and software development fundamentals to produce computing- based solutions	K4	
	CO5: Evaluate complex computing problem and to apply principles of computing	K5	

Learning Resources							
Reference Books	Objective Computer Science and Information Technology by Jushta Jaiswal- Jushta Jaiswal publications.						
Website Link	https://nptel.ac.in/courses/106106092 https://www.digimat.in/nptel/courses/video/106101061/L01.html https://www.digimat.in/nptel/courses/video/106104122/L01.html						
	L-Lecture	T- Tutorial	P-Practical		C-Credit		

B.Sc. Information Technology – Syllabus LOCF – CBCS with effect from 2023-2024 Onwards										
Course Code	**Course Title**		**Course Type**	**Sem**	**Hours**	**L**	**T**	**P**	**C**	
23M6UIT0E1	**Information Technology for Competitive Examination**		**Professional Competency Skills**	**VI**	**-**	**-**	**2**	**-**	**2**	
CO-PO Mapping										
CO Number	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PSO1**	**PSO2**	**PSO3**	**PSO4**	**PSO5**
CO1	S	M	M	M	L	S	M	M	M	L
CO2	S	M	M	M	M	S	M	M	M	L
CO3	M	M	M	M	M	M	M	M	M	M
CO4	M	M	M	M	S	M	S	S	M	M
CO5	L	M	M	S	S	L	M	M	M	S
Level of Correlation between CO and PO				L-LOW		M- MEDIUM			S-STRONG	
Tutorial Schedule				TNPSC,IBPS,UPSC,RRB,SSC,SET,NET						
Teaching and Learning Methods				Self Study						
Assessment Methods				CBE(MCQ)for CIA-I and CIA-II						
Designed By			**Verified By**			**Approved By**				
S.Jothivel			HOD P Subramaniam			Member Secretary Dr.S.Shahitha				