SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI

(AFFILIATED TO MADURAI KAMARAJ UNIVERSITY, MADURAI
RE-ACCREDITED WITH 'A' GRADE (THIRD CYCLE) BY NAAC WITH CGPA 3.11)

Programme Scheme, Scheme of Examination and Syllabi

(From 2021-2022 Batch onwards)

Department of Information Technology

UG Programme

Approved in the Academic Council – XIII held on 11/08/2021

Curriculum Design and Development Cell
Annexure I

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI

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Curriculum Design and Development Cell

HOD	Dean of Applied Science	Dean of Academic Affairs	Principal

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF INFORMATION TECHNOLOGY
MEMBERS OF BOARD OF STUDIES

S.No.	Board Members	Name and Designation
1.	Chairman of the Board	**Mr.A.Balaji,M.S(IT&M).,MCA.,M.Phil.,** Head i/c & Assistant Professor of Information Technology Sri Kaliswari College (Autonomous), Sivakasi.
2.	University Nominee	**Dr.B.Indrani, M.Sc., M.Phil, M.Tech, Ph.D** Assistant Professor Department of Computer Science, Directorate of Distance Education, Madurai Kamaraj University, Madurai – 625 021
3.	Academic Expert 1.	**Dr.T.Balaji , M.C.A., M.Phil., D.C.H., M.Tech., Ph.D.,** Assistant Professor, Department of Computer Science, Govt.Arts College , Melur, Madurai – 625 106.
4.	Academic Expert 2.	**Dr.P.Kalavathi, MCA.,M.Phil.,Ph.D.,** Professor, Department of Computer Science and Applications , The Gandhigram Rural Institute(Deemed to be University), Gandhigram, Chinnalapatti, Dindigul – 624 302.
5.	Industrialist	**Mr.R.Rajkumar, M.S (IT & M).,** Project & Program Management Specialist Accenture Solutions, Chennai.
6.	Alumna	**Ms. P.Sathiyabama, (M.Sc (IT)),** Manonmaniam Sundaranar University, Tirunelveli - 627012.
Members		
7.	Mrs. A. Sankar Gomathi	Assistant Professor in Information Technology
8.	Mr. S.Muthukumar	Assistant Professor in Information Technology
9.	Mr. S.Viswanathan	Assistant Professor in Information Technology
10.	Ms. S.Kavitha	Assistant Professor in Information Technology
11.	Mr.V. Muthu Ganeshan	Assistant Professor in Information Technology

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade (CGPA 3.11) by NAAC)

DEPARTMENT OF INFORMATION TECHNOLOGY

UG Programme - B.Sc. Information Technology

GUIDELINES FOR OUTCOME-BASED EDUCATION WITH CHOICE BASED CREDIT SYSTEM

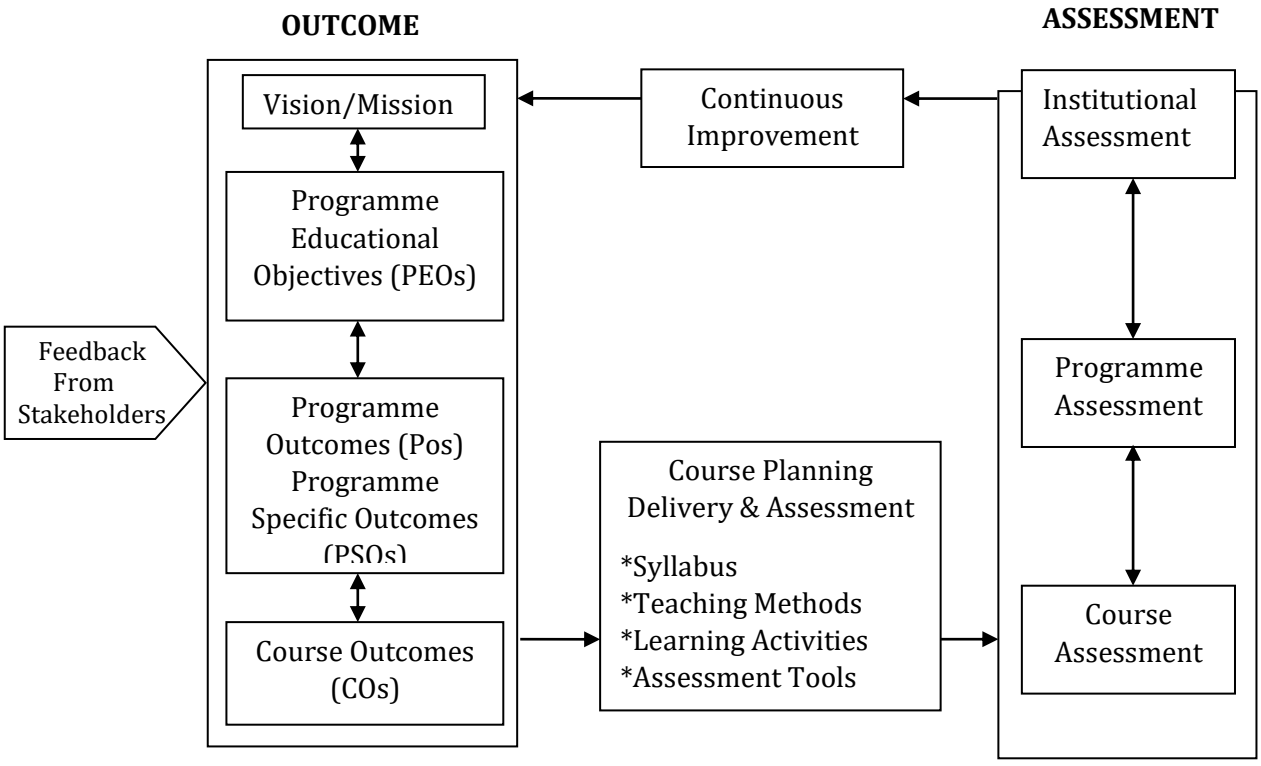
(From 2021-2022 Batch onwards)

INTRODUCTION

Sri Kaliswari College in its pursuit of imparting quality education has been marked a remarkable growth in terms of academic excellence, infrastructure, student strength, ICT facilities, library and placement records since its establishment in 2000-2001.This institution constitutes an academic community that is committed to encourage the student community to experience and share knowledge, identify their potential, enhance the employability skills and enable them to pursue their goals. After the conferment of autonomous status in the year 2012, the college has so far gone for revision of the syllabi three times and is continually updating the syllabi to meet the needs and demands of the student community.

The institution in its success journey of imparting quality education has been Re-Accredited with A grade (CGPA 3.11) in its third cycle of accreditation by NAAC. As an added feather to its cap, the institution has taken a giant leap to embrace the Outcome-Based Education system to enable the student community to develop their knowledge, skill and attitude simultaneously through a focused learning and help the graduates to compete with their global counterparts and prepare them for life.

I. OUTCOME-BASED EDUCATION (OBE) FRAMEWORK



II. VISION OF THE INSTITUTION

- To impart quality higher education to produce highly talented youth capable of developing the nation

III. MISSION OF THE INSTITUTION

- Ensuring quality in all aspects of the activities
- Developing the latent skills of the rural youth
- Providing value - based education to instill courage and confidence
- Nurturing the entrepreneurial skills of the rural youth
- Creating competency to meet global challenges
- Imbibing social awareness and social responsibilities

IV. VISION OF THE DEPARTMENT

- To produce technically competent and skilled IT professional in the rapidly changing technologies especially from the rural area to meet the current challenges in the modern IT industry.

V. MISSION OF THE DEPARTMENT

- To prepare the students to excel in the field of Computer Science and IT industry.
- To enhance the students' knowledge in the latest technology by providing quality training in the field of information technology.
- To equip the students to adapt and apply their skill set to acquire higher education opportunities and employability in IT sectors.

VI. PROGRAMME EDUCATIONAL OBJECTIVES (PEOs)

The Graduates will

PEO1: acquire comprehensive knowledge in Information Technology concepts.

PEO2: apply software technology in various fields of IT, including Mobile applications, Web site development and management, databases and computer networks.

PEO3: exhibit commitment to professional ethics and cyber-security regulations, responsibilities and norms of professional computing practice and design software and work in IT Industry.

PEO4: communicate effectively and articulate clearly the technical information in both verbal and written form to disseminate knowledge and pursue higher education.

PEO5: work effectively in team as well as individually to build software systems and to use range of programming languages and tools to develop computer programs to solve problems effectively.

VII. PROGRAMME OUTCOMES (POs)

PO1: Disciplinary Knowledge

Acquire the knowledge of computing, algorithmic principles with mathematical foundations to meet the desired needs.

PO2: Critical Thinking, Problem Solving and Analytical Reasoning

Acquire skills to analyze and identify the problems in multiple domains, to design and implement software applications using latest technologies.

PO3: Scientific Reasoning and Research Related Skills

Ability to analyze, draw conclusions from qualitative/quantitative data and critically evaluate ideas and also acquire necessary research skills to carry out an experiment or investigation.

PO4: Communication Skills and Digital Literacy

Communicate effectively and articulate clearly the technical information in written and oral form and make use of ICT Tools to disseminate knowledge.

PO5: Ethics, Values and Multicultural Competence

Implant ethical responsibilities, human and professional values and capability to engage in a multi-diverse society.

PO6: Team Work, Leadership and Employability Skills

Work effectively in groups with enhanced inter-personal skills and exhibit qualities associated with leadership to build a team and achieve the vision and show proficiency in professional, employability and soft skills required for placements and higher education.

PO7: Self-directed and Life-long Learning

Recognize the need and have the ability to engage in independent learning and be self-motivated and acquire knowledge and skills to attain personal development needed in work place/society through self-paced and self-directed learning.

VIII. PROGRAMME SPECIFIC OUTCOMES (PSOs) – B.Sc. Information Technology

On successful completion of B.Sc. Information Technology the students will

PSO 1: acquire the knowledge of fundamental concepts, methods and practices of Information Technology to develop theoretical and practical skill sets.

PSO 2: develop critical thinking to identify, analyze and solve problems related to IT industry.

PSO 3: identify, formulate and solve complex computing problems and apply current scientific concepts and practices in the core information management, programming and networking.

PSO 4: communicate effectively complex computing activities and obtain ability able to comprehend and write effective reports, in a complete, concise, and correct manner and prepare documentation using different ICT tools.

PSO 5: respond to societal, environmental, health, safety, legal, and cultural issues within local and global contexts, and observe ethical values in professional computing practice.

PSO 6: function effectively in an interdisciplinary environment and work independently as well as in groups respecting individuals, and demonstrate leadership in academics and industry.

PSO 7: recognize the need, and have the ability, to engage in independent and lifelong learning for the continual development as a computing professional.

IX. PO-PSO Mapping Matrix – B.Sc. Information Technology

PO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
PO1	✓						
PO2		✓					
PO3			✓				
PO4				✓			
PO5					✓		
PO6						✓	
PO7							✓

X. PO-PEO Mapping Matrix – B.Sc. Information Technology

PO \ PEO	PEO1	PEO2	PEO3	PEO4	PEO5
PO1	✓				
PO2		✓			✓
PO3			✓		
PO4				✓	
PO5					✓
PO6					✓
PO7			✓	✓	

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
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DEPARTMENT OF INFORMATION TECHNOLOGY
UG Programme - B.Sc. Information Technology

REGULATIONS

Duration of the Programme **:** Three years (equivalent to six semesters)

Eligibility

Candidate should have passed the Higher Secondary Examinations conducted by the Board of Higher Secondary Education, Government of Tamil Nadu, studied +2 levels Mathematics in the 10 + 2 Stream or any other examination accepted by the Syndicate of the Madurai Kamaraj University, Madurai as its equivalent.

Medium of Instruction : English

Age Limit

Maximum age limit : 21 Years

Age Relaxation

SC/ SCA/ST/BC/BCM/MBC/DNC & Women : 3 years age relaxation
Differently-Abled Students : 5 years age relaxation

Transitory Permission

Students joined from 2021 - 2024 may be permitted to write their examinations in this pattern up to April 2029.

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF INFORMATION TECHNOLOGY
UG Programme - B.Sc. Information Technology
SCHEME OF EXAMINATION

For UG Programmes, the internal and external marks are distributed as follows:

For all Theory Courses : Internal Marks: 40;
External Marks: 60

For all Practical Courses, Project and Internship : Internal Marks: 50;
External Marks: 50

Internal Mark Distribution for Theory Courses

Assessment Type	Marks	Scheme of Assessment
Internal Test	15 marks	Two Internal Tests and 1 Model Exam will be conducted and average of the best two will be considered
Written Assignment	5 marks	One Written Assignment will be given
E-Assignment/ Case Studies/ Reviews/ Field Assignments/ Poster Presentations/ Portfolios	5 marks	Any one of the Assignments will be given
Quiz	5 marks	One Quiz Test will be conducted
Viva/ Oral Exam/ Group Discussion/ Role Play	10 marks	Test will be conducted in any one of the Oral Mode

Internal Mark Distribution for Practical Courses

Assessment Type	Marks	Scheme of Assessment
Lab work /Program Execution	40 marks	Two Internal Tests will be conducted and the average of the two will be considered
Observation/Record Notebook	5 marks	Assessment will be done during every practical class
Viva –Voce / Lab Quiz	5 marks	Two Lab Quiz Tests/viva-voce will be conducted and the average of the two will be considered

External Mark Distribution for Practical Courses

Assessment Type	Marks	Scheme of Assessment
Lab work/Program Execution	40 marks	End result of the Practical
Viva –Voce	10 marks	Oral Mode Test

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF INFORMATION TECHNOLOGY
UG Programme - B.Sc. Information Technology
QUESTION PAPER PATTERN

Internal Test – 30 Marks – 1 hr Duration

S.No	Type of Questions	Marks
1.	Objectives type Questions: Multiple Choice – 4 questions Answer in a Word/Sentence – 4 questions	 04 04
2.	Short Answer–3 questions –either or type	3x4=12
3.	Long Answer–1 question – either or type	1x10=10

Summative Examinations – 60 Marks -3 hrs Duration

S.No	Type of Questions	Marks
1.	Objective type Questions: Multiple Choice – 5 questions Answer in a Word/Sentence – 5 questions	 05 05
2.	Short Answer 5 questions – either or type	5x4=20
3.	Long Answer 3 questions – either or type	3x10=30

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF INFORMATION TECHNOLOGY
UG Programme - B.Sc. Information Technology

Attainment of Course outcomes

Attainment of Course outcomes is computed using Direct and Indirect assessment methods. Direct Method of Assessment is based on performance of the students in the Continuous Internal Assessment Tests, Summative Examinations and supporting activities such as Seminar, Assignment, Case study, Group Discussion, Quiz, etc., and Indirect Method of Assessment is based on periodical feedback from the students at the end of each course.

Weightage of Direct and Indirect Assessment in computation of attainment of each course is 70% for Direct Assessment and 30% for Indirect Assessment.

Direct Assessment of Course outcome attainment

i) Rubrics:

Internal Assessment contributes 60% and Summative Examinations Assessment contributes 40% to the Direct Assessment of a course outcome for Theory Courses. For the Practical Courses, Internal Assessment contributes 70% and Summative Examinations Assessment contributes 30% to the Direct Assessment of a course outcome.

ii) Setting of Target:

50% of the maximum mark is set as target of Internal Assessment tools and the average mark of the class is set as target of Summative Examinations Assessment.

Formula for calculating percentage attainment of each course outcome

Based on the result of Summative Examinations and Internal Assessment tools, the number of students scoring more than the target is found out.

For each Internal Assessment Tools,

$$\text{Percentage attainment of each course outcome} = \frac{\text{No. of. Students who scored more than the target in the concerned course outcome}}{\text{Total Number of Students}} \times 100$$

Percentage attainment of each Course outcome for Internal Assessment tools = Average of percentage attainment of all Internal Assessment tools

For Summative Examinations,

$$\text{Percentage attainment of each Course outcome} = \frac{\text{No. of. Students who scored more than the target in the concerned co}}{\text{Total Number of Students}} \times 100$$

Formula for calculating Attainment Percentage of Course outcome of a course

Percentage Attainment of Course outcome for Internal Assessment tools	=	Average of percentage attainment of all COs
Percentage Attainment of Course outcome for Summative Examinations	=	Average of percentage attainment of all COs

Final Direct Assessment of Course outcome Attainment

For Theory Courses

Percentage Attainment of Course outcome through Direct Assessment	=	(0.6 x percentage attainment of CO for internal assessment tool) + (0.4 x percentage attainment of CO for summative examinations)

For Practical Courses

Percentage Attainment of Course outcome through Direct Assessment	=	0.7 x percentage attainment of CO for Internal Assessment tools + 0.3 x percentage attainment of CO for Summative Examinations

Indirect Assessment of CO Attainment

The course outcome feedback is conducted at the end of every semester by distributing structured feedback questionnaire to the students. The analysis of this feedback questionnaire is done on the following score. The feedback forms will be sorted with various scores and feedbacks with a score more than 5.5 are considered as satisfactory level for calculations for indirect attainment.

A : 10-8.5 **B :** 8.4-7.0 **C :** 6.9-5.5 **D :** 5.4-4.0 **E :** 3.9-0

Percentage attainment for each CO = $\frac{\text{Satisfaction Number}}{\text{Response Received}} \times 100$

Percentage Attainment of CO of a course = Average of percentage attainment of all COs

Final Assessment of CO attainment

Average course attainment = 0.7 x Direct assessment of CO attainment + 0.3 x Indirect assessment of CO attainment

Expected Level of Attainment for each of the Course Outcomes

CO	Level of Attainment
Above 70%	Excellent
60 -70 %	Very good
50-60 %	Good
40 – 50 %	Satisfactory
Below 40%	Not Satisfactory

Assessment of PO attainment

At the end of the each programme, the Direct PO Assessment is done from the CO Attainment of all courses. The Direct PO Attainment for a particular course is determined from the attainment values obtained for each course outcome related to that PO and the CO-PO mapping values.

$$\text{Weighted contribution of the course in attainment of each PO} = \frac{\text{Weighted Percentage of contribution of the course in attainmentof each PO}}{\text{average course attainment}} \times 100$$

Expected Level of Attainment for each of the Programme Outcomes

PO	Level of Attainment
Above 70%	Excellent
60 -70 %	Very good
50-60 %	Good
40 – 50 %	Satisfactory
Below 40%	Not Satisfactory

Attainment of Programme Educational Objectives (PEO)

PEOs are assessed after 3 to 4 years of graduation. Attainment is measured based on the Feedback from Stakeholders

1. Alumni
2. Parents
3. Employer

The analysis of this feedback questionnaire is done on the following score. The feedback forms will be sorted with various scores and feedbacks with a score

more than 5.5 are considered as satisfactory level for calculations for Indirect Attainment.

A : 10-8.5 **B :** 8.4-7.0 **C :** 6.9-5.5 **D :** 5.4-4.0 **E :** 3.9-0

$$\text{Percentage attainment of PEOs} = \frac{\text{Satisfaction number}}{\text{Response Received}} \times 100$$

Expected Level of Attainment for each of the Programme Educational Objectives

PEO	Level of Attainment
Above 70%	Excellent
60 -70 %	Very good
50-60 %	Good
40 – 50 %	Satisfactory
Below 40%	Not Satisfactory

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DEPARTMENT OF INFORMATION TECHNOLOGY
UG Programme - B.Sc. Information Technology
CURRICULUM STRUCTURE
OUTCOME-BASED EDUCATION WITH CHOICE BASED CREDIT SYSTEM
(From 2021-2022 Batch onwards)

S. No	Courses	Sem I	Sem II	Sem III	Sem IV	Sem V	Sem VI	Credits
I	Tamil / Hindi / French	6 (3)	6 (3)	6 (3)	6 (3)	-	-	12
II	English	6 (3)	6 (3)	6 (3)	6 (3)	-	-	12
III	Core Courses	5 (5) 5P(4)	5 (5) 5P(4)	5 (5) 5P(4)	5 (5) 5P(3)	5 (5) 5 (5) 5P(4) 5P(4)	5(5) 5(5) 5(5) 5P(4) 4P(4)	76
	Allied Courses	4 (4)	4 (4)	4 (4)	4 (4)	-	-	16
	Major Elective Courses	-	-	-		4(3) 4(3)	4(3)	9
	Self-paced Learning (Swayam Course)	-	-	-	(2)	-	-	2
IV	Ability Enhancement Compulsory Course (AECC) 1. Environmental Studies	2(1)	-	-	-	-	-	1
	2. Value Education	-	1(1)	-	-	-	-	1
	Non-Major Elective Courses	-	-	2 (1)	2 (1)	-	-	2
	Skill Enhancement Courses	2P(1)	2P(1)	2P(1)	2P(1)	2P(1)	2P(1)	6
	Internship	-	-	-	-	(1)	-	1
	Disaster Management		1(1)					1
V	Extension	-	-	-	(1)	-	-	1
Total Hours (Per week)/ Credits		30(21)	30(22)	30(21)	30(23)	30(26)	30(27)	140 180

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DEPARTMENT OF INFORMATION TECHNOLOGY
UG Programme - B.Sc. Information Technology
CURRICULUM PATTERN
OUTCOME-BASED EDUCATION WITH CHOICE BASED CREDIT SYSTEM
(From 2021-2022 Batch onwards)
PROGRAMME CODE – UIT

Semester	Part	Course Code	Course Name	Hours	Credits
I	I	21UTAL11	Tamil/Hindi/French – I	6	3
	II	21UENL11	Communicative English – I	6	3
	III	21UITC11	**Core Course – I:** Programming in C	5	5
		21UITC1P	**Core Course – II:** Practical: Programming in C	5	4
		21UITA11	**Allied Course – I:**Mathematical Foundations	4	4
	IV	21UESR11	**Ability Enhancement Compulsory Course – I:** Environmental Studies	2	1
		21UITS1P	**Skill Enhancement Course – I:** Practical: Office Automation and HTML	2	1
			Total	**30**	**21**
II	I	21UTAL21	Tamil/Hindi/French – II	6	3
	II	21UENL21	Communicative English – II	6	3
	III	21UITC21	**Core Course – III:** Data Structures and Algorithms with C++	5	5
		21UITC2P	**Core Course – IV:** Practical: Data Structures and Algorithms using C++	5	4
		21UITA21	**Allied Course – II:** Operations Research	4	4
	IV	21UVED21	**Ability Enhancement Compulsory Course –II:** Value Education	1	1
		21UITS2P	**Skill Enhancement Course – II:** Practical: Advanced Web Programming	2	1
		21UDMG21	Disaster Management	1	1
			Total	**30**	**22**
III	I	21UTAL31	Tamil/Hindi/French – III	6	3
	II	21UENL31	Communicative English – III	6	3
	III	21UITC31	**Core Course – V:** Programming in Java	5	5
		21UITC3P	**Core Course – VI:** Practical: Programming in Java	5	4
		21UITA31	**Allied Course – III:** Digital Principles and Computer Organization	4	4
	IV	21UITN31	**Non-Major Elective Course – I:** Office Automation and E – Governance	2	1
		21UITS3P	**Skill Enhancement Course – III:** Practical: Digital Design	2	1
			Total	**30**	**21**
IV	I	21UTAL41	Tamil/Hindi/French – IV	6	3
	II	21UENL41	Communicative English – IV	6	3
	III	21UITC41	**Core Course – VII:** Relational Database Management System	5	5
		21UITC4P	**Core Course – VIII:** Practical : Relational Database Management	5	3

			System		
		21UITA41	**Allied Course – IV:** Numerical Aptitude	4	4
		21UITM41 21UITM42	**Self-paced Learning (Swayam Course)** 1. Advanced Computer Architecture 2. Introduction to Soft Computing	-	2
	IV	21UITN41	**Non-Major Elective Course – II:** System Administration and Maintenance	2	1
		21UITS4P	**Skill Enhancement Course - IV:** Practical: Soft Skill Training	2	1
	V		**Extension**	-	1
				Total	**30**	**23**
V	III	21UITC51	**Core Course – IX:** Operating System	5	5
		21UITC52	**Core Course – X:** Open Source Technology	5	5
		21UITC5P	**Core Course – XI:** Practical: Operating System and Network	5	4
		21UITC5Q	**Core Course – XII:** Practical: Mobile Application Development	5	4
		21UITO51 21UITO52 21UITO53	**Major Elective Course - I:** 1. Wireless Networks 2. Computer Graphics and Multimedia 3. Cloud Computing	4	3
		21UITO54 21UITO55 21UITO56	**Major Elective Course - II:** 1. Computer Networks 2. Neural Networks 3. Ethical Hacking	4	3
	IV	21UITS5P	**Skill Enhancement Course – V:** Practical: Open Source Technology	2	1
		21UITJ51	**Internship**	-	1
				Total	**30**	**26**
VI	III	21UITC61	**Core Course – XIII:** Software Engineering	5	5
		21UITC62	**Core Course – XIV:** Programming in Python	5	5
		21UITC63	**Core Course – XV:** IOT and Big Data Computing	5	5
		21UITC6P	**Core Course – XVI:** Practical: Python Programming	5	4
		21UITJ61	**Core Course – XVII:** Project	4	4
		21UITO61 21UITO62 21UITO63	**Major Elective Course – III:** 1. Data Mining and Data Warehousing 2. Cryptography and Network Security 3. System Software	4	3
	IV	21UITS6P	**Skill Enhancement Course – VI:** Practical: R Programming	2	1
				Total	**30**	**27**

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UG Programme - B.Sc. Information Technology
OUTCOME-BASED EDUCATION WITH CHOICE BASED CREDIT SYSTEM
(From 2021-2022 Batch onwards)

PROGRAMME ARTICULATION MATRIX (PAM)

Semester	Course Code	Course Name	PO1	PO2	PO3	PO4	PO5	PO6	PO7
I	21UTAL11	Tamil/Hindi/French – I	10	7	2	8	2	2	2
	21UENL11	Communicative English – I	10	7	2	8	2	2	3
	21UITC11	**Core Course – I:** Programming in C	11	10	4	10	3	7	5
	21UITC1P	**Core Course – II:** Practical: Programming in C	11	10	4	8	4	9	4
	21UITA11	**Allied Course – I:**Mathematical Foundations	11	13	7	4	0	3	3
	21UESR11	**Ability Enhancement Compulsory Course – I:** Environmental Studies	8	5	1	7	8	5	5
	21UITS1P	**Skill Enhancement Course – I:** Practical: Office Automation and HTML	10	9	2	9	1	5	2
II	21UTAL21	Tamil/Hindi/French – II	10	8	2	8	2	2	2
	21UENL21	Communicative English – II	10	8	2	8	2	2	3
	21UITC21	**Core Course – III:** Data Structures and Algorithms with C++	12	10	5	10	4	5	4
	21UITC2P	**Core Course – IV:** Practical: Data Structures and Algorithms using C++	12	9	4	10	4	6	5
	21UITA21	**Allied Course – II:** Operations Research	9	13	7	4	0	4	4
	21UVED21	**Ability Enhancement Compulsory Course –II:** Value Education	8	5	1	5	9	4	7
	21UITS2P	**Skill Enhancement Course – II:** Practical: Advanced Web Programming	10	9	2	9	1	5	2
	21UDMG21	Disaster Management	7	8	2	5	2	4	8
III	21UTAL31	Tamil/Hindi/French – III	10	8	2	8	2	2	2
	21UENL31	Communicative English – III	10	8	3	9	3	3	2
	21UITC31	**Core Course – V:** Programming in Java	12	11	4	10	4	6	3
	21UITC3P	**Core Course – VI:** Practical: Programming in Java	12	11	3	10	4	6	4
	21UITA31	**Allied Course – III:** Digital Principles and Computer Organization	11	7	3	7	6	7	5
	21UITN31	**Non-Major Elective Course – I:**	9	5	0	8	0	5	5

		Office Automation and E – Governance							
	21UITS3P	**Skill Enhancement Course – III:** Practical: Digital Design	9	8	2	6	5	4	2
IV	21UTAL41	Tamil/Hindi/French – IV	10	8	2	9	2	2	2
	21UENL41	Communicative English – IV	10	9	3	8	2	3	3
	21UITC41	**Core Course – VII:** Relational Database Management System	13	10	4	10	2	6	5
	21UITC4P	**Core Course – VIII:** Practical : Relational Database Management System	13	12	4	10	3	6	2
	21UITA41	**Allied Course – IV:** Numerical Aptitude	12	10	2	10	4	6	4
	21UITN41	**Non-Major Elective Course – II:** System Administration and Maintenance	9	5	0	8	0	5	5
	21UITS4P	**Skill Enhancement Course - IV:** Practical: Soft Skill Training	11	10	3	5	2	3	3
	21UITM41 21UITM42	**Self-paced Learning (Swayam Course)** 1. Advanced Computer Architecture 2. Introduction to Soft Computing	13	10	5	9	1	2	7
		Extension	8	2	1	7	9	8	5
V	21UITC51	**Core Course – IX:** Operating System	12	10	7	10	2	7	2
	21UITC52	**Core Course – X:** Open Source Technology	13	11	5	8	4	5	4
	21UITC5P	**Core Course – XI:** Practical: Operating System and Network	13	11	5	10	2	6	3
	21UITC5Q	**Core Course – XII:** Practical: Mobile Application Development	12	9	3	10	3	8	5
	21UITO51 21UITO52 21UITO53	**Major Elective Course - I:** 1. Wireless Networks 2. Computer Graphics and Multimedia 3. Cloud Computing	11	10	3	10	4	4	4
	21UITO54 21UITO55 21UITO56	**Major Elective Course - II:** 1. Computer Networks 2. Neural Networks 3. Ethical Hacking	13	12	4	10	2	6	3
	21UITS5P	**Skill Enhancement Course – V:** Practical: Open Source Technology	11	8	2	9	2	4	4
	21UITJ51	**Internship**	8	12	4	7	1	5	8
VI	21UITC61	**Core Course – XIII:** Software Engineering	13	9	3	10	4	6	5
	21UITC62	**Core Course – XIV:** Programming in Python	13	11	5	8	4	5	4
	21UITC63	**Core Course – XV:** IOT and Big Data	14	11	6	7	3	5	4

		Computing							
	21UITC6P	**Core Course – XVI:** Practical: Python Programming	14	12	4	8	4	6	2
	21UITJ61	**Core Course – XVII:** Project	9	12	4	8	2	8	5
	21UITO61 21UITO62 21UITO63	**Major Elective Course – III:** 1. Data Mining and Data Warehousing 2. Cryptography and Network Security 3. System Software	12	10	4	10	4	4	4
	21UITS6P	**Skill Enhancement Course – VI:** Practical: R Programming	9	8	2	6	4	4	2
Total Weightage of all Courses Contributing to PO			**498**	**421**	**149**	**378**	**138**	**222**	**177**

SRI KALISWARI COLLEGE (AUTONOMOUS), Sivakasi
(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade (CGPA 3.11) by NAAC)
DEPARTMENT OF INFORMATION TECHNOLOGY
UG Programme - B.Sc. Information Technology
OUTCOME-BASED EDUCATION WITH CHOICE BASED CREDIT SYSTEM
(From 2021-2022 Batch onwards)

PROGRAMME ARTICULATION MATRIX – WEIGHTED PERCENTAGE

Semester	Course Code	Course Name	PO1	PO2	PO3	PO4	PO5	PO6	PO7
I	21UTAL11	Tamil/Hindi/French – I	2.01	1.66	1.34	2.12	1.45	0.9	1.13
	21UENL11	Communicative English – I	2.01	1.66	1.34	2.12	1.45	0.9	1.69
	21UITC11	**Core Course – I:** Programming in C	2.21	2.38	2.68	2.65	2.17	3.15	2.82
	21UITC1P	**Core Course – II:** Practical: Programming in C	2.21	2.38	2.68	2.12	2.9	4.05	2.26
	21UITA11	**Allied Course – I:**Mathematical Foundations	2.21	3.09	4.7	1.06	0	1.35	1.69
	21UESR11	**Ability Enhancement Compulsory Course – I:** Environmental Studies	1.61	1.19	0.67	1.85	5.8	2.25	2.82
	21UITS1P	**Skill Enhancement Course – I:** Practical: Office Automation and HTML	2.01	2.14	1.34	2.38	0.72	2.25	1.13
II	21UTAL21	Tamil/Hindi/French – II	2.01	1.9	1.34	2.12	1.45	0.9	1.13
	21UENL21	Communicative English – II	2.01	1.9	1.34	2.12	1.45	0.9	1.69
	21UITC21	**Core Course – III:** Data Structures and Algorithms with C++	2.41	2.38	3.36	2.65	2.9	2.25	2.26
	21UITC2P	**Core Course – IV:** Practical: Data Structures and Algorithms using C++	2.41	2.14	2.68	2.65	2.9	2.7	2.82
	21UITA21	**Allied Course – II:** Operations Research	1.81	3.09	4.7	1.06	0	1.8	2.26
	21UVED21	**Ability Enhancement Compulsory Course –II:** Value Education	1.61	1.19	0.67	1.32	6.52	1.8	3.95
	21UITS2P	**Skill Enhancement Course – II:** Practical: Advanced Web Programming	2.01	2.14	1.34	2.38	0.72	2.25	1.13
	21UDMG21	Disaster Management	1.41	1.9	1.34	1.32	1.45	1.8	4.52
III	21UTAL31	Tamil/Hindi/French – III	2.01	1.9	1.34	2.12	1.45	0.9	1.13
	21UENL31	Communicative English – III	2.01	1.9	2.01	2.38	2.17	1.35	1.13
	21UITC31	**Core Course – V:** Programming in Java	2.41	2.61	2.68	2.65	2.9	2.7	1.69
	21UITC3P	**Core Course – VI:** Practical: Programming in Java	2.41	2.61	2.01	2.65	2.9	2.7	2.26
	21UITA31	**Allied Course – III:** Digital Principles and CO	2.21	1.66	2.01	1.85	4.35	3.15	2.82
	21UITN31	**Non-Major Elective Course – I:** Office Automation and E - Governance	1.81	1.19	0	2.12	0	2.25	2.82

	21UITS3P	**Skill Enhancement Course – III:** Practical: Digital Design	1.81	1.9	1.34	1.59	3.62	1.8	1.13
IV	21UTAL41	Tamil/Hindi/French – IV	2.01	1.9	1.34	2.38	1.45	0.9	1.13
	21UENL41	Communicative English – IV	2.01	2.14	2.01	2.12	1.45	1.35	1.69
	21UITC41	**Core Course – VII:** RDBMS	2.61	2.38	2.68	2.65	1.45	2.7	2.82
	21UITC4P	**Core Course – VIII:** Practical : RDBMS	2.61	2.85	2.68	2.65	2.17	2.7	1.13
	21UITA41	**Allied Course – IV:** Numerical Aptitude	2.41	2.38	1.34	2.65	2.9	2.7	2.26
	21UITN41	**Non-Major Elective Course – II:** System Administration and Maintenance	1.81	1.19	0	2.12	0	2.25	2.82
	21UITS4P	**Skill Enhancement Course - IV:** Practical: Soft Skill Training	2.21	2.38	2.01	1.32	1.45	1.35	1.69
	21UITM41 21UITM42	**Self-paced Learning (Swayam Course)** 1. Advanced Computer Architecture 2. Introduction to Soft Computing	2.61	2.38	3.36	2.38	0.72	0.9	3.95
		Extension	1.61	0.48	0.67	1.85	6.52	3.6	2.82
V	21UITC51	**Core Course – IX:** Operating System	2.41	2.38	4.7	2.65	1.45	3.15	1.13
	21UITC52	**Core Course – X:** Open Source Technology	2.61	2.61	3.36	2.12	2.9	2.25	2.26
	21UITC5P	**Core Course – XI:** Practical: Operating System and Network	2.61	2.61	3.36	2.65	1.45	2.7	1.69
	21UITC5Q	**Core Course – XII:** Practical: Mobile Application Development	2.41	2.14	2.01	2.65	2.17	3.6	2.82
	21UITO51 21UITO52 21UITO53	**Major Elective Course - I:** 1. Wireless Networks 2. Computer Graphics and Multimedia 3. Cloud Computing	2.21	2.38	2.01	2.65	2.9	1.8	2.26
	21UITO54 21UITO55 21UITO56	**Major Elective Course - II:** 1. Computer Networks 2. Neural Networks 3. Ethical Hacking	2.61	2.85	2.68	2.65	1.45	2.7	1.69
	21UITS5P	**Skill Enhancement Course – V:** Practical: Open Source Technology	2.21	1.9	1.34	2.38	1.45	1.8	2.26
	21UITJ51	**Internship**	1.61	2.85	2.68	1.85	0.72	2.25	4.52
VI	21UITC61	**Core Course – XIII:** Software Engineering	2.61	2.14	2.01	2.65	2.9	2.7	2.82
	21UITC62	**Core Course – XIV:** Programming in Python	2.61	2.61	3.36	2.12	2.9	2.25	2.26
	21UITC63	**Core Course – XV:** Big Data Computing and IOT	2.81	2.61	4.03	1.85	2.17	2.25	2.26
	21UITC6P	**Core Course – XVI:** Practical: Python Programming	2.81	2.85	2.68	2.12	2.9	2.7	1.13
	21UITJ61	**Core Course – XVII:** Project	1.81	2.85	2.68	2.12	1.45	3.6	2.82

	21UITO61 21UITO62 21UITO63	**Major Elective Course – III:** 1. Data Mining and Data Warehousing 2. Cryptography and Network Security 3. System Software	2.41	2.38	2.68	2.65	2.9	1.8	2.26
	21UITS6P	**Skill Enhancement Course – VI:** Practical: R Programming	1.81	1.9	1.34	1.59	2.9	1.8	1.13
Total Weighted Percentage of Course Contribution to POs			**100**	**100**	**100**	**100**	**100**	**100**	**100**

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF TAMIL
UG Programme - B.A./B.SC./BCA
SEMESTER - I
பொதுத்தமிழ் - I (21UTAL11)
(From 2021-2022 Batch onwards)

HOURS/WEEK: 6 **INT. MARKS : 40**
CREDITS : 3 **EXT. MARKS : 60**
DURATION : 90 hrs **MAX. MARKS: 100**

நோக்கம்

தற்கால இலக்கிய வகைமைகளை அறிமுகப்படுத்தும் நோக்கில் இத்தாள் வடிவமைக்கப்பட்டுள்ளது.

கற்றலின் பயன்கள்

இத்தாளை வெற்றிகரமாக முடித்தவுடன் மாணவர்கள்,

CO1[K1]: நவீன இலக்கிய வகைமைகளை அடையாளம் காண்பர்.

CO2[K2]: மொழி இலக்கண அறிவினைப் புரிந்துகொண்டு பிழை இன்றி எழுதும் திறன் பெறுவர்.

CO3[K3]: இக்கால இலக்கியங்களின் கருத்தம்சங்களை தம் வாழ்நிலையோடு பொருத்திப் பார்ப்பர்.

CO4[K5]: நவீன இலக்கியங்கள் படைப்பதற்கு அடிப்படையாக அமைந்த முறைமை குறித்து மதிப்பீடு செய்து அவற்றை விமர்சிப்பர்.

CO5[K6]: உலகளாவிய கவிதை நாடகப் படைப்புகளைக் கற்றுப் படைப்பர்.

CO-PO Mapping Table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	2	2	-	2	-	-	-
CO2[K2]	2	2	-	2	-	-	-
CO3[K3]	2	1	-	2	1	-	-
CO4[K5]	2	1	1	1	1	1	1
CO5[K6]	2	1	1	1	-	1	1
Weightage of the course	10	7	2	8	2	2	2
Weighted percentage of Course Contribution to POs	**2.01**	**1.66**	**1.34**	**2.12**	**1.45**	**0.9**	**1.13**

Based on the level of contribution ('3'-High, '2'-Medium, '1'-Low '-' No Correlation)

கூறு I **(18 hrs)**

மரபுக்கவிதை: மரபுக்கவிதையின் தோற்றமும் வளர்ச்சியும், **பாரதியார்**: யாமறிந்த மொழிகளிலேஇ பகைவனுக்கு அருள்வாய். **பாரதிதாசன்**: வீரத்தமிழன்இ

தொழிலாளர் விண்ணப்பம். **கவிமணி**: ஒற்றுமையே உயிர்நிலை. **நாமக்கல் கவிஞர்:** பெண் மனம். **முடியரசன்**: தமிழ் தான் என் பேர். **கண்ணதாசன்:** யாத்திரை. **பட்டுக்கோட்டை:** சின்னப்பயலே.....

கூறு II **(18 hrs)**

புதுக்கவிதை: புதுக்கவிதையின் தோற்றமும் வளர்ச்சியும் - ஹைக்கூவின் தோற்றமும் வளர்ச்சியும். **அப்துல் ரகுமான்** - பாருக்குள்ளே நல்ல நாடு. **நா.காமராசர்:** கண். **மு.மேத்தா:** கால்களால் நடந்த கதை. **வைரமுத்து:** ஐந்து பெரிது ஆறு சிறிதுஇ **பா.விஜய்:** பேனா பேசுச்சு. **கனிமொழி**: கருவறை வாசனை. **ஹைக்கூ கவிதை:** இ.பரிமளம் - அமுதபாரதி - பா.உதயகண்ணன் - இ.ரா.இரவி - மணிவேலன் - புதுவை சீனு. தமிழ்மணி - புதுவைத் தமிழ்நெஞ்சன் - அறிவுமதி - ஸ்ரீரசா - தங்கம் மூர்த்தி - புதுக்கவிதை - ஹைக்கூ படைப்பதற்குப் பயிற்சி அளித்தல்.

கூறு III **(18 hrs)**

நாடகம்: நாடகத்தின் தோற்றமும் வளர்ச்சியும், புராண இலக்கிய நாடகங்கள் - **ஜெயந்தி நாகராஜன்:** திருநாவுக்கரசர் - திருஞானசம்பந்தர்.

கூறு IV **(18 hrs)**

நாடகம்: புராண இலக்கிய நாடகங்கள் - ஜெயந்தி நாகராஜன் 1. மாணிக்கவாசகர் 2. கண்ணப்பநாயனார் 3. மெய்ப்பொருள் நாயனார், நாடகம் படைப்பதற்குப் பயிற்சி அளித்தல்.

கூறு V **(18 hrs)**

இலக்கணம் : முதல்இ சார்பெழுத்துக்கள் - மொழி முதல்இ மொழி இறுதி எழுத்துக்கள் - வல்லினம் மிகும்இ மிகா இடங்கள்.

பாடநூல்கள்

1. *தொகுப்பு நூல்,* தமிழியல் துறை, ஸ்ரீ காளீஸ்வரி கல்லூரி (தன்னாட்சி), சிவகாசி.
2. ஜெயந்தி நாகராஜன். *புராண இலக்கிய நாடகங்கள்*, தாமரை பப்ளிகே'ன்ஸ், சென்னை, 2014.
3. வாசுதேவன், கா. *பன்முக நோக்கில் தமிழ் இலக்கிய வரலாறு,* தேவன் பதிப்பகம், திருச்சிராப்பள்ளி, 2017.

பார்வை நூல்கள்

1. சுதந்திரமுத்து, மு. *படைப்புக் கலை,* அறிவுப் பதிப்பகம், சென்னை, 2008.
2. பாக்கியமேரி. *தமிழ் இலக்கிய வரலாறு,* நியூ செஞ்சுரி புக் ஹவுஸ், சென்னை, 2011.
3. ஸ்ரீதரன், என். *பிழையின்றித் தமிழ் எழுதுவோம்,* ஸ்ரீ நந்தினி பதிப்பகம், சென்னை, 2008.

வலைப்பதிவுகள் (Web Sources)

1. https://youtu.be/6mrdbprILo8
2. https://youtu.be/QYizo6YwBXl
3. https://youtu.be/-oUmlDvHvQg
4. https://youtu.be/3sY76BTiqPQ
5. https://youtu.be/xLosPsqJ6W0

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF ENGLISH
UG Programme - B.A./B.Com./ B.B.A./B.SC./BCA
SEMESTER- I
COMMUNICATIVE ENGLISH - I (21UENL11)
(From 2021-2022 Batch onwards)

HOURS/WEEK: 6 **INT. MARKS : 40**
CREDITS : 3 **EXT. MARKS : 60**
DURATION : 90 hrs **MAX. MARKS: 100**

Preamble

This course helps the learners to develop their communication skills in English through listening, speaking, reading, and writing practices.

Course Outcomes (CO)

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

CO1[K1]: relate and state ideas by reading and listening to simple recorded conversations and fables

CO2[K2]: demonstrate communicative skills through simple Descriptions, Requests and Instructions

CO3[K3]: apply knowledge of word power and grammar rules in Formal and Informal letter writings

CO4[K4]: analyze fairy tales and folk tales to develop language skills through literature

CO5[K6]: construct grammatically correct and meaningful simple sentences in English

CO-PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	2	2	-	2	-	-	-
CO2[K2]	2	2	-	2	-	-	-
CO3[K3]	2	1	-	2	1	-	1
CO4[K4]	2	1	1	1	1	1	1
CO5[K6]	2	1	1	1	-	1	1
Weightage of the course	10	07	02	08	02	02	03
Weighted percentage of Course contribution to Pos	**2.01**	**1.66**	**1.34**	**2.12**	**1.45**	**0.9**	**1.69**

Based on the level of contribution ('3'-High, '2'-Medium, '1'-Low '-' No Correlation)

UNIT I - LISTENING AND SPEAKING **(18 hrs)**

A. Listening

Listening to simple conversations in everyday contexts
Listening to fables
Listening to News Bulletin

B. Speaking

Introducing oneself and others
Describing persons, places, things, daily routines, health and symptoms
Asking for time and date
Asking for directions and giving directions
Giving instructions and seeking clarifications
Making requests and responding to requests
Thanking someone and responding to thanks

UNIT II - READING AND WRITING **(18 hrs)**

A. Reading

Interpreting pictures/maps/pie-charts/tables/flow charts /diagrams
Skimming or scanning through the texts

B. Writing

Hints Developing
Story Completion/ completing the story based on given outline.
Letter Writing: Informal letters- Family, Friends and Relatives
Formal letters: Leave letters and Apology Letter

UNIT III - WORD POWER **(18 hrs)**

Prefixes and Suffixes
Homophones and Homonyms
Words related to Parts of the Body & their functions, Cries of Animals, Young Ones of Animals
Connotative and Denotative words
Contextual Usage of words
Puzzles and Anagrams

UNIT IV - GRAMMAR **(18 hrs)**

Nouns-Kinds, Number and Gender
Pronouns-Kinds
Adjectives- Kinds
Verbs-Regular and Irregular verbs, Transitive and Intransitive Verbs
Adverbs- Kinds and Position of Adverbs

UNIT V - LANGUAGE THROUGH LITERATURE (18 hrs)

Fairy Tales, Folk Tales and Legendary Heroes

Fairy Tales

The Pied Piper of Hamelin

The Ugly Duckling

Hansel and Gretel

Folk Tales

Alibaba and the Forty Thieves

Aladdin and the Magic Lamp

The Town Mouse and the Country Mouse

Legendary Heroes

Chhatrapati Shivaji Maharaj- Shivaji's great escape

Mahatma Gandhi- Mohandas takes a spelling test

Tenali Raman- The Stolen Brinjal

Akbar and Birbal- Re-Union

TEXTBOOKS

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2. Pillai, Radhakrishna, and K.Rajeevan. *Spoken English for You (Level One)*. Chennai: Emerald Publishers, 2009.
3. Sreelekshmi. *Folk Tales- A WonderWorld of 150 Stories for Children*. Kerala: SL Publishers, 2004.

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1. Babu, Sundara. *Leo's Tenali Raman Stories*. Chennai: Leo Book Publishers, 2015.
2. Kalyani V. *Fairy Tales 1*. Kerala: Sisco Publishers, 2004.
3. *Life Skills* (Jeevan Kaushal) *Facilitators' Guidelines*. New Delhi: University Grants Commission, 2021.
4. Sadanand, Kamalesh and Susheela Punitha. *Spoken English- A Foundation Course for Speakers of Tamil*. Mumbai: Orient Blackswan, 2009.
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5. https://learnenglish.britishcouncil.org/general-english/stories
6. https://www.talkenglish.com/lessonindex.aspx
7. https://www.englishhelper.com/
8. https://www.englishpage.com/

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF INFORMATION TECHNOLOGY
UG Programme – B.Sc. Information Technology
SEMESTER – I
CORE COURSE – I: PROGRAMMING IN C (21UITC11)
(From 2021-2022 Batch onwards)

HOURS/WEEK: 5 **INT. MARKS : 40**
CREDITS : 5 **EXT. MARKS : 60**
DURATION : 75 hrs **MAX. MARKS: 100**

Preamble

This course introduces the learners to the features and concept of procedural oriented programming language.

Course Outcomes (CO)

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

CO1[K1]: identify the basic concepts of high level programming language
CO2[K2]: classify the operations of input , output and decision making statements
CO3[K3]: apply the concepts of functions and arrays for efficient execution of task
CO4[K4]: analyze the methods of the pointers, structures and unions
C05[K4]: examine the importance and usage of various concepts of file

CO-PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	3	1	-	2	-	-	1
CO2[K2]	3	2	1	2	-	1	-
CO3[K3]	2	2	1	2	1	2	1
CO4[K4]	2	3	1	2	1	2	2
CO5[K4]	1	2	1	2	1	2	1
Weightage of the course	11	10	04	10	03	07	05
Weighted percentage of Course contribution to POs	**2.21**	**2.38**	**2.68**	**2.65**	**2.17**	**3.15**	**2.82**

Based on the level of contribution ('3'-High, '2'-Medium, '1'-Low '-' No Correlation)

UNIT I **(15 hrs)**

Overview of C: History of C **–** Importance of C **–** Basic Structure of C Programs – Programming style. **Constants , Variables and Data types:** Character Set – C tokens – Keywords and Identifiers – Constants – Variables – Data types **–** Declaration of Variables – Declaration of Storage Class – Assigning Values to Variables – Defining Symbolic Constants – Declaring a Variable as Constant – Declaring a Variable as Volatile. **Operators and Expressions:** Arithmetic Operators – Relational Operators **–** Logical Operators – Assignment Operators – Increment and Decrement Operators – Conditional Operator **–** Bitwise Operators – Special Operators – Arithmetic Expressions – Evaluation of Expressions – Precedence of Arithmetic Operators – Type Conversions in Expressions **–** Operator Precedence and Associativity.

UNIT II **(15 hrs)**

Managing Input and Output Operations: Introduction – Reading a Character – Writing a Character – Formatted Input – Formatted Output. **Decision Making and Branching:** Simple If Statement – The if..else Statement – Nesting of if…else Statements – The else-if Ladder – The Switch Statement – The ?: Operator – The Go to Statement. **Decision Making and Looping:** The While Statement – The Do Statement – The for Statement – Jump in loops.

UNIT III **(15 hrs)**

Array: Introduction – One Dimensional Arrays – Declaration of One – Dimensional Arrays – Initialization of One Dimensional Arrays – Two-Dimensional Arrays – Initializing Two Dimensional Arrays – Multi-Dimensional Arrays – Dynamic Arrays. **Character Arrays and Strings:** Introduction – Declaring and Initializing String Variables – Reading Strings from Terminal – Writing Strings to Screen – Arithmetic Operations on Characters **–** Putting String Together – Comparison of Two Strings **–** String Handling Functions. **User Defined Functions:** Need for User defined functions – A Multi-function Program – Elements of User Defined Functions **–** Definition of Function – Return Values and Their Types **–** Function Calls – Function Declaration – Category of Functions – Nesting of Functions – Recursion.

UNIT IV **(15 hrs)**

Structures and Unions: Introduction – Defining a Structure – Declaring Structure Variables – Accessing Structure Members – Structure Initialization **–** Array of Structures – Arrays within Structures – Structures within Structures – Structures and Functions – Unions – Size of Structures – Bit Fields. **Pointers:** Introduction – Understanding Pointers – Accessing the Address of a Variable – Declaring Pointer Variables – Initialization of Pointer Variables – Chain of Pointers – Pointer Expressions – Pointer Increments and Scale Factor – Pointers and Arrays – Pointers and Character Strings – Array of Pointers – Pointer as

Function Arguments – Function Returning Pointers – Pointers to Functions – Pointers and Structures.

UNIT V **(15 hrs)**

File Management in C: Introduction – 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.

TEXTBOOK

1. E.Balagurusamy. *Programming in ANSI C.* Chennai: Tata McGraw Hill Education (India) Private Limited, 2019.

REFERENCES

Books

1. Asok. N. Kamthane and Amit Ashok Kamthane. *Programming in C*. New Delhi: Pearson India Education private limited, 2015.
2. S.K. Srivastava and Deepali Srivastava. *C in Depth*. New Delhi: BPB publication, 2009.
3. Yashavant Kanetkar. *Let Us C*. New Delhi: BPB Publication, 2018.

Web Sources

1. https://www.cprogramming.com/tutorial/c-tutorial.html?inl=nv
2. https://www.cppbuzz.com/forum/c/switch-statement-cppbuzz-forum
3. https://cboard.cprogramming.com/c-programming/180098-need-help-understand-pointers-c.html
4. https://nptel.ac.in/content/storage2/106/104/106104128/MP4/mod01lec14.mp4
5. https://nptel.ac.in/content/storage2/106/104/106104128/MP4/mod01lec32.mp4

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF INFORMATION TECHNOLOGY
UG Programme – B.Sc. Information Technology
SEMESTER – I
CORE COURSE – II: PRACTICAL: PROGRAMMING IN C (21UITC1P)
(From 2021-2022 Batch onwards)

HOURS/WEEK: 5 **INT. MARKS : 50**
CREDITS : 4 **EXT. MARKS : 50**
DURATION : 75 hrs **MAX. MARKS: 100**

Preamble

This course introduces the learners to the features and concept of procedural oriented programming language.

Course Outcomes (CO)

On Successful completion of the course, the learners will be able to

CO1[K2]: express the basic concepts and features of procedural oriented programming language

CO2[K3]: compute the basic mathematical operations using operators

CO3[K3]: determine the techniques of functions and structures to perform the task

CO4[K4]: examine the ideas about the pointers to compute arithmetic operation

C05[K4]: inspect the concept of file by examining the various file operations

CO-PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K2]	3	2	-	2	-	1	-
CO2[K3]	2	2	1	2	2	2	1
CO3[K3]	2	2	1	2	1	2	2
CO4[K4]	2	2	1	1	1	2	1
CO5[K4]	2	2	1	1	-	2	-
Weightage of the course	11	10	04	08	04	09	04
Weighted percentage of Course contribution to POs	**2.21**	**2.38**	**2.68**	**2.12**	**2.9**	**4.05**	**2.26**

Based on the level of contribution ('3'-High, '2'-Medium, '1'-Low '-' No Correlation)

1. To perform the biggest among three numbers using nested-if statements.
2. To check the given number is odd or even using switch case statement.
3. To implement quadratic equations using switch case statement.
4. To perform area calculation of different shapes.
5. To compute all prime numbers between any two given limits using for loop.
6. To implement the sum of digits of a given number using do while loop.
7. To arrange “N” numbers in ascending order and descending order.
8. To check the given string is palindrome or not.
9. To perform simple interest and compound interest calculation.
10. To implement the matrix operations using operators.
11. To implement the string operations using string functions.
12. To implement the searching of an element using array.
13. To calculate the factorial value by using recursion.
14. To perform product of two numbers using functions.
15. To prepare student mark list using structure.
16. To generate EB bill using structure with functions.
17. To perform arithmetic operation using pointers.
18. To copy contents in one file to another file using command line arguments.
19. To implement the operations of file using file concept.

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF MATHEMATICS
UG Programme – B.Sc. (COMPUTER SCIENCE/INFORMATION TECHNOLOGY)/BCA
SEMESTER- I
ALLIED COURSE-I: MATHEMATICAL FOUNDATIONS
(21UCSA11/21UITA11/21UCAA11)
(From 2021-2022 Batch onwards)

HOURS/WEEK: 4 **INT. MARKS : 40**
CREDITS : 4 **EXT.MARKS : 60**
DURATION : 60 hrs **MAX. MARKS: 100**

Preamble

This course introduces the learners to some concepts and notations that are useful in studying and describing objects and problems in branches of Computer Science and applications.

Course Outcomes (CO)

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

CO1[K1]: define the discrete objects in the context of mathematical structures for computer science and applications

CO2[K2]: recognize the properties of set operations and types of functions

CO3[K3]: calculate the rank, inverse matrix of a matrix

CO4[K4]: analyze the truth values of statements with reference to propositional logic

CO5[K5]: determine the appropriate algorithm to solve graph optimization problems

CO-PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	3	2	-	-	-	-	-
CO2[K2]	2	2	1	1	-	-	-
CO3[K3]	2	3	2	1	-	1	1
CO4[K4]	2	3	2	1	-	1	1
CO5[K5]	2	3	2	1	-	1	1
Weightage of the course	11	13	07	04	0	03	03
Weighted percentage of Course contribution to POs	**2.21**	**3.09**	**4.7**	**1.06**	**0**	**1.35**	**1.69**

Based on the level of contribution ('3'-High, '2'-Medium, '1'-Low, '-' No Correlation)

UNIT I **(12 hrs)**

Set Theory: Introduction – Sets – Notation and Description of Sets – Subsets – Venn-Euler Diagram – Operations on Sets – Properties of Set Operations. **Relations:** Cartesian Product of Two Sets – Relations – Representation of a Relation – Operations on Relations – Equivalence Relations. **Functions:** Functions and Operators – One-to-one, Onto Functions – Special Types of Functions – Invertible Functions.

UNIT II **(12 hrs)**

Matrix Algebra: Introduction – Matrix Operations – The Inverse of a Square Matrix–Elementary Operations and Rank of a Matrix.

UNIT III **(12 hrs)**

Logic: Introduction – TF - Statements – Connectives – Atomic and Compound Statements – Well-Formed (Statement) Formulae – The Truth Table of a Formula –Tautology – Tautological Implications and Equivalence of Formulae – Replacement Process.

UNIT IV **(12 hrs)**

Graphs : Graph – Finite and Infinite Graphs – Directed and Undirected Graphs – Basic Terminologies – Matrix Representation of Graphs – Subgraph – Walks – Closed Walk – Open Walk – Path – Length of the Path – Circuit or Cycle or Elementary Cycle, Circular Path – Connected – Eulerian Graphs – Operations of Graphs – Hamiltonian Graph – Complete Undirected Graph – Weighted Graph – Graph Optimisation Problems.

UNIT V **(12 hrs)**

Trees : Acyclic Graph – Tree – Forest – Some Properties of Trees – Pendant Vertices in a Tree – Distance in a Tree – Eccentricity of a Vertex – Center of a Tree – Rooted Tree – Subtree – Binary Trees – Properties of Binary Trees – Counting Trees – Spanning Trees – Weighted Graph – Minimum Spanning Tree.

TEXTBOOKS

1. M.K.Venkataraman, N.Sridharan and N.Chandrasekaran. *Discrete Mathematics.* Chennai: The National Publishing Company, 2011. **(UNITS I, II & III)**
2. P. Geetha. *Graph Theory.* Chennai: Scitech Publications (India) Pvt. Ltd, 2009. **(UNITS IV & V)**

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Books

1. G.Shanker Rao. *Discrete Mathematical Structures.* New Delhi: New Age International (P) Limited Publishers, 2002.
2. N.G.Goudru. *Discrete Mathematical Structures.* Mumbai: Himalaya Publishing House, 2003.

3. B.S.Vatsa and Suchi Vatsa. *Discrete Mathematics.* New Delhi: New Age International (P) Limited Publishers, Fourth Revised Edition, 2012.

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1. https://byjus.com/maths/tautology/
2. https://courses.lumenlearning.com/math4libarts/chapter/cardinality/
3. https://www.whitman.edu/mathematics/higher_math_online/section04.01.html
4. https://www.google.co.in/books/edition/Discrete_Mathematics/guhzzPyUxggC?hl=en&gbpv=1&dq=discrete+mathematics+with+graph+theory&printsec=frontcover
5. https://www.google.co.in/books/edition/DISCRETE_MATHEMATICS_AND_GRAPH_THEORY/1ZBeBAAAQBAJ?hl=en&gbpv=1&dq=discrete+mathematics+with+graph+theory&printsec=frontcover
6. https://www.youtube.com/watch?v=hbk01uhgsos

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
UG PROGRAMME
SEMESTER- I
ABILITY ENHANCEMENT COMPULSORY COURSE - I: ENVIRONMENTAL STUDIES (21UESR11)
(From 2021 - 2022 Batch onwards)

HOURS/WEEK : 2 **INT. MARKS: 40**
CREDIT : 1 **EXT. MARKS: 60**
DURATION : 30 hrs **MAX. MARKS :100**

Preamble

This course familiarizes the learners with the essentials of Environmental Studies by focusing on variety of environmental issues and factors affecting environment.

Course Outcomes (CO)

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

CO1[K1]: recognize the importance of environment and role of Individuals in its protection.

CO2[K2]: explain the key concepts of Ecosystem, Food Web and Bio geochemical.

CO3[K3]: apply the right measures for the sustainable use of natural resources.

CO4[K4]: analyse the ethical, cross-cultural, and historical context of environmental issues and the links between Human and Natural Systems.

CO5[K4]: examine the impact of human action on the biological environment

CO-PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1 [K1]	2	1	-	2	2	1	1
CO2 [K2]	2	1	-	2	1	1	1
CO3 [K3]	2	1	-	1	1	1	1
CO4 [K4]	1	1	1	1	2	1	1
CO5 [K4]	1	1	-	1	2	1	1
Weightage of the course	08	5	1	7	08	05	05
Weighted percentage of Course contribution to Pos	**1.61**	**1.19**	**0.67**	**1.85**	**5.8**	**2.25**	**2.82**

Based on the level of contribution ('3'-High, '2'-Medium, '1'-Low '-' No Correlation)

UNIT I **(6 hrs)**

Structure of earth and its components: Atmosphere – Lithosphere – Hydrosphere – Biosphere. Renewable and non-renewable resources – Forest, water and energy resources.

UNIT II **(6 hrs)**

Ecosystem: Concept of ecosystem – Terrestrial and aquatic. Structure and function – Energy flow in the ecosystem – Food chain and food web – Ecological pyramids – Bio-geo chemical cycle – carbon and nitrogen cycle.

UNIT III **(6 hrs)**

Biodiversity: Introduction – Definition: genetic, species and ecosystem diversity. Indian Biodiversity Hotspots. Threats to biodiversity – Conservation of Biodiversity – In-situ and Ex-situ conservation strategies. IUCN Red list Categories.

UNIT IV **(6 hrs)**

Pollution: Definition – causes – effects and control measures of Air – Water – Noise – soil – nuclear pollution. Global issues – Global warming – acid rain – Ozone layer depletion. Water conservation – rain water harvesting and water recycling – solid waste management.

UNIT V **(6 hrs)**

Human Population and Environment: Population growth, variation among nations. Road safety awareness. Environment and human health. Human Rights. HIV/AIDS. Women and Child Welfare. Role of Information Technology in Environment and human health. Contribution of students and teachers in adoption of villages and steps to be taken for green villages.

TEXTBOOKS

1. Dharmaraj,J. *Text book of Environmental studies*, S. Chand and Co. New Delhi, 1995.
2. Susila Appadurai. *Environmental Studies*, New Century Book House, 2012.

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Books

1. Agarwal, K.C.*Environmental Biology*, Nidi publication Ltd, Bikaner, 2001.
2. Odum, E.P. *Fundamentals of Ecology*, W.B. Saunders Co. USA, 1971.
3. Miller, T.G. *Environmental sciences*, Wadsworth Publishing Co, New Delhi. 2004.

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1. https://www.adcidl.com/pdf/India-Road, Traffic-Signs.pdf.
2. https://www.youtube.com/watch?v=QewEi2U1jLs
3. https://byjus.com/biology/endemic-species/

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF INFORMATION TECHNOLOGY
UG Programme – B.Sc. Information Technology
SEMESTER – I
SKILL ENHANCEMENT COURSE – I: PRACTICAL: OFFICE AUTOMATION AND HTML (21UITS1P)
(From 2021-2022 Batch onwards)

HOURS/WEEK: 2 **INT. MARKS : 50**
CREDIT : 1 **EXT. MARKS : 50**
DURATION : 30 hrs **MAX. MARKS: 100**

Preamble

This course aims to enable the learners to know about the office automation tools and to craft professional static web pages using HTML.

Course Outcomes (CO)

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

CO1[K2]: explain the different options and features of word document
CO2[K3]: organize the data in excel by using the built-in formulas and graphs
CO3[K3]: utilize the features of PowerPoint to develop slide presentation
CO4[K4]: examine the basic of Office package and HTML tags for designing the attractive web pages
CO5[K6]: design and create a simple web page using the basic HTML tags

CO – PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K2]	2	2	-	2	-	-	1
CO2[K3]	2	2	-	2	-	1	-
CO3[K3]	2	2	-	2	-	1	-
CO4[K4]	2	2	-	2	-	1	-
CO5[K6]	2	1	2	1	1	2	1
Weight age of the course	10	09	02	09	01	05	02
Weighted percentage of Course contribution to POs	**2.01**	**2.14**	**1.34**	**2.38**	**0.72**	**2.25**	**1.13**

Based on the level of contribution ('3'-High, '2'-Medium, '1'-Low, '-' No Correlation)

WORD PROCESSOR

1. To implement the formatting options such as font, spell check, aligning and justification of text.
2. To prepare a resume with business letter.
3. To prepare a time table using table properties.
4. To design an advertisement using header, footer and bullets & numbering.
5. To invite the colleagues for meeting using mail merge.

SPREADSHEET

6. To prepare student mark statement with chart.
7. To calculate payroll by applying various excel formula.
8. To prepare a graphical report for population.

PRESENTATION

9. To create a presentation for seminar using slide show.
10. To design an advertisement banner by applying the transition and animation effects.

HTML

11. To design a bio-data by applying the basic HTML tags.
12. To design a simple web page by implementing the tags such as Marquee, hyperlink and image tag.
13. To display the menu card details using the table tag.
14. To design a web page using list in HTML.
15. To create a website using frames in HTML.

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF TAMIL
UG Programme - B.A/B.SC/BCA
SEMESTER - II
பொதுத்தமிழ் - II (21UTAL21)
(From 2021-2022 Batch onwards)

HOURS / WEEK : 6 **INT. MARKS : 40**
CREDITS : 3 **EXT. MARKS : 60**
DURATION : 90 hrs **MAX. MARKS: 100**

நோக்கம்

சமய இலக்கியம் தோன்றியதற்கான காலப்பின்னணி மற்றும் சமயம் சார்ந்த இலக்கியங்களை மாணவர்களுக்கு அறிவுறுத்தலும், பல்வேறு காலகட்ட சிறுகதை இலக்கியங்களை எடுத்துரைக்கும் நோக்கோடு அமைக்கப்பட்டுள்ளது.

கற்றலின் பயன்கள்

இத்தாளை வெற்றிகரமாக முடித்தவுடன் மாணவர்கள்,

CO1[K1]: பல்வேறு சமயம் சார்ந்த இலக்கிய வரலாற்றினை அறிவர்.
CO2[K2]: இறை உருவங்களையும் புராணக்கருத்துக்களையும் கூறுவர்.
CO3[K3]: சமயப்பாடல்களின் அமைப்பினையும் நோக்கத்தினையும் தெளிவாக விளக்குவர்.
CO4[K4]: தமிழ்ச் சிறுகதைகளின் பொருண்மைகளைப் பாகுபடுத்துவர்.
CO5[K4]: சொல்லிலக்கணத்தைப் புரிந்துகொண்டு பிழையின்றி எழுதும் திறனைப் பெறுவர்.

CO-PO Mapping Table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	2	1	-	1	-	-	-
CO2[K2]	2	1	-	1	1	-	-
CO3[K3]	2	2	-	2	-	1	-
CO4[K4]	2	2	1	2	1	-	1
CO5[K4]	2	2	1	2	-	1	1
Weightage of the Course	10	8	2	8	2	2	2
Weighted percentage of Course Contribution to POs	**2.01**	**1.9**	**1.34**	**2.12**	**1.45**	**0.9**	**1.13**

Based on the level of contribution ('3'-High, '2'-Medium, '1'-Low '-' No Correlation)

கூறு I **(18 hrs)**

சைவ இலக்கிய வரலாறு - **திருஞானசம்பந்தர்**: முதல் திருமுறை - திருப்பிரமபுரம் - தோடுடைய செவியன் (10 பாடல்கள்). **திருநாவுக்கரசர்:** நான்காம் திருமுறை - திருவதிகை வீரட்டானம் - கூற்றாயினவாறு விலக்ககலீர் (10 பாடல்கள்).

சுந்தரர்: ஏழாம் திருமுறை - திருவெண்ணெய்நல்லூர் பதிகம் - பித்தா பிறைசூடி (10 பாடல்கள்). **மாணிக்கவாசகர்:** குயிற்பத்து (10 பாடல்கள்).

கூறு II **(18 hrs)**

வைணவ இலக்கிய வரலாறு - **ஆண்டாள்**: திருப்பாவை முழுவதும் (30 பாடல்கள்) - **நம்மாழ்வார்**: நான்காம் திருமொழி - நான்காம் பத்து - மண்ணையிருந்து துழாவி.

கூறு III **(18 hrs)**

கிறிஸ்தவ, இஸ்லாமிய இலக்கிய வரலாறு - **கண்ணதாசன்:** இயேசு காவியம் - மலைப்பொழிவு (முழுவதும்) - **குணங்குடியார்:** நந்தீஸ்வரக்கண்ணி (51 பாடல்கள்).

கூறு IV **(18 hrs)**

சிறுகதை தோற்றம் வளர்ச்சி (தேர்ந்தெடுக்கப்பட்ட 10 சிறுகதைகள்) - **புதுமைப்பித்தன்:** அகல்யை..பி.எஸ். ராமையா: நட்'த்திரக் குழந்தைகள் **த.ஜெயகாந்தன்:** அக்ரஹாரத்துப்பூனை. **வண்ணதாசன்**: ஒருசிறு இசை.**வண்ணநிலவன்:** கரையும் உருவங்கள்.. **கு.அழகிரிசாமி**: அன்பளிப்பு. **விஞ்ஞானி**: முன்னை இட்ட தீ.**ஆதவன்:** கறுப்பு அம்பா கதை. **மேலாண்மை பொன்னுச்சாமி**: அன்பெழுத்து. **நாஞ்சில் நாடன்**: சூடியபூ சூடற்க

கூறு V **(18 hrs)**

இலக்கணம்: சொல்விளக்கம், சொற்பாகுபாடு (பெயர்ச்சொல், வினைச்சொல், இடைச்சொல், உரிச்சொல்) - அறுவகைவினா - எண்வகைவிடை - மொழிப்பயிற்சி: மயங்கொலிப்பிழைகள் (லகர, ளகர, ழகர வேறுபாடு, ரகர, றகர வேறுபாடு - ணகர, னகர வேறுபாடு).

பாடநூல்கள்

1. *தொகுப்புநூல்,* தமிழியல் துறை, ஸ்ரீ காளீஸ்வரி கல்லூரி (தன்னாட்சி), சிவகாசி.
2. வாசுதேவன், கா. *பன்முக நோக்கில் தமிழ் இலக்கிய வரலாறு,* தேவன் பதிப்பகம், திருச்சிராப்பள்ளி, பன்னிரெண்டாம் பதிப்பு: 2017.

பார்வை நூல்கள்

1. அப்துல்ரகுமான் (குறிப்புரை*). குணங்குடியார் பாடற்கோவை,* மணிவாசகர் பதிப்பகம், சென்னை, 2002.
2. பாக்கியமேரி. *தமிழ் இலக்கிய வரலாறு,* நியூ செஞ்சுரி புக் ஹவுஸ், சென்னை, நான்காம் பதிப்பு : 2011.
3. ஜெகத்ரட்சகன், எஸ். *நாலாயிரதிவ்யப் பிரபந்தம்,* முல்லைநிலையம், சென்னை, முதற்பதிப்பு: 1993.
4. ஸ்ரீமத் கந்தசாமித்தம்பிரான் சாமிகள் (பதி.ஆ.). *மூவர் தேவாரம்,* ஞானசம்பந்தம் பதிப்பகம், மயிலாடுதுறை, இரண்டாம் பதிப்பு: 1997.

வலைப்பதிவுகள் (Web Sources)

1. https://youtu.be/FPlNGftQnAo
2. https://youtu.be/Rj0S6KOruvA
3. https://youtu.be/Z8xgO8ff44g
4. https://youtu.be/PxeeauHz5CQ
5. https://youtu.be/TLU6MO9YEkA
6. https://podhutamizh.blogspot.com/2017/09/blog-post_42.html
7. https://youtu.be/vZ1FrQuhn_w

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF ENGLISH
UG Programme - B.A./B.Com./ B.B.A./B.SC./BCA
SEMESTER- II
COMMUNICATIVE ENGLISH - II (21UENL21)
(From 2021-2022 Batch onwards)

HOURS/WEEK: 6 **INT. MARKS : 40**
CREDITS : 3 **EXT. MARKS : 60**
DURATION : 90 hrs **MAX. MARKS: 100**

Preamble

This course helps the learners to develop their communication skills in English through listening, reading, speaking and writing practices.

Course Outcomes (CO)

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

CO1[K1]: relate and state ideas by reading and listening to recorded interviews and news

CO2[K2]: demonstrate effective speaking skills by offering suggestions, seeking permission and reporting ongoing activities

CO3[K3]: apply knowledge of word power and grammar rules through proverb expansion and paragraph writings

CO4[K4]: analyze simple poems and short stories to develop language skills through literature

CO5[K6]: construct grammatically correct and logically coherent paragraphs

CO-PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1 [K1]	2	1	-	1	-	-	-
CO2 [K2]	2	2	-	1	1	-	1
CO3 [K3]	2	2	-	2	-	1	-
CO4 [K4]	2	2	1	2	1	-	1
CO5 [K6]	2	1	1	2	-	1	1
Weightage of the course	10	08	02	08	02	02	03
Weighted percentage of Course contribution to POs	**2.01**	**1.9**	**1.34**	**2.12**	**1.45**	**0.9**	**1.69**

Based on the level of contribution ('3'-High, '2'-Medium, '1'-Low '-' No Correlation)

UNIT I - LISTENING AND SPEAKING **(18 hrs)**

A. Listening

Listening to interviews

Listening to news reading

Listening to instructions-download apps in mobile handsets, cooking, sending e-mail

B. Speaking

Inviting person, offering suggestion and seeking permission

Making complaints and asking apology

Expressing likes, dislikes, hopes, wishes, regrets, sympathy, offering condolences, compliments and praising

Reporting conversations, facts, meetings/interviews, ongoing activities and future plans

Talking about the weather, past &future events, interesting plans and arrangements

UNIT II - READING AND WRITING **(18 hrs)**

A. Reading

Reading advertisements

Reading notices

Reading short passages

B. Writing

Proverb Expansion

Paragraph Writing

Essay writing

UNIT III - WORD POWER **(18 hrs)**

Synonyms & Antonyms

Misspelt words

Words related to- House, Clothing, Food, Education, Speaking, Holidays and Sports

UNIT IV - GRAMMAR **(18 hrs)**

Preposition and its kinds

Conjunction and its kinds

Articles

Tenses

UNIT V - LANGUAGE THROUGH LITERATURE **(18 hrs)**

A. Poetry

Sarojini Naidu	-	The Queen's Rival
John Masefield	-	Laugh and be Merry
Alfred Noyes	-	The Highwayman

B. Short Story

Somerset Maugham	-	The Ant and the Grasshopper

Katherine Mansfield - A Cup of Tea

TEXTBOOKS

1. Carthy Mc., and Felicity O'Dell. *English Vocabulary in Use (Upper intermediate)*. UK: Cambridge University Press, 2005.
2. Pillai, Radhakrishna and K.Rajeevan. *Spoken English for You (Level One)*. Chennai: Emerald Publishers, 2009.
3. Pillai, Radhakrishna. *Emerald English Grammar and Composition.* Chennai: Emerald Publishers, 2016.

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1. *Life Skills (Jeevan Kaushal) Facilitators' Guidelines*. New Delhi: University Grants Commission, 2021.
2. Radha, Alamelu et.al. *Situational Grammar and Composition.* Chennai:New Century Book House Pvt. Ltd,2008.
3. Sadanand, Kamalesh and Susheela Punitha. *Spoken English- A Foundation Course for speakers of Tamil*. Mumbai: Orient Blackswan, 2009.
4. Subramanian A.E. *Gifts to Posterity.* Chennai*: Anu Chitra Publications*, 2003.
5. Taylor, Grant. *English Conversation Practice*. New Delhi: Tata McGraw Hill Publishers, 2001.
6. Tilak, Raghukul. *Sarojini Naidu Selected Poems.* New Delhi: Educational Publishers, 2009.

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3. https://learnenglish.britishcouncil.org/general-english/stories
4. https://www.talkenglish.com/lessonindex.aspx
5. https://www.englishhelper.com/
6. https://www.englishpage.com/

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF INFORMATION TECHNOLOGY
UG PROGRAMME – B.Sc. Information Technology
SEMESTER – II
CORE COURSE – III: DATA STRUCTURES AND ALGORITHMS WITH C++
(21UITC21)
(From 2021-2022 Batch onwards)

HOURS/WEEK: 5 **INT.MARKS : 40**
CREDITS : 5 **EXT.MARKS : 60**
DURATIONS : 75 hrs **MAX.MARKS: 100**

Preamble

This course introduces the learners about the features of high-level language and techniques of organizing the data.

Course Outcomes (CO)

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

CO1[K1]: state the basic knowledge and the features of object oriented programming language

CO2[K2]: explain the various techniques to perform the concept of class

CO3[K3]: apply the data structure techniques to organize the data

CO4[K4]: classify the data representation techniques to present the data

CO5[K4]: analyse the efficiency of various algorithms to structure the data

CO-PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	3	2	-	2	-	-	1
CO2[K2]	3	3	-	2	-	1	-
CO3[K3]	2	3	2	2	1	1	1
CO4[K4]	2	1	1	2	2	1	1
CO5[K4]	2	1	2	2	1	2	1
Weightage of the course	12	10	05	10	04	05	04
Weighted percentage of Course contribution to POs	2.41	2.38	3.36	2.65	2.9	2.25	2.26

Based on the level of contribution ('3'-High, '2'-Medium, '1'-Low '-' No Correlation)

UNIT I **(15 hrs)**

Principles of Object-Oriented Programming: Basic Concepts of Object Oriented Programming – Benefits of OOP – Applications of OOP. **Beginning with C++:** A Simple C++ Program – Structure of C++ Program – Creating the Source File. **Tokens, Expressions and Control Structures:** Introduction – Tokens – Keywords – Identifiers and Constants – Basic Data Types – User-Defined Data Types – Storage Classes – Symbolic Constants – Type Compatibility – Derived Data Types – Operators in C++ – Scope Resolution Operators – Member Dereferencing Operators – Memory Management Operators – Manipulators. **Functions in C++:** The Main Function – Function Prototyping – Call by Reference – Return by Reference – Inline Functions – Default Arguments – Const Arguments – Recursion – Function Overloading – Friend and Virtual Functions.

UNIT II **(15 hrs)**

Classes and Objects: Specifying a Class – Defining a Member Functions – C++ Program with Class – Making an Outside Function Inline – Nesting of Member Functions – Private Member Functions – Arrays within a Class – Memory Allocation for Objects – Arrays of Objects – Object as Function Arguments. **Constructors and Destructors:** Introduction – Constructors – Parameterized Constructors – Copy Constructor – Destructors**. Operator Overloading and Type Conversions:** Introduction – Defining Operator Overloading – Overloading Unary Operators – Overloading Binary Operators – Rules for Overloading Operators – Type Conversions.

UNIT III **(15 hrs)**

Inheritance: Introduction – Defining Derived Class – Single inheritance – Multilevel Inheritance – Multiple Inheritance – Hierarchical Inheritance – Hybrid Inheritance – Virtual Base Classes – Abstract Classes. **Pointers, Virtual Functions and Polymorphism:** Introduction – Pointers – Pointers to Objects – This Pointer – Polymorphism – Virtual Functions.

UNIT IV **(15 hrs)**

Introduction and Overview: Definition – Concepts of Data Structures – Overview of Data Structures – Implementation of Data Structures. **Linked Lists:** Definition – Single Linked List – Circular Linked List – Double Linked List – Circular Double Linked List. **Trees:** Basic Terminologies – Definition and Concepts – Representation of Binary Tree – Operations on a Binary Tree.

UNIT V **(15 hrs)**

Introduction: Fundamentals of Algorithmic Problem Solving. **Brute Force:** Selection Sort & Bubble Sort. **Divide & Conquer:** Merge Sort – Quick Sort – Binary Search. **Decrease-and-Conquer:** Depth-First Search and Breadth-First Search. **Dynamic Programming:** Warshall's and Floyd's Algorithms. **Greedy Technique:** Prim's Algorithm – Kruskal's Algorithm – Dijikstra's Algorithm.

TEXTBOOKS

1. E. Balagurusamy. *Object Oriented Programming with C++.* Chennai: Tata McGraw Hill Publishing Company Limited, 2018. **(UNITS I, II & III)**
2. Debasis Samantha. *Classic Data Structures.* New Delhi: PHI Learning Private Limited, 2010. **(UNIT IV)**
3. Anany Levitin. *Introduction to the Design and Analysis of Algorithms.* Delhi: Pearson Education, 2006. **(UNIT V)**

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1. Seymour Lipschutz. *Data Structures with C Schaum's Outlines*. New Delhi: Tata McGraw-Hill Publications, 2017.
2. Robert Sedgewick and Kevin Wayne. *Algorithms*. Indianapolis: Addision-Wesley, 2014.
3. Michale T. Godrich. *Data Structures and algorithms*. USA: Wiley Publications, 2011.

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2. https://www.whitman.edu/mathematics/c++_online/c++.pdf
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4. http://www.uoitc.edu.iq/images/documents/informatics-institute/Competitive_exam/DataStructures.pdf
5. https://kiransrinivas.files.wordpress.com/2012/05/principles-of-data-structures-using-c-and-c-v-das-new-age-2008-bbs.pdf

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF INFORMATION TECHNOLOGY
UG Programme – B.Sc. Information Technology
SEMESTER – II
CORE COURSE – IV: PRACTICAL: DATA STRUCTURES AND ALGORITHMS USING C++ (21UITC2P)
(From 2021-2022 Batch onwards)

HOURS/WEEK: 5 **INT.MARKS : 50**
CREDITS : 4 **EXT.MARKS : 50**
DURATION : 75 hrs **MAX.MARKS: 100**

Preamble

This course aims to implement the various techniques of organizing the data and to provide possible ways for solving the problem.

Course Outcomes (CO)

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

CO1[K3]: utilize the features of OOPS to perform the basic operations
CO2[K3]: apply the techniques of inheritance to implement the payroll system
CO3[K4]: examine the various forms of linked list to perform data traversal
CO4[K4]: analyse the various methods of sorting and organizing data
CO5[K5]: evaluate the processing method of depth-first search algorithm to perform data traversal using graph

CO-PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K3]	3	2	-	2	-	-	1
CO2[K3]	3	2	-	2	-	1	-
CO3[K4]	2	2	1	2	2	1	2
CO4[K4]	2	2	2	2	1	2	1
CO5[K5]	2	1	1	2	1	2	1
Weightage of the course	12	09	04	10	04	06	05
Weighted percentage of Course contribution to POs	**2.41**	**2.14**	**2.68**	**2.65**	**2.9**	**2.7**	**2.82**

Based on the level of contribution ('3'-High, '2'-Medium, '1'-Low '-' No Correlation)

C++

1. To perform sorting numbers using control structures.
2. To implement matrix operations using classes and objects.
3. To perform arithmetic operation using function overloading.

4. To perform Student mark list using single inheritance.
5. To perform payroll preparation using hybrid inheritance.

DATASTRUCTURE

6. To implement a single linked list.
7. To implement a double linked list.
8. To implement a circular linked list.
9. To perform stack operations using array.
10. To perform queue operations using array.
11. To implement a binary tree operations.
12. To perform a bubble sort.
13. To implement a selection sort.
14. To perform a merge sort.
15. To perform a quick sort.
16. To implement the depth-first search algorithm.

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF MATHEMATICS
UG Programme - B.Sc. (COMPUTER SCIENCE/INFORMATION TECHNOLOGY)/BCA
SEMESTER - II
ALLIED COURSE - II: OPERATIONS RESEARCH
(21UCSA21/21UITA21/21UCAA21)
(From 2021-2022 Batch onwards)

HOURS/WEEK: 4 **INT. MARKS : 40**
CREDITS : 4 **EXT. MARKS : 60**
DURATION : 60 hrs **MAX. MARKS: 100**

Preamble

This course introduces the learners to the importance of Operations Research and some techniques to arrive at optimal solutions to complex decision-making problems.

Course Outcomes (CO)

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

CO1[K1]: state the scope, phases of operations Research and the classification of optimization models
CO2[K2]: explain the computational algorithms for various optimization methods
CO3[K3]: compute optimum solution of the linear programming, transportation, and assignment problems
CO4[K4]: examine the solutions of the optimization problems
CO5[K6]: formulate the mathematical expression of the linear programming model from the study of the situation and derive solutions to the problem

CO-PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	1	1	-	-	-	-	-
CO2[K2]	2	3	1	1	-	-	-
CO3[K3]	2	3	2	1	-	1	1
CO4[K4]	2	3	2	1	-	1	1
CO5[K6]	2	3	2	1	-	2	2
Weightage of the course	09	13	07	04	0	04	04
Weighted percentage of Course contribution to POs	**1.81**	**3.09**	**4.7**	**1.06**	**0**	**1.8**	**2.26**

Based on the level of contribution ('3'-High, '2'-Medium, '1'-Low, '-' No Correlation)

UNIT I **(12 hrs)**

Origin and Development of OR: Introduction – Definitions – Scope of Operations Research – Phases of OR – Models in Operations Research – Advantages of a Model – Classification of Models. **Linear Programming:** Introduction –Formulation of LP Problems.

UNIT II **(12 hrs)**

Graphical Method: Procedure of Solving LPP by Graphical Method – General Formulation of LPP – Matrix Form of LPP – Some Important Definitions – Canonical or Standard Forms of LPP. **Simplex Method:** Introduction – Definition – Simplex Algorithm.

UNIT III **(12 hrs)**

Artificial Variables Technique: Introduction – The Big M Method – Two phase Simplex Method – Degeneracy – Unbounded Solution.

UNIT IV **(12 hrs)**

Transportation Problem: Introduction –Mathematical Formulation – Definitions – Optimal Solution – Optimality Test.

UNIT V **(12 hrs)**

Assignment Problem: Introduction – Definition – Hungarian Method Procedure – Unbalanced Assignment Problem–Maximisation in Assignment Problem.

TEXTBOOK

1. S.Kalavathy. *Operations Research.* NewDelhi: Vikas Publishing House Pvt Ltd, Second Edition, 2007.

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1. S.Arumugam and A.Thangapandi Isaac. *Operations Researchs Volume (Linear Programming).* Palayamkottai: New Gamma Publishing House, 2003.
2. S.D.Sharma. *Operations Research.* Meerut: Kedar Nath Ram Nath & Co, 2000.
3. R.Panneerselvam. *Operations Research.* New Delhi:Prentice Hall of India Private Limited, Second Edition, 2006.

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2. https://people.bath.ac.uk/masss/ma30087/handout6.pdf
3. https://youtu.be/BUGIhEecipE
4. https://www.google.co.in/books/edition/Operations_research/Ez_JBUtbglIC?hl=en&gbpv=1&dq=operation+research+by+gupta&printsec=frontcover
5. https://www.google.co.in/books/edition/Operations_Research/0EE8BAAAQBAJ?hl=en&gbpv=1&dq=operation+research+by+gupta&printsec=frontcover

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
UG PROGRAMME
SEMESTER –II
ABILITY ENHANCEMENT COMPULSORY COURSE: II -VALUE EDUCATION
(21UVED21)
(From 2021 - 2022 Batch onwards)

HOURS/WEEK: 1 **INT. MARKS : 40**
CREDIT : 1 **EXT. MARKS : 60**
DURATION : 15 hrs **MAX. MARKS: 100**

Preamble

This course aims to promote the values of peace, non-violence, religious tolerance and secular thinking among the learners and equip the learners for a harmonious living in the multi-cultural pluralistic society.

Course Outcomes (CO)

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

CO1[K1]: identify the basic human values and ethics necessary for harmonious Human relationship

CO2[K2]: explain the significance of social values and religious tolerance to live in Peace

CO3[K3]: articulate the life-changing principles of brotherhood, honesty, loyalty and community solidarity

CO4[K4]: analyse emotional, social, spiritual attribute to acquire well balanced Personality

CO5[K4]: examine the importance of harmonious living in the multi-cultural Pluralistic society.

CO-PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	2	1	-	1	1	-	2
CO2[K2]	2	1	-	1	2	1	2
CO3[K3]	2	1	-	1	2	1	1
CO4[K4]	1	1	1	1	2	1	1
CO5[K4]	1	1	-	1	2	1	1
Weightage of the course	08	05	01	05	09	04	07
Weighted percentage of Course contribution to POs	**1.61**	**1.19**	**0.67**	**1.32**	**6.52**	**1.8**	**3.95**

Based on the level of contribution ('3'-High, '2'-Medium, '1'-Low '-' No Correlation)

UNIT I – VALUES AND INDIVIDUAL (3 hrs)

Meaning of values – classification of values – Need for value education – Personal values like adaptability, courage, cheerfulness, dignity of labour and self control – Self discipline - Self Confidence - Self initiative - Social values like sacrifice, forgiveness, Honesty, good manners, tolerance, friendship, hospitality, cooperation and civic sense – Moral values like purity, dedication, punctuality, loyalty, truthfulness and sense of duty.

UNIT II – VALUES AND SOCIETY (3 hrs)

Definition of society – democracy – secularism – socialism – Human rights – social integration – Social Justice – Role models: Akbar, Balagangadhar Tilak, Abdul Kalam, Mother Teresa.

UNIT III – VALUES AND RELIGIONS (3 hrs)

Values in Hinduism, Christianity, Islam and Buddhism – Need for religious harmony inter faith dialogue – Role Models: Vivekananda, Narayana Guru, Aravindar, Tagore, Vallalar Ramalingar, Gandhi.

UNIT IV – VALUES AND NATIONAL INTEGRATION (3 hrs)

Secularism and National Integration – Message from the life of Gandhiji, Nehru, Bharathi, Subash Chandra Bose, Sarojini Naidu etc.

UNIT V – VALUES AND SCIENCE (3 hrs)

Indian Gurus – Indian Scientists – Indian Universities – Indian Mathematicians and World Scientists – Science and Religion – Science, Technology development and values – Science and Human values.

TEXTBOOK

1. Pitchaikani Prabhaharan, A. Babu Franklin, M.Archanadevi, *Value education*, Sri Kaliswari college (Autonomous), Sivakasi, 2017.

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1. Subramanyam, K. *Values in Education*, Ramana Publications, 1995
2. Swamy Chidbhavananda, *Indian National Education*, Publication by Ramakirshna Tapovanam.
3. அறிஞர் குழு (தொகுப்பு). *வாழ்வியல் விழுமியங்கள்*, உலக சமுதாய சேவா சங்கம், ஆழியாறு.

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SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF INFORMATION TECHNOLOGY
UG Programme – B.Sc. Information Technology
SEMESTER – II
SKILL ENHANCEMENT COURSE – II: PRACTICAL: ADVANCED WEB PROGRAMMING (21UITS2P)
(From 2021-2022 Batch onwards)

HOURS/WEEK: 2 **INT. MARKS : 50**
CREDIT : 1 **EXT. MARKS : 50**
DURATION : 30 hrs **MAX. MARKS: 100**

Preamble

This course introduces the learners to the methodologies and best practices of designing and developing modern websites.

Course Outcomes (CO)

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

CO1[K2]: interpret the concept of HTML to execute the form elements
CO2[K3]: apply the different methods to use CSS for the web pages
CO3[K4]: examine the different ways to incorporate the validation techniques
CO4[K4]: analyse the concept of content loading in the web page using AJAX
CO5[K6]: design and create a new professional web site

CO-PO Mapping table (Course Articulation Matrix)

CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K2]	2	2	-	2	-	-	1
CO2[K3]	2	2	-	2	-	1	-
CO3[K4]	2	2	-	2	-	1	-
CO4[K4]	2	2	1	2	-	1	-
CO5[K6]	2	1	1	1	1	2	1
Weightage of the course	10	09	02	09	01	05	02
Weighted Percentage of Course contribution to POs	**2.01**	**2.14**	**1.34**	**2.38**	**0.72**	**2.25**	**1.13**

Based on the level of contribution ('3'-High, '2'-Medium, '1'-Low, '-' No Correlation)

HTML5 AND CSS

1. To design HTML page using image tag.
2. To implement HTML page using form elements.
3. To implement HTML page with the media elements.

4. To write an HTML code for demonstrating the usage of inline CSS.
5. To write an HTML code for demonstrating the usage of internal CSS.
6. To write an HTML code for demonstrating the usage of external CSS.
7. To design a web site having the following: Home, About Us, Gallery and Contact Us.

JAVASCRIPT

8. To create a date picker using javascript code.
9. To display browsers information for a web page using javascript
10. To validate the form elements using javascript.

AJAX

11. To load the content from a file using AJAX.
12. To implement search box using AJAX.

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
UG PROGRAMME
SEMESTER – II
DISASTER MANAGEMENT (21UDMG21)
(From 2021-2022 Batch onwards)

HOURS/WEEK	**: 1**	**INT. MARKS**	**: 40**
CREDIT	**: 1**	**EXT. MARKS**	**: 60**
DURATION	**: 15 hrs**	**MAX. MARKS**	**: 100**

Preamble

This course introduces the learners to know the causes and impact of disasters and the agencies for disaster management in India.

Course Outcomes (CO)

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

CO1[K1]: outline the causes and impact of disasters.

CO2[K2]: explain the features of national policy on disaster management.

CO3[K3]: present the issues in rehabilitation.

CO4[K4]: classify the mitigation measures.

CO5[K5]: assess the role of the agencies for disaster management.

CO-PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	2	1	1	1	-	2	2
CO2[K2]	2	1	-	1	-	-	1
CO3[K3]	1	2	1	1	-	-	2
CO4[K4]	1	2	-	1	1	2	2
CO5[K5]	1	2	-	1	1	-	1
Weightage of the course	07	08	02	05	02	04	08
Weighted percentage of Course contribution to POs	**1.41**	**1.9**	**1.34**	**1.32**	**1.45**	**1.8**	**4.52**

Based on the level of contribution ('3'-High, '2'-Medium, '1'-Low '-' No Correlation)

UNIT I **(3 hrs)**

Introduction – Disaster – Hazards – Causes and Impact of Disasters – Levels ofDisaster – Casual Factors of Disaster – Phases of a Disaster.

UNIT II **(3 hrs)**

Disaster Mitigation – Risk Reduction Measures – Mitigation Actions – DisasterManagement Cycle – Classification of Mitigation Measures.

UNIT III **(3 hrs)**

Disaster Preparedness and Planning – Objectives – Strategies – Elements of DisasterPreparedness – Principles of Disaster Planning.

UNIT IV **(3 hrs)**

Disaster Rehabilitation – Issues in Rehabilitation – Objectives – Approaches –Elements of a Rehabilitation Programme.

UNIT V **(3 hrs)**

Framework Disaster Management in India – Features of National Policy on DisasterManagement – Primary and Secondary Relief Functions of Central Government – DisasterManagement Act 2005 – Agencies for Disaster Management: India Red Cross Society,NIDM – Bharat Scouts and Guides, India Paramilitary Forces.

TEXTBOOK

1. Satish Modh. *Introduction to Disaster Management*. New Delhi: Macmillan Publishers India Limited, 1stEdition, 2015.

REFERENCES

Books

1. Balamurugan P K and Ajith Kumar S. *Disaster Management*. Chennai: New Century Book House Private Limited, 1stEdition, 2020.
2. Dasgupta R.*Disaster Management and Rehabilitation.* New Delhi: Mittal Publications, 1stEdition, 2010.
3. NarayananB.*Disaster Management*. NewDelhi: A.P.H. Publishing Corporation,1st Edition, 2009.

Web Sources

1. https://nptel.ac.in/courses/105/104/105104183/
2. https://nidm.gov.in/

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF TAMIL
UG Programme - B.A/B.Sc/BCA
SEMESTER - III
பொதுத்தமிழ் - III (21UTAL31)
(From 2021-2022 Batch onwards)

HOURS / WEEK : 6 **INT. MARKS : 40**
CREDITS : 3 **EXT. MARKS : 60**
DURATION : 90 hrs **MAX. MARKS: 100**

நோக்கம்

காப்பியம், சிற்றிலக்கியம், உரைநடை உள்ளிட்ட இலக்கிய வகைகளை அறிமுகம் செய்து, அவற்றைச் சமூக, சமயச் சூழலில் விளங்க வைத்து, யாப்பு, அணி உள்ளிட்ட மொழிக் கட்டமைப்புகளை உணர்த்தி, உரைநடை மூலம் படைப்பாளராகும் தகுதியைப் பெற வைத்து, பல்வேறு நிகழ்வுகளில் நடைபெறும் போட்டிகளில் பங்கேற்கச் செய்யும் வகையில் இத்தாள் வடிவமைக்கப்பட்டுள்ளது.

கற்றலின் பயன்கள்

இத்தாளை வெற்றிகரமாக முடித்தவுடன் மாணவர்கள்,

CO1[K1]: காப்பியங்களில் கூறப்பட்டுள்ள வாழ்வியல் நெறிகளாகிய அறம், பொருள், இன்பம், வீடு ஆகியவற்றைப் பற்றி அறிவர்.

CO2[K2]: செய்யுட்களில் இடம்பெறும் அணிநலன்களைக் காண்பர்.

CO3[K3]: யாப்பு மரபைக் கற்றுணர்ந்து கவிதையை இனம் காணும் ஆற்றலைப் பெறுவர்.

CO4[K4]: சிற்றிலக்கியங்கள் உணர்த்தும் சமூகத்தையும் விழுமியத்தையும் விவாதிக்கும் திறனைப் பெறுவர்.

CO5[K4]: சமயங்கள் உணர்த்தும் அறக்கருத்துக்களைப் பகுப்பாய்வு செய்வர்.

CO-PO Mapping Table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	2	1	-	1	-	-	-
CO2[K2]	2	1	-	1	-	-	-
CO3[K3]	2	2	-	2	1	-	-
CO4[K4]	2	2	1	2	-	1	1
CO5[K4]	2	2	1	2	1	1	1
Weightage of the Course	10	8	2	8	2	2	2
Weighted percentage of Course Contribution to POs	**2.01**	**1.9**	**1.34**	**2.12**	**1.45**	**0.9**	**1.13**

Based on the level of contribution ('3'-High, '2'-Medium, '1'-Low '-' No Correlation)

கூறு I **(18 hrs)**

காப்பியம் ஐ: காப்பிய இலக்கிய வரலாறு, சிலப்பதிகாரம் - அடைக்கலக்காதை (முழுவதும்) - மணிமேகலை - பளிக்கறை புக்க காதை (முழுவதும்) - சீவக சிந்தாமணி - காந்தர்வ தத்தையார் இலம்பகம் (தேர்ந்தெடுக்கப்பட்ட 15 பாடல்கள்) - சிலைத்தொழிற் (657), கருங்கொடிப் புருவம் (658), திருமலர்க் கமலத் (662), விடுகணை விசையின் (701), கழித்த வேலேறு (715), தடங்கணாள் பணியினால் (716), சுரந்து வானம் (717), நீர்நின் றளகிற் (718), கல்சேர் பூண்கொள் (719), இருநில மடந்தை (720), தீந்தொடை நரம்பின் (721), பணிவரும் (722), விண்ணவர் வியப்ப (729), பருந்தும் நிழலும் (730), பண்ணொன்று பாட (735)

கூறு II **(18 hrs)**

காப்பியம் ஐஐ: திருவிளையாடற்புராணம் - கடல் சுவற வேல்விட்ட படலம் முழுவதும் - (19 பாடல்கள்) - கம்பராமாயணம் - ஆரணிய காண்டம் - சவரி பிறப்பு நீங்கு படலம் முழுவதும் (9 பாடல்கள்) - பாரதிதாசன் - சஞ்சீவி பர்வதத்தின் சாரல் (முழுவதும்)

கூறு III **(18 hrs)**

சிற்றிலக்கியம்: சிற்றிலக்கிய வரலாறு, காரைக்காலம்மையார் - அற்புதத் திருவந்தாதி - (1-15 பாடல்கள்) - மீனாட்சியம்மை பிள்ளைத்தமிழ்-வருகைப்பருவம் (10 பாடல்கள்) - முக்கூடற்பள்ளு - குடிமை - பெருமை (12-22 பாடல்கள்)

கூறு IV **(18 hrs)**

உரைநடை: உரைநடையின் தோற்றமும் வளர்ச்சியும், சொல்லின் செல்வன் - க.நஞ்சையன், படிப்பது எப்படி? - ம.திருமலை, தொல்காப்பியத்தில் கோளியல் நெறி - ச.பாரிஜாதம், பாவேந்தரின் சமுதாயப் பார்வை - பாக்கியமேரி, இசையும் இயல்பும் - கி.ஈஸ்வரி, கம்பராமாயணத்தில் உறவுகள் - பெ.மகேஸ்வரி

கூறு V **(18 hrs)**

யாப்பு: பாவின் பொதுவிலக்கணமும் வகைகளும் (வெண்பா - ஆசிரியப்பா - கலிப்பா - வஞ்சிப்பா) **அணிகள்:** உவமையணி - உருவக அணி - பிறிதுமொழிதல் அணி - வேற்றுமையணி - தற்குறிப்பேற்ற அணி - சிலேடை அணி

பாடநூல்

1. *தொகுப்பு நூல்,* தமிழியல் துறை, ஸ்ரீ காளீஸ்வரி கல்லூரி (தன்னாட்சி), சிவகாசி.

பார்வை நூல்கள்

1. சீனிவாசன், ரா. *சீவகசிந்தாமணி,* அணியகம், சென்னை, 2000.
2. தமிழண்ணல். *புதிய நோக்கில் தமிழ் இலக்கிய வரலாறு,* மீனாட்சி புத்தக நிலையம், மதுரை, 2008.
3. ஜகந்நாதன். கி.வா. *தமிழ்க் காப்பியங்கள் (ஆராய்ச்சி),* அமுத நிலையம் லிமிடெட், சென்னை, 1991.

வலைப்பதிவுகள் (Web Sources)

1. https://youtu.be/AY7R2D2GGQA
2. https://youtu.be/hmqTbZjrnu0
3. www.tamilvu.org/ta/courses-degree-c031-c0313-html-c03132I1-18030
4. https://ta.m.wikipedia.org/wiki/jkpopy;rpw;wpyf;fpaq;fs;
5. https://youtu.be/Q7du9EglmBg

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF ENGLISH
UG Programme - B.A./B.SC./BCA
SEMESTER- III
COMMUNICATIVE ENGLISH - III (21UENL31)
(From 2021-2022 Batch onwards)

HOURS/WEEK: 6 **INT. MARKS : 40**
CREDITS : 3 **EXT. MARKS : 60**
DURATION : 90 hrs **MAX. MARKS : 100**

Preamble

This course helps the learners to develop their communication skills in English through listening, speaking, reading and writing practices.

Course Outcomes (CO)

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

CO1[K1]: relate and state ideas by reading simple poems and listening to telephonic conversations

CO2[K2]: demonstrate effective speaking skills by making speech presentations, discussing television programmes and sports events

CO3[K3]: apply knowledge of word power and grammar rules through diary writing, dialogue writing and writing newspaper reports

CO4[K4]: analyze short fiction to develop language skills through literature

CO5[K6]: construct grammatically correct and logically coherent essays on global problems and environmental issues

CO-PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	2	1	-	2	-	-	-
CO2[K2]	2	2	-	2	1	1	-
CO3[K3]	2	2	1	2	1	1	-
CO4[K4]	2	2	1	2	-	-	1
CO5[K6]	2	1	1	1	1	1	1
Weightage of the course	10	08	03	09	03	03	02
Weighted percentage of Course contribution to POs	**2.01**	**1.9**	**2.01**	**2.38**	**2.17**	**1.35**	**1.13**

Based on the level of contribution ('3'-High, '2'-Medium, '1'-Low '-' No Correlation)

UNIT I -LISTENING AND SPEAKING **(18 hrs)**

A. Listening

Listening to short speech

Listening to telephonic conversation

Listening to poetry

B. Speaking

Telephone etiquette in telephone conversation

Answering the Telephone and asking for someone

Making enquiries on the phone, Leaving messages

Presentation: Global Warming, Pollution, Women Empowerment, Communicable Diseases, System of Education, Economy, Industry, Government etc

Discussion: Television Programmes, Lessons, College facilities, Local facilities, Sports-watching or Playing, Types of food, Types of transport.

UNIT II - READING AND WRITING **(18 hrs)**

Reading: Comprehension Passages: Newspaper articles, Reports and Paraphrase Stories.

Writing: Diary Writing**,** Dialogue Writing**,** Report Writing: Newspaper Reports, Field visits, Meetings and Future Plans

UNIT III - WORD POWER **(18 hrs)**

Portmanteau words

Idioms & Phrases

Words related to- Work, Time, Distance and Dimension, Environment, The Natural World and Global Problems

UNIT IV - GRAMMAR **(18 hrs)**

Sentence-Subject and Predicate

Kinds of Sentences

Sentence Patterns

Question Words and Framing Questions

Question Tags

Degrees of Comparison

Voice

UNIT V - LANGUAGE THROUGH LITERATURE **(18 hrs)**

Abridged version of Fiction

Alexandre Dumas	- The Count of Monte Cristo
Charles Dickens	- Oliver Twist
R.M.Ballantyne	- The Coral Island

TEXTBOOKS

1. Dickens, Charles. *Oliver, Twist*. Chennai: Nesting Books Publishing and Distributors (p) Ltd, 2018.
2. Dumas, Alexandre. The *Count of Monte Cristo*. Chennai: Nesting Books Publishing and Distributors (p) Ltd, 2018.
3. Carthy Mc., and Felicity O'Dell. *English Vocabulary in Use (Upper intermediate)*. UK: Cambridge University Press, 2005.
4. Pillai, Radhakrishna and K.Rajeevan. *Spoken English for You (Level One)*. Chennai: Emerald Publishers, 2009.

REFERENCES

Books

1. *Life Skills* (Jeevan Kaushal) *Facilitators' Guidelines*. New Delhi: University Grants Commission, 2021.
2. Dickens, Charles. *Oliver Twist*. Bangalore: Vasan Publications, 2011.
3. Sadanand, Kamalesh and Susheela Punitha. *Spoken English- A Foundation Course for speakers of Tamil*. Mumbai: Orient Blackswan, 2009.
4. Taylor, Grant. *English Conversation Practice*. New Delhi: Tata McGraw Hill Publishers, 2001.

Web Sources

1. https://www.cleverism.com/skills-and-tools/presentation-skills/
2. https://www.vappingo.com/word-blog/86-great-examples-of-portmanteau/
3. https://blog.hubspot.com/service/phone-etiquette
4. https://www.talkenglish.com/lessonindex.aspx
5. https://www.englishhelper.com/
6. https://www.englishpage.com/

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF INFORMATION TECHNOLOGY
UG Programme – B.Sc. Information Technology
SEMESTER – III
CORE COURSE – V: PROGRAMMING IN JAVA (21UITC31)
(From 2021-2022 Batch onwards)

HOURS/WEEK: 5 **INT.MARKS : 40**
CREDITS : 5 **EXT.MARKS : 60**
DURATION : 75 hrs **MAX.MARKS:100**

Preamble

This course familiarizes the learners with the features and core concepts of object oriented programming with detailed implementation of developing java applications.

Course Outcomes (CO)

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

CO1[K1]: state the basic concepts and features of JAVA programming

CO2[K2]: explain the methodology to implement class, objects, methods and JAVA packages

CO3[K3]: implement the mechanism of multi-threading and exception handling to perform robustness task

CO4[K4]: examine the usage of applets and AWT components to interpret the GUI interface.

CO5[K4]: analyze the simple java applet application and formulate the database connectivity

CO-PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	3	2	-	2	-	1	-
CO2[K2]	3	2	-	2	-	-	1
CO3[K3]	2	3	-	2	-	1	-
CO4[K4]	2	2	2	2	2	2	1
CO5[K4]	2	2	2	2	2	2	1
Weightage of the course	12	11	04	10	04	06	03
Weighted percentage of Course contribution to POs	**2.41**	**2.61**	**2.68**	**2.65**	**2.9**	**2.7**	**1.69**

Based on the level of contribution ('3'-High, '2'-Medium, '1'- Low '-'No Correlation)

UNIT I **(15 hrs)**

Java Evolution: Java History – Java Features – Java and Internet – Java Environment. **Overview of Java Language**: Introduction – Simple Java Program – Java Program Structure – Java Tokens – Java Statements – Implementing a Java Program– Java Virtual Machine – Command Line Arguments. Constants, Variables, Data Types – Operators and Expressions – Decision Making and Branching.

UNIT II **(15 hrs)**

Decision Making and Looping**. Classes, Objects and Methods**: Introduction – Defining a Class – Fields Declaration – Methods Declaration – Creating Objects – Accessing Class Members – Constructors – Method Overloading – Static Members – Nesting of Methods – Inheritance: Extending a Class – Overriding Methods – Final Variables and Methods – Final Classes – Finalizer Methods – Abstract Methods and Classes – Methods with varargs – Visibility Control. Arrays, Strings and Vectors – Interfaces Multiple Inheritance**.**

UNIT III **(15 hrs)**

Packages: Java API Packages – Using System Packages – Naming Conventions – Creating Packages – Accessing a Package – Using a Package – Adding a Class to a Package – Hiding Classes – Static Import. **Multithreaded programming**: Introduction – Creating Threads – Extending the Thread Class – Stopping and Blocking a Thread – Life Cycle of a Thread – Using Thread Methods – Thread Exceptions – Thread Priority – Synchronization. **Managing Errors and Exceptions**: Introduction – Types of Errors – Exceptions – Syntax of Exception Handling code – Multiple Catch Statements – Using Finally Statement – Throwing Our Own Exceptions.

UNIT IV **(15 hrs)**

Applet Programming: Introduction – How Applets differ from Applications – Building Applet Code – Applet Life Cycle – Creating an Executable applet – Design a Web Page – Applet Tag – Adding Applet to HTML File – Running the Applet – Abstract Window Toolkit I.

UNIT V **(15 hrs)**

Abstract Window Toolkit - II: Menus – Dialogs – Mouse Events and their Listeners – Adapter Classes – Inner Classes – Anonymous Inner Classes. **Java Database Connectivity:** Introduction – Establishing a Connection – Creation of Data Tables – Entering Data into the tables – Table Updating – Use of PreparedStatement – Obtaining Metadata – Using Transactions – Scrollable Result Sets – Stored Procedures.

TEXTBOOKS

1. E.Balagurusamy. *Programming with Java A Primer*. New Delhi: McGraw-Hill Education (India) Private Limited, 2015. **(UNITS I,II, III & IV)**

2. C.Muthu. *Programming with Java*. Chennai: Vijay Nicole Imprints Private Limited, 2011. **(UNITS IV & V)**

REFERENCES

Books

1. Patrick Naughton and Herbert Schildt. *JAVA2 - The Complete Reference*. New Delhi: Tata McGraw Hill, 2002.
2. Paul Deitel and Harvey Deitel. *JAVA How to Program.* New Delhi: Tata McGraw-Hill, 2015.
3. Herbert Schildt. *Complete Reference Java 2*. New Delhi: Tata McGraw-Hill Publishing Company Limited, 2009.

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4. https://www.iitk.ac.in/esc101/share/downloads/javanotes5.pdf
5. https://gfgc.kar.nic.in/sirmv-science/GenericDocHandler/138-a2973dc6-c024- 4d81-be6d-5c3344f232ce.pdf

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF INFORMATION TECHNOLOGY
UG Programme – B.Sc. Information Technology
SEMESTER – III
CORE COURSE – VI: PRACTICAL: PROGRAMMING IN JAVA (21UITC3P)
(From 2021-2022 Batch onwards)

HOURS/WEEK: 5 **INT.MARKS : 50**
CREDITS : 4 **EXT.MARKS : 50**
DURATION : 75 hrs **MAX.MARKS: 100**

Preamble

This course aims to implement the different features, concepts, methodology of java and to enhance the student's programming skills in developing a new applications using Java.

Course Outcomes (CO)

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

CO1[K2]: demonstrate the usage of classes, objects and interfaces in performing basic mathematical operations

CO2[K3]: apply the concept of inheritance, overloading and overriding to perform the real-world task

CO3[K4]: examine the different methodologies of implementing the constructor

CO4[K4]: analyse the various mechanisms of exception and thread

CO5[K6]: design and create interactive applications using applet, AWT components and JDBC

CO-PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K2]	3	2	-	2	-	1	-
CO2[K3]	3	2	-	2	2	2	-
CO3[K4]	2	3	1	2	-	-	-
CO4[K4]	2	3	1	2	-	1	2
CO5[K6]	2	1	1	2	2	2	2
Weightage of the course	12	11	03	10	04	06	04
Weighted percentage of Course contribution to POs	**2.41**	**2.61**	**2.01**	**2.65**	**2.9**	**2.7**	**2.26**

Based on the level of contribution ('3'-High, '2'-Medium, '1'-Low '-' No Correlation)

1. Write a java program to perform a number checking using class and object
2. Write a java program to perform matrix operation using class and object
3. Write a Java program to find the area of a square, rectangle and triangle by using Method Overloading
4. Write a java program to perform the banking application using multiple inheritance
5. To implement method overriding
6. Write a java program to perform a banking application Using multilevel inheritance
7. Write a java program to display the student mark list using constructor.
8. Write a java program to add two complex numbers using passing object as argument and return object.
9. Write a java program to create a thread using Thread class
10. To perform EB-Bill calculation using Package.
11. String manipulation using string methods
12. Write a Java program to throw the following exception
    a) Negative Array Size b) Array Index out of Bounds
    c) Divide by zero d) Null pointer exception
13. Write a java program to Design a basic calculator using AWT components.
14. Write a java program to display the following graphics in an applet window.
    a. Rectangles b. Circles
    c. Ellipses d. Arcs
15. To create two buttons named as PLAY and STOP and make text animation
16. Write a java program to create a file menu with option New, Save and Close, Edit menu with option cut, copy, and paste.
17. To write a program to perform a Java Prepared statement with Result set

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF INFORMATION TECHNOLOGY
UG Programme – B.Sc. Information Technology
SEMESTER – III
ALLIED COURSE – III: DIGITAL PRINCIPLES AND COMPUTER ORGANIZATION
(21UITA31)
(From 2021-2022 Batch onwards)

HOURS/WEEK: 4 **INT.MARKS : 40**
CREDITS : 4 **EXT.MARKS : 60**
DURATION : 60 hrs **MAX.MARKS: 100**

Preamble

This course introduces the learners to the ICs logic circuit design and basic architecture of memory and I/O organization in a computer system.

Course Outcomes (CO)

On Successful completion of the course, the learners will be able to

CO1[K1]: state the working flow of logic gates and boolean laws

CO2[K2]: explain the functionality of data processing circuits, flip–flops to perform the binary operations

CO3[K3]: apply the different methods of computer structures and instructions

CO4[K4]: examine the I/O device accessing ,basic concepts of memories and its types

CO5[K4]: classify the concept of pipelining and embedded systems

CO–PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	2	1	1	1	–	2	2
CO2[K2]	2	1	–	2	1	1	1
CO3[K3]	3	2	–	1	2	1	–
CO4[K4]	2	1	1	2	2	1	1
CO5[K4]	2	2	1	1	1	2	1
Weightage of the course	11	07	03	07	06	07	05
Weighted percentage of Course contribution to POs	**2.21**	**1.66**	**2.01**	**1.85**	**4.35**	**3.15**	**2.82**

Based on the level of contribution ('3'–High,'2'–Medium,'1'–Low,'–' No Correlation)

UNIT I **(12 hrs)**

Digital Logic: The Basic Gates – NOT, OR, AND – Universal Logic Gates – NOR, NAND – AND-OR-Invert Gates. **Combinational Logic Circuits:** Boolean Laws and Theorems – Sum of Products Method – Truth Table to Karnaugh Map – Pairs, Quads, and Octets – Karnaugh Simplifications – Don't-care Conditions – Product-of-sums Method – Product-of-sums Simplification. **Number Systems and Codes:** Binary Number System – Binary-to-decimal Conversion – Decimal-to-binary Conversion – Octal Numbers – Hexadecimal Numbers – The ASCII Code – The Exces-3 Code – The Gray Code.

UNIT II **(12 hrs)**

Data Processing Circuits : Multiplexers – Demultiplexers – 1-of-16 Decoder – BCD-to-decimal Decoders – Seven-segment Decoders – Encoders – Exclusive-OR Gates – Parity Generators and Checkers. **Arithmetic Circuits:** Binary Addition – Binary Subtraction – Unsigned Binary Numbers– Sign-magnitude Numbers – 2's Complement Representation – 2's Complement Arithmetic – Arithmetic Building Blocks – The Adder-Subtracter. **FLIP–FLOPS:** RS Flip-flops – Gated Flip Flops – Edge triggered RS Flip-Flops – Edge-triggered D Flip–Flops – Edge-triggered JK Flip–Flops – JK Master-Slave Flip-Flops.

UNIT III **(12 hrs)**

Basic Structure of Computers: Computer Types – Functional Units – Basic Operational Concepts – Bus Structures. **Input / Output Organization:** Accessing I/O devices – Interrupts – Direct Memory Access – Buses – Interface Circuit.

UNIT IV **(12 hrs)**

The Memory System: Some Basic concepts – Read-Only Memories – Speed, Size and Cost – Cache Memories – Virtual memories. **Arithmetic:** Design of Fast Adders – Multiplication of Positive Numbers – Integer Division.

UNIT V **(12 hrs)**

Basic Processing Unit: Some Fundamental Concepts – Execution of a Complete Instruction –Hardwired Control – Micro programmed Control. **Pipelining:** Basic Concepts – Data Hazards – Instruction Hazards. **Embedded Systems:** Examples of Embedded Systems – Processor Chips for Embedded Applications.

TEXTBOOKS

1. Donald P. Leach, Albert Paul Malvino and GoutamSaha. *Digital Principles andApplications.* New Delhi: Tata McGraw Hill Education Private Limited, 2006 **(UNITS I & II)**
2. Carl Hamacher, Zvonko Vranesic and Safwat Zaky. *Computer Organization*. New Delhi: The McGraw Hill Companies, 2002 **(UNITS III,IV & V)**

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1. Morris Mano. *Digital Logic & Computer Design*. New Delhi: Prentice Hall of India Publishing, 2004.
2. John D. Carpinelli. *Computer System Organization and Architecture*. New Delhi: Pearson Indian Education Service Private Limited, 2009.
3. Morris Mano. *Computer System Architecture*. New Delhi: Prentice Hall of India publishing, 2009.

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2. http://www.ee.ncu.edu.tw/~jfli/computer/lecture/ch05.pdf
3. https://profile.iiita.ac.in/bibhas.ghoshal/lecture_slides_coa/computer_arithmetic.pdf
4. http://web.ist.utl.pt/luis.tarrataca/classes/computer_architecture/Chapter10–ComputerArithemtic.pdf
5. https://nptel.ac.in/content/storage2/108/105/108105132/MP4/mod01lec01.mp4

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF INFORMATION TECHNOLOGY
UG Programme – B.Sc. Information Technology
SEMESTER – III
NON MAJOR ELECTIVE COURSE – I: OFFICE AUTOMATION AND E-GOVERNANCE (21UITN31)
(From 2021-2022 Batch onwards)

HOURS/WEEK: 2 **INT. MARKS : 40**
CREDIT : 1 **EXT. MARKS : 60**
DURATION : 30 hrs **MAX. MARKS: 100**

Preamble

This course introduces the learners to the features, basic concepts of office automation tools and E-commerce technologies.

Course Outcomes (CO)

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

CO1[K1]: state the usage of office package to implement the features of word

CO2[K2]: explain the built-in formulas to prepare a data entry sheet

CO3[K3]: utilize the components of power point to design a professional slide

CO4[K4]: classify the various strategies in World Wide Web and E - Marketing

CO5[K4]: examine the various methods of e-Payment systems

CO-PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	3	-	-	2	-	1	1
CO2[K2]	2	-	-	2	-	1	1
CO3[K3]	2	-	-	1	-	1	1
CO4[K4]	1	3	-	1	-	1	1
CO5[K4]	1	2	-	2	-	1	1
Weightage of the course	09	05	-	08	-	05	05
Weighted percentage of Course contribution to POs	**1.81**	**1.19**	**0**	**2.12**	**0**	**2.25**	**2.82**

Based on the level of contribution ('3'-High, '2'-Medium, '1'-Low, '-' No Correlation)

UNIT I **(6 hrs)**

Microsoft Word 2016: Modify Structure and Appearance of Text – Apply Paragraph Formatting – Apply Character Formatting – Create and Modify Lists – Change the Document Theme. **Merge Data with Documents and Labels:** Understand the Mail Merge Process – Start the Mail Merge Process – Choose and Refine the Data Source – Insert Merge Fields – Preview and Complete the Merge – Create Individual Envelops and Labels.

UNIT II **(6 hrs)**

Microsoft Excel 2016: Perform Calculations on Data – New Groups of Data – Define Excel Tables – Create Formulas to Calculate Values – Find and Correct Errors in Calculations. **Manage Worksheet Data:** Limit Data that Appears on Your Screen – Define Valid Sets of Values for Ranges of Cells.

UNIT III **(6 hrs)**

Microsoft PowerPoint 2016: Create and Manage Slides – Add and Remove Slides – Divide Presentations into Sections – Rearrange Slides and Sections – Apply Themes – Change Slide Backgrounds. **Insert and Manage Simple Graphics:** Insert, Move and Resize Pictures – Edit and Format Pictures. **Add Sound and Movement to Slides:** Animate Text and Pictures on Slides – Customize Animation Effects.

UNIT IV **(6 hrs)**

Enabling Technologies of the World Wide Web: World Wide Web – Internet Client – Server Application – Networks and Internets. **E-Marketing:** Traditional Marketing – Online Marketing – E-Advertising – E-Branding.

UNIT V **(6 hrs)**

E-Payment Systems: Digital Payment Requirements – Digital Token–Based E-Payments Systems – Classification of New Payment Systems – Properties of Electronic Cash – Cheque Payment System on the Internet – Digital Signature.

TEXTBOOKS

1. Joan Lamert and Curtis Frye. *Microsoft Office 2016 Step by Step.* Delhi: PHI Learning Private Limited, 2018. **(UNITS I, II & III)**
2. P.T Joseph and S.J. *E-Commerce – An Indian Perspective.* New Delhi: Prentice Hall of India private limited,2006 **(UNITS IV & V)**

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1. Asoke K Ghosh. *Microsoft Office XP Step by Step.* India: Prentice-Hall of India, 2001.

2. David Whiteley. *E-Commerce Strategy, Technologies and Applications.* New Delhi: Tata Mc-Graw-Hill, 2001.
3. Kamalesh K Bajaj and Debjani Nag. *E-Commerce – The Cutting edge of Business.* Tata McGraw – Hill Education, 2005.

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1. https://kupdf.net/queue/microsoft-word-2016-step-by-step-dr-soc pdf_58e94976dc0d606a35da97f7_pdf?queue_id=-1&x=1615444014&z=MTM2LjIzMi4yMTMuMTY2
2. https://www.geeksforgeeks.org/difference-between-traditional-marketing-and-digital-marketing/
3. https://nptel.ac.in/content/storage2/110/105/110105083/MP4/mod01lec02.MP4
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SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF INFORMATION TECHNOLOGY
UG Programme – B.Sc. Information Technology
SEMESTER – III
SKILL ENHANCEMENT COURSE – III: PRACTICAL: DIGITAL DESIGN
(21UITS3P)
(From 2021-2022 Batch onwards)

HOURS/WEEK: 2 **INT. MARKS : 50**
CREDIT : 1 **EXT. MARKS : 50**
DURATION : 30 hrs **MAX. MARKS: 100**

Preamble

This course introduces the learners to the basics of digital logic circuits and to explore the skills in configuring the logic, combinational and sequential circuits.

Course Outcomes (CO)

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

CO1[K1]: identify the various forms of digital ICs to perform logic gate operations

CO2[K3]: illustrate various mechanisms to implement the universal gates

CO3[K3]: apply the techniques of Boolean laws to simplify the digital circuits

CO4[K4]: examine the concept of combinational circuits by using adders and sub tractors

C05[K5]: justify the data flow of digital circuits to make counters and flip flop

CO-PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	2	2	-	1	1	1	-
CO2[K3]	2	2	-	1	-	1	-
CO3[K3]	2	2	-	2	1	-	-
CO4[K4]	1	1	1	1	1	1	1
CO5[K5]	2	1	1	1	2	1	1
Weightage of the course	09	08	02	06	05	04	02
Weighted percentage of Course contribution to POs	**1.81**	**1.9**	**1.34**	**1.59**	**3.62**	**1.8**	**1.13**

Based on the level of contribution ('3'–High,'2'–Medium,'1'–Low '–' No Correlation)

1. To implement the basic logic gates are AND, OR, NOT
2. To implement the NAND universal gate
3. To implement the NOR universal gate
4. To implement the EX–OR gate
5. To implement the demargan's Law
6. To implement the NAND as the universal gate
7. To implement the NOR as the universal gate
8. To implement the half adder
9. To implement the half subtractors
10. To implement the full adder
11. To implement the full subtractors
12. To implement the NAND RS Latch Flip–flop
13. To implement the NOR RS Latch Flip–flop

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF TAMIL
UG Programme - B.A./B.SC./BCA
SEMESTER - IV
பொதுத்தமிழ் - IV (21UTAL41)
(From 2021-2022 Batch onwards)

HOURS/WEEK : 6 **INT. MARKS : 40**
CREDITS : 3 **EXT. MARKS : 60**
DURATION : 90 hrs **MAX. MARKS: 100**

நோக்கம்

சங்கஇலக்கியங்களின் மேன்மைகளையும் வாழ்வியல் அறங்களையும் மாணவர்களுக்கு எடுத்துரைப்பதையும் புதினஇலக்கியத்தை அறிமுகப்படுத்துவதையும் நோக்கமாகக் கொண்டு இத்தாள் வடிவமைக்கப்பட்டுள்ளது.

கற்றலின் பயன்கள்

இத்தாளை வெற்றிகரமாக முடித்தவுடன் மாணவர்கள்,

CO1[K1]: புதின இலக்கிய வகைகளை அடையாளம் காண்பர்.
CO2[K2]: சங்க இலக்கியங்களில் உள்ள அறக்கருத்துக்களை எடுத்துரைப்பர்.
CO3[K3]: அக, புற இலக்கணங்களைக் கற்பர்.
CO4[K4]: சங்க இலக்கியங்களின் வாயிலாக மக்களின் வாழ்க்கை முறையினைப் பாகுபடுத்துவர்.
CO5[K5]: பண்டைய தமிழ் இலக்கிய ஆளுமைகளை மதிப்பிடுவர்.

CO-PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	2	1	-	1	-	-	-
CO2[K2]	2	1	-	2	-	-	-
CO3[K3]	2	2	-	2	1	-	1
CO4[K4]	2	2	1	2	1	1	-
CO5[K5]	2	2	1	2	-	1	1
Weightage of the course	10	8	2	9	2	2	2
Weighted percentage of Course contribution to POs	**2.01**	**1.9**	**1.34**	**2.38**	**1.45**	**0.9**	**1.13**

Based on the level of contribution ('3'-High, '2'-Medium, '1'-Low '-' No Correlation)

கூறு I **(18 hrs)**

எட்டுத்தொகை இலக்கிய வரலாறு - **குறிஞ்சித்திணை - நற்றிணை:** ஓங்குமலை நாட(55) - கழுது கால்கிளர(255). **முல்லைத்திணை - குறுந்தொகை:** பெருந்தண் மாரிப்(94), மடவவாழி மஞ்ஞை(251). **மருதத்திணை கலித்தொகை:** அகன்துறை அணிபெற(73), புள்இமிழ் அகல் வயல்(79). **நெய்தல் திணை - ஐங்குறுநூறு:** தாய்க்கு உரைத்த பத்து(10 பாடல்கள்). **பாலைத்திணை - அகநானூறு:** வளம்கெழு

திருநகர்ப்(17), கடல்முகந்து கொண்ட கமஞ்சூல்(43). **பரிபாடல்**: வையை - வளிபொரு மின்னொடு(12). **புறநானூறு**: இரும்பனை வெண்தோடு(45) - எமக்கே கலங்கல் (298), **பதிற்றுப்பத்து:** ஐந்தாம்பத்தில் மாமலை முழக்கின்.

கூறு II **(18 hrs)**

பத்துப்பாட்டு இலக்கிய வரலாறு - **பத்துப்பாட்டு:** குறிஞ்சிப்பாட்டு (முழுவதும்)

கூறு III **(18 hrs)**

சங்க மருவியகால இலக்கியவரலாறு - **திரிகடுகம்:** தற்புகழ்ச்சிக்குக் கூடாதவை - தொல் அவையும்(8) - புகழுக்குரிய மூவர் - மண்ணின் மேல் வான்(16), வீடுபேறு அடையும் வழிகள் - பற்று(22) - கற்றறிந்தார் கடமை - நுண்மொழி நோக்கிப்பொருள் (32), நல்லோர் நெறி - சான்றாருள் சான்றான் எனப்படுதல்(82). **நாலடியார்**: கூடாநட்பு (231-240). **இனியவை நாற்பது**: உடையான் வழக்கினிது(2) - மானம் அழிந்தபின்(13) - குழவிதளர்நடை(14) - பிறன்கைப் பொருள்வெளவான்(21) - வருவாய் அறிந்து (22). **இன்னா நாற்பது:** உண்ணாது வைக்கும்(16) - மாரிநாள் கூவும்(20) - யானையில் மன்னாக்(22) - சிறையில்லா மூதூரின்(23) - ஏமம்இல் மூதூர்(24). **திருக்குறள்**: அறத்துப்பால் - புகழ், இன்பத்துப்பால் - குறிப்பறிதல் (அதிகாரங்கள் முழுவதும்).

கூறு IV **(18 hrs)**

புதின இலக்கியவரலாறு, கூட்டுக்குஞ்சுகள் - இராஜம் கிரு‘ணன்.

கூறு V **(18 hrs)**

இலக்கணம் - தொல்காப்பியர் குறிப்பிடும் திணைக்கோட்பாடுகள் - அகப்பொருள் - புறப்பொருள் - உள்ளுறை - இறைச்சி - விண்ணப்பம் - புகார் - பாராட்டுக் கடிதங்கள் - அறிக்கை - செய்தி எழுதுதல்.

பாடநூல்கள்

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SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF ENGLISH
UG Programme - B.A./B.SC./BCA
SEMESTER- IV
COMMUNICATIVE ENGLISH - IV (21UENL41)
(From 2021-2022 Batch onwards)

HOURS/WEEK: 6 **INT. MARKS : 40**
CREDITS : 3 **EXT. MARKS : 60**
DURATION : 90 hrs **MAX. MARKS: 100**

Preamble

This course helps the learners to develop their communication skills in English through listening, reading, speaking and writing practices.

Course Outcomes (CO)

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

CO1[K1]: relate and state ideas by listening to lectures and reading narratives

CO2[K2]: demonstrate effective speaking skills through group discussions and answering interview questions

CO3[K3]: apply knowledge of word power and grammar rules through drafting Memorandum, Minutes of the meetings and Agenda

CO4[K4]: analyze tales from Shakespeare to develop language skills through literature

CO5[K6]: construct grammatically correct and meaningful sentences for Covering letters and Resume Writing and thereby preparing students towards employability

CO-PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	2	1	-	1	-	-	-
CO2[K2]	2	1	-	1	-	-	-
CO3[K3]	2	2	1	2	1	1	1
CO4[K4]	2	2	1	2	1	1	1
CO5[K6]	2	3	1	2	-	1	1
Weightage of the course	10	09	03	08	02	03	03
Weighted percentage of Course contribution to POs	**2.01**	**2.14**	**2.01**	**2.12**	**1.45**	**1.35**	**1.69**

Based on the level of contribution ('3'-High, '2'-Medium, '1'-Low '-' No Correlation)

UNIT I - LISTENING AND SPEAKING **(18 hrs)**

LISTENING

Listening to lectures
Listening to commentaries
Listening to narratives

SPEAKING

Welcome address and Vote of Thanks
Role Play
Anchoring
Group discussion
Interview questions

UNIT II - READING AND WRITING **(18 hrs)**

Reading Newspaper- articles, letter to editor, sports and entertainment

WRITING

Drafting:
Memorandum
Minutes of the meeting
Agenda
Resume writing & Covering letter

UNIT III - WORD POWER **(18 hrs)**

Words often confused
Analogy
Words related to- Health and Medicine, Pleasant and Unpleasant feelings, Success and Failure, Science and Technology and Travel

UNIT IV - GRAMMAR **(18 hrs)**

Identify Phrases and Clauses
Transformation of Sentences: Reported speech, Simple, Compound and Complex Sentences
Error Spotting

UNIT V - LANGUAGE THROUGH LITERATURE **(18 hrs)**

TALES FROM SHAKESPEARE

Romeo and Juliet
A Midsummer Night's Dream
The Merchant of Venice
King Lear
Macbeth

TEXTBOOKS

1. Carthy Mc., and Felicity O'Dell. *English Vocabulary in Use (Upper intermediate)*. UK: Cambridge University Press, 2005.
2. Pillai, Radhakrishna G., and K.Rajeevan. *Spoken English for You (Level One)*. Chennai: Emerald Publishers, 2009.

3. Pillai, Radhakrishna G. *Emerald English Grammar and Composition.* Chennai: Emerald Publishers, 2016.

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1. *Life Skills (Jeevan Kaushal) Facilitators' Guidelines*. New Delhi: University Grants Commission, 2021.
2. Radha, Alamelu and Kasthuri Bai. *Situational Grammar and Composition.* Chennai: New Century Book House Pvt. Ltd, 2008.
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4. Taylor, Grant. *English Conversation Practice*. New Delhi: Tata McGraw Hill Publishers, 2001.

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3. https://www.talkenglish.com/lessonindex.aspx
4. https://www.englishhelper.com/
5. https://www.englishpage.com/

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF INFORMATION TECHNOLOGY
UG Programme – B.Sc. Information Technology
SEMESTER – IV
CORE COURSE – VII: RELATIONAL DATABASE MANAGEMENT SYSTEM
(21UITC41)
(From 2021-2022 Batch onwards)

HOURS/WEEK: 5 **INT. MARKS : 40**
CREDITS : 5 **EXT. MARKS : 60**
DURATION : 75 hrs **MAX. MARKS: 100**

Preamble

This course introduces the learners to the basic concepts of database management systems and the structure of SQL queries.

Course Outcomes (CO)

On successful completion of the course, the learners will be able to
CO1[K1]: identify the basic concepts of database systems and relational model
CO2[K2]: classify design principles to design a database using E-R model
CO3[K3]: formulate the techniques of other related calculus languages
CO4[K4]: analyze the efficiency of different normal forms of a database
C05[K4]: examine the importance and usage of various concurrency controls

CO-PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	3	2	-	2	-	-	1
CO2[K2]	3	2	-	2	-	1	-
CO3[K3]	3	2	-	2	-	1	1
CO4[K4]	2	2	2	2	1	2	1
CO5[K4]	2	2	2	2	1	2	2
Weightage of the course	13	10	04	10	02	06	05
Weighted percentage of Course contribution to POs	**2.61**	**2.38**	**2.68**	**2.65**	**1.45**	**2.7**	**2.82**

Based on the level of contribution ('3'-High, '2'-Medium, '1'-Low, '-' No Correlation)

UNIT I **(15 hrs)**

Introduction: Database System Applications – Purpose of database systems – View of data – Database Languages – Relational Databases – Database Design – Transaction Management – Database Architecture – Database user and Administrators. **Introduction to the Relational Model:** Structure of Relational Databases – Database Schema – Keys – Schema Diagrams – Relational Query

Language – Relational Operations. **Introduction to SQL:** Overview of the SQL Query – SQL Data Definition – Basic Structure SQL Queries.

UNIT II **(15 hrs)**

Introduction to SQL: Additional Basic Operations – Set Operations – Aggregate Functions – Null Values – Nested Sub queries – Modification of the Database. **Database Design and E-R Model:** The Entity Relationship Model – Constraints – Entity Relationship Diagrams – Extend ER Features.

UNIT III **(15 hrs)**

Intermediate SQL: Join Expressions – Views-Integrity Constraints – SQL Data types and Schemas – Authorization. **Advanced SQL**: Functions and Procedures – Triggers. **Formal Relational Query Languages:** The Relational Algebra – The Tuple Relational Calculus – The Domain Relational Calculus.

UNIT IV **(15 hrs)**

Relational Database Design: Atomic Domain and First Normal Form – Decomposition using Functional Dependencies – Functional Dependency Theory – Decomposition using Functional Dependencies – Decomposition using Multivalued Dependencies – Database Design Process.

UNIT V **(15 hrs)**

Transaction Management: Transaction Concepts – A Simple Transaction model – Storage Structure – Transaction Atomicity and Durability – Serializability. **Concurrency Control**: Lock Based Protocols – Deadlock Handling – Timestamp Based Protocols – Validation Based Protocols.

TEXTBOOK

1. A. Silberschartz, H. Korth and S. Sudarshan. *Database System Concepts.* New York: McGraw-Hill Education (India) Private Limited, 2013.

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1. Alexis Leon and Mathews Leon. *Database Management Systems.* Chennai: Vikas Publishing, 2002.
2. Raghu Ramakrishnan and Johannes Gehrke. *Database Management Systems.* New York: McGraw International Edition, 2003.
3. Arun K Majmdev and Pritimay Bhattacharyya. *Database Management Systems.* New Delhi: Tata McGraw – Hill Publishing Company Limited, 2001.

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2. https://www.tutorialspoint.com/sql/sql-rdbms-concepts.htm
3. https://www.db-book.com/db6/practice-exer-dir/7s.pdf

4. https://nptel.ac.in/content/storage2/106/105/106105175/MP4/mod03lec11.mp4
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SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF INFORMATION TECHNOLOGY
UG Programme – B.Sc. Information Technology
SEMESTER – IV
CORE COURSE – VIII: PRACTICAL: RELATIONAL DATABASE MANAGEMENT SYSTEM (21UITC4P)
(From 2021-2022 Batch onwards)

HOURS/WEEK: 5 **INT. MARKS : 50**
CREDITS : 3 **EXT. MARKS : 50**
DURATION : 75 hrs **MAX. MARKS: 100**

Preamble

This course familiarizes the learners with the concepts of database management systems and enables them to implement the SQL queries and explore the database management skills.

Course Outcomes (CO)

On Successful completion of the course, the learners will be able to

CO1[K2]: express the basic concepts of database

CO2[K3]: develop programs using the simple queries and built in functions.

CO3[K3]: apply data Integrity constraints to design a secure database

CO4[K4]: analyse the basic of PL/SQL to integrate the SQL queries

C05[K4]: inspect the concept of functions, packages, stored procedures and user - defined exception

CO-PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K2]	3	2	-	2	-	1	-
CO2[K3]	3	3	-	2	1	-	-
CO3[K3]	3	3	-	2	-	1	-
CO4[K4]	2	2	2	2	1	2	1
CO5[K4]	2	2	2	2	1	2	1
Weightage of the course	13	12	04	10	03	06	02
Weighted percentage of Course contribution to POs	**2.61**	**2.85**	**2.68**	**2.65**	**2.17**	**2.7**	**1.13**

Based on the level of contribution ('3'-High, '2'-Medium, '1'-Low, '-' No Correlation)

1. To Perform DDL Commands such as
   Create table
   Alter table
   Drop table
2. To Write Queries using built in functions.
3. To Creating Tables and writing simple queries using
   a) Comparison Operators
   b) Logical Operators
   c) Set Operators
   d) Sorting and Grouping.
4. To write a Program using Normalizations (1NF, 2NF, 3NF).
5. Updating and altering tables using SQL.
6. To Creation of Students Information table and write PL/SQL Block find the Total, Average marks and Results.
7. Programming with Cursors: Code a PL/SQL Block to partition the students Information Table into two, one with the Passed and other with Failed.
8. Create a Database Trigger to check the data validity of Record.
9. Write a Recursive function to find
   a) Factorial of N
   b) Fibonacci Series with N terms.
10. To Design a PL/SQL program to handle User defined exception.
11. To Perform Armstrong Number using PL/SQL.
12. To perform student Mark list using PL/SQL.
13. To Create a Database Trigger to check the data validity of Record.

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF INFORMATION TECHNOLOGY
UG Programme –B.Sc. Information Technology
SEMESTER – IV
ALLIED COURSE – IV: NUMERICAL APTITUDE (21UITA41)
(From 2021-2022 Batch onwards)

HOURS/WEEK: 4 **INT. MARKS : 40**
CREDITS : 4 **EXT. MARKS : 60**
DURATION : 60 hrs **MAX. MARKS: 100**

Preamble

This course introduces the learners to quantitative & aptitude problems and make them confident to face any competitive exams.

Course Outcomes (CO)

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

CO1[K1]: state appropriate arithmetical methods to solve the problem
CO2[K2]: explain the various mathematical concepts involved in solving the problems
CO3[K3]: formulate the real life situations to analyze the key issues and factors
CO4[K4]: classify the various mathematical shortcut techniques to solve problems
CO5[K4]: examine the importance of comparative analysis of the data

CO-PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	3	2	-	2	-	1	-
CO2[K2]	3	2	-	2	-	1	-
CO3[K3]	2	2	-	2	1	2	-
CO4[K4]	2	2	1	2	1	1	2
CO5[K4]	2	2	1	2	2	1	2
Weightage of the course	12	10	02	10	04	06	04
Weighted Percentage of Course contribution to POs	**2.41**	**2.38**	**1.34**	**2.65**	**2.9**	**2.7**	**2.26**

Based on the level of contribution ('3'-High, '2'-Medium, '1'-Low, '-' No Correlation)

UNIT I **(12 hrs)**

Arithmetical Ability: Numbers – HCF and LCM of Numbers – Simplification – Square Roots and Cube Roots – Average.

UNIT II **(12 hrs)**

Problems on Numbers – Problems on Ages – Percentage – Profits and Loss – Ratio & Proportion.

UNIT III **(12 hrs)**

Time and Work – Time and Distance – Problems on Trains – Simple Interest – Compound Interest.

UNIT IV **(12 hrs)**

Area – Volume and Surface Area – Permutation and Combination – Probability –Heights & Distances.

UNIT V **(12 hrs)**

Data Interpretation: Tabulation – Bar Graphs – Pie Charts – Line Graphs.

TEXTBOOK

1. Dr.R.S. Aggarwal. *Quantitative Aptitude For Competitive Examination (Fully Solved)*. New Delhi: S. Chand & Company Pvt. Ltd, 2015.

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1. K. Kundan. *Concept of Arithmetic.* Delhi: BSC Publishing Co. Pvt. Ltd, 2011.
2. Ashish Aggarwal. *Quick Arithmetic.* New Delhi: S. Chand & Company Pvt. Ltd, 2016.
3. Dr.R.S. Aggarwal. *Objective Arithmetic.* New Delhi: S. Chand & Company Pvt. Ltd, 2018.

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2. https://www.pdfdrive.com/quantitative-aptitude-e175338822.html
3. https://www.bankpo.laqshya.in/free-study-material-for-bankpo-clerk-SBI-IBPS-rbi-Quantitative-Aptitude.pdf
4. https://www.pdfdrive.com/data-interpretation-for-cat-by-arihant-publication-e158219041.html
5. https://pdf.bankexamstoday.com/raman_files/Time%20and%20Work.pdf

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF INFORMATION TECHNOLOGY
UG Programme – B.Sc. Information Technology
SEMESTER – IV
NON MAJOR ELECTIVE COURSE – II: SYSTEM ADMINISTRATION AND MAINTENANCE (21UITN41)
(From 2021-2022 Batch onwards)

HOURS/WEEK: 2 **INT. MARKS : 40**
CREDIT : 1 **EXT. MARKS : 60**
DURATION : 30 hrs **MAX. MARKS: 100**

Preamble

This course aims to enhance students in the managing and maintaining of modern computer system, laptop configuration with basic administrative task associated with networks operating system.

Course Outcomes (CO)

On Successful completion of the course, the learners should be able to

CO1[K1]: describe the components of computer system
CO2[K2]: illustrate the installation mechanism to assemble the hardware components
CO3[K3]: discover the operating system based on customer needs to maintain the hardware
CO4[K4]: examine the components of desktop and the laptop
CO5[K4]: analyse the efficiency of different network topologies and for to ensure the system security

CO-PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	3	-	-	1	-	1	1
CO2[K2]	2	-	-	1	-	1	1
CO3[K3]	2	-	-	2	-	1	1
CO4[K4]	1	3	-	2	-	1	1
CO5[K4]	1	2	-	2	-	1	1
Weightage of the course	09	05	-	08	-	05	05
Weighted percentage of Course contribution to POs	**1.81**	**1.19**	**0**	**2.12**	**0**	**2.25**	**2.82**

Based on the level of contribution ('3'-High, '2'-Medium, '1'-Low '-' No Correlation)

UNIT I **(6 hrs)**

Introduction to Personal Computer: Describe a Computer System – Identify the Names, Purposes and Characteristics of Cases and Power Supplies – Identify the Names, Purposes and Characteristics of Internal Components – Identify the Names, Purposes and Characteristics of Ports and Cables – Identify the Names, Purposes and Characteristics of Input devices – Identify the Names, Purposes and Characteristics of Output devices.

UNIT II **(6 hrs)**

Safe Lab Procedures and Tool Use: Identify Safe Working Conditions and Procedures – Identify Tools and Software used with Personal Computer Components. **Computer Assembly Step by Step:** Open the Case – Install the Power Supply – Attach the Components to the Motherboard and Install the Motherboard. Install the Internal Drives –Install Drives in External Bayes – Install Adapter Cards – Connect all Internal Cables – Reattach Side Panels and Connect External Cables to the Computer –Boot the Computer for the First Time. **Basics of Preventive Maintenance and Troubleshooting:** Explain the Purpose of Preventing Maintenance – Identify the Steps of Troubleshooting Process.

UNIT III **(6 hrs)**

Fundamental Operating Systems: Explain the Purpose of an Operating System – Describe and Compare Operating Systems to include Purpose, Limitations and Compatibilities – Determine Operating System based on Customer Needs – Install an Operating System – Navigate a GUI (Windows) – Identify and Apply Common Preventive Maintenance Techniques for Operating Systems – Troubleshoot Operating Systems.

UNIT IV **(6 hrs)**

Fundamental Laptops and Portable Devices: Describe Laptops and Other Portable Devices – Identify and Describe the Components of a Laptop – Compare and Contrast Desktop and Laptop Components – Explain how to Configure Laptops – Compare the Different Mobile Phone Standards. **Fundamental Printers and Scanners:** Describe the Types of Printers Currently Available – Describe the Installation and Configuration Process of Printers – Describe the Types of Scanners Currently Available – Describe the Installation and Configuration Process of Scanners.

UNIT V **(6 hrs)**

Fundamental Networks: Explain the Principles of Networking – Describe Types of Networks – Describe Basic Networking Concepts and Technologies – Describe the Physical Components of a Network – Describe LAN Topologies and Architectures. **Fundamental Security:** Describe Security Threads.

TEXTBOOK

1. David Anfinson and Ken Quamme. *IT Essentials: PC Hardware and Software Companion Guide.* Indianapolis: Cisco Press, 2008.

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1. Quentin Docter, Emmett Dulaney and Toby Skandier. *Comp TIA A+ Complete Review Guide: Exam220-901, Exam 220 902.* Wiley Publications, 2015.
2. D.Balasubramanian. *Computer Installation and Servicing.* New Delhi: Tata McGraw Hill Education Private Limited, 2010.
3. Manahar Lotia, Pradeep Nair and Payal Lotia. *Modern Computer Hardware Course.* New Delhi: BPB Publications, 2017.

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3. https://www.google.co.in/books/edition/Windows_10_Essentials_for_Administration/v_JODQAAQBAJ?hl=en&gbpv=1&dq=system+administration+and+maintenance+course+books&printsec=frontcover
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SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF INFORMATION TECHNOLOGY
UG programme – B.Sc. Information Technology
SEMESTER – IV
SKILL ENHANCEMENT COURSE – IV: PRACTICAL: SOFT SKILL TRAINING
(21UITS4P)
(From 2021-2022 Batch onwards)

HOURS/WEEK: 2 **INT.MARKS : 50**
CREDIT : 1 **EXT.MARKS : 50**
DURATION : 30 hrs **MAX.MARKS: 100**

Preamble

This course enables the learners to deal with the external world in a collaborative manner, communicate effectively, take initiative, solve problems, and demonstrate a positive work ethic so as to hold a good impression and positive impact.

Course Outcomes (CO)

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

CO1[K1]: describe effectively the basic traits of soft skills
CO2[K2]: explain the importance of goal setting and preparations to achieve the goals
CO3[K3]: apply the interpersonal skills necessary for being a team leader
CO4[K4]: analyse the qualities of effective team building and leadership
CO5[K4]: develop essential soft skills required for group discussion and interviews

CO-PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	2	2	-	1	-	-	1
CO2[K2]	2	2	-	1	-	1	-
CO3[K3]	3	2	1	1	-	1	1
CO4[K4]	2	2	1	1	1	-	-
CO5[K4]	2	2	1	1	1	1	1
Weightage of the course	11	10	03	05	02	03	03
Weighted percentage of Course contribution to POs	**2.21**	**2.38**	**2.01**	**1.32**	**1.45**	**1.35**	**1.69**

Based on the level of contribution ('3'-High, '2'-Medium, '1'-Low '-' No Correlation)

1. To prepare personal & career goal setting (Short Term and Long Term).
2. To prepare a formal letter for applying a job.
3. To develop communication skills by performing prepared speech (Topics given in advance) and extempore speech (Onspot Topics).
4. To improve reading and listening skills provide article for reading, prepare question answer session from the article.
5. To know about team discussion, body language in a meeting group discussion will be conducted on various topics.
6. To enhance the writing skill by report preparation.
7. To develop a career profile/portfolio along with application letter.
8. To make a presentation on any informative topic.
9. To make the students to participate in team activity.
10. To conduct a mock interview.
11. To prepare a situation for stress management and time management.
12. To prepare a scenario on performing the leadership role.
13. To submit a complete report on software companies interview procedure.

Rules

Students will prepare their Resume and Attend a Mock Interview Individually.

Total = 100 Marks (Internal: 50 Marks, External: 50 Marks)

For Internal Marks

Written Exam	- 10 Marks
Presentation (2 Consolidated)	- 10 Marks
Resume Preparation	- 20 Marks
Mock GD	- 10 Marks
Total	- 50 Marks

For External Marks

Written Exam	- 10 Marks
Group Discussion	- 20 Marks
HR Interview	- 20 Marks
Total	- 50 Marks

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF INFORMATION TECHNOLOGY
UG Programme – B.Sc. Information Technology
SEMESTER – IV
SELF-PACED LEARNING (SWAYAM COURSE): ADVANCED COMPUTER ARCHITECURE (21UITM41)
(From 2021-2022 Batch onwards)

CREDITS : 2 **EXT. MARKS : 100**
DURATION: 8 Weeks **MAX. MARKS: 100**

Preamble

This course provides the learners with an opportunity for a lifelong learning by meeting the demand in terms of knowledge, skills and competencies.

Course Outcomes (CO)

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

CO1[K1]: identify the basic concepts of advanced computer architecture
CO2[K2]: demonstrate independent and self-paced learning for clear understanding of the concept
CO3[K3]: develop computer and communication skill to broaden their knowledge in the course
CO4[K3]: use high quality reading resources, communication tools and technology to send assignments and to take up test
C05[K4]: analyse critically and apply technical skills to comprehend the ideas prescribed

CO-PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	3	2	1	2	-	-	2
CO2[K2]	3	2	1	1	-	-	2
CO3[K3]	3	2	1	2	1	1	1
CO4[K3]	2	2	1	2	-	-	1
CO5[K4]	2	2	1	2	-	1	1
Weightage of the course	13	10	05	09	01	02	07
Weighted percentage of Course contribution to POs	**2.61**	**2.38**	**3.36**	**2.38**	**0.72**	**0.9**	**3.95**

Based on the level of contribution ('3'-High, '2'-Medium, '1'-Low '-' No Correlation)

WEEK 1

Review of Basic Computer Organization, Performance Evaluation Methods, Introduction to RISC Instruction Pipeline, Instruction Pipeline and Performance.

WEEK 2

Pipeline Hazards and Analysis, Branch Prediction, MIPS Pipeline for Multi-Cycle Operations.

WEEK 3

Compiler Techniques to Explore Instruction Level Parallelism, Dynamic Scheduling with Tomasulo's Algorithm and Speculative Execution.

WEEK 4

Advanced Pipelining and Superscalar Processors, Exploiting Data Level Parallelism: Vector and GPU Architectures, Architectural Simulation using gem5.

WEEK 5

Introduction to Cache Memory, Block Replacement Techniques and Write Strategy, Design Concepts in Cache Memory.

WEEK 6

Basic and Advanced Optimization Techniques in Cache Memory, Cache Optimization using gem5.

WEEK 7

Introduction to DRAM System, DRAM Controllers and Address Mapping, Secondary Storage Systems, Design Concepts in DRAM and Hard Disk.

WEEK 8

Tiled Chip Multi core Processors (TCMP), Routing Techniques in Network on Chip (NoC), NoC Router Micro architecture, TCMP and NoC: Design and Analysis, Future Trends in Computer Architecture Research.

TEXTBOOK

1. John L. Hennessy and David A. Patterson *Computer Architecture - A Quantitative Approach*. New York: Elsevier, 2012.

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Books

1. Vincent P. Heuring, Harry F. Jordan and T.G. Venkatesh. *Computer Systems Design and Architecture*. India: Pearson Prentice Hall, 2008.
2. William Stallings. *Computer Organization and Architecture*. India: Pearson Prentice Hall, 2009.
3. Dezsosima, Terence Fountain and Peter Kacsuk. *Advanced Computer Architectures - A Design Space Approach.* India: Pearson Prentice Hall, 2004.

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF INFORMATION TECHNOLOGY
UG Programme – B.Sc. Information Technolog
SEMESTER – IV
SELF – PACED LEARNING (SWAYAM COURSE): INTRODUCTION TO SOFT COMPUTING (21UITM42)
(From 2021-2022 Batch onwards)

CREDITS : 2 **EXT. MARKS : 100**
DURATION: 8 Weeks **MAX. MARKS: 100**

Preamble

This course provides the learners with an opportunity for a lifelong learning by meeting the demand in terms of knowledge, skills and competencies.

Course Outcomes (CO)

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

CO1[K1]: identify the basic concepts of introduction to soft computing
CO2[K2]: demonstrate independent and self-paced learning for clear understanding of the concept
CO3[K3]: develop computer and communication skill to broaden their knowledge in the course
CO4[K3]: use high quality reading resources, communication tools and technology to send assignments and to take up test
C05[K4]: analyse critically and apply technical skills to comprehend the ideas prescribed

CO-PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	3	2	1	2	-	-	2
CO2[K2]	3	2	1	1	-	-	2
CO3[K3]	3	2	1	2	1	1	1
CO4[K3]	2	2	1	2	-	-	1
CO5[K4]	2	2	1	2	-	1	1
Weightage of the course	13	10	05	09	01	02	07
Weighted percentage of Course contribution to POs	**2.61**	**2.38**	**3.36**	**2.38**	**0.72**	**0.9**	**3.95**

Based on the level of contribution ('3'-High, '2'-Medium, '1'-Low '-' No Correlation)

WEEK 1

Introduction to Soft Computing, Introduction to Fuzzy logic, Fuzzy membership functions, Operations on Fuzzy sets

WEEK 2

Fuzzy relations, Fuzzy propositions, Fuzzy implications, Fuzzy inferences

WEEK 3

Defuzzyfication Techniques-I, Defuzzyfication Techniques-II, Fuzzy logic controller-I, Fuzzy logic controller-II

WEEK 4

Solving optimization problems, Concept of GA, GA Operators: Encoding, GA Operators: Selection-I

WEEK 5

GA Operators: Selection-II, GA Operators: Crossover-I, GA Operators: Crossover-II, GA Operators: Mutation

WEEK 6

Introduction to EC-I, Introduction to EC-II, MOEA Approaches: Non-Pareto, MOEA Approaches: Pareto-I

WEEK 7

MOEA Approaches: Pareto-II, Introduction to ANN, ANN Architecture

WEEK 8

ANN Training-I, ANN Training-II, ANN Training-III, Applications of ANN

TEXTBOOK

1. Melanic Mitchell. *An Introduction to Genetic Algorithm*. London: First MIT press, 1999.

REFERENCES

Books

1. Collelo, Lament and Veldhnizer. *Evolutionary Algorithm for Solving Multi-objective, Optimization Problems*. Springer, 2nd Edition.
2. Timothy J. Ross. *Fuzzy Logic with Engineering Applications.* USA: Willey Publications, 2004.
3. Simon Haykin. *Neural Networks and Learning Machines.* Pearson India Education Services, 2019.

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
UG Programme
SEMESTER III & IV
PART V – EXTENSION
(From 2021 -2022 Batch Onwards)

HOURS/WEEK: 2
CREDIT : 1
DURATION : 60 hrs **INT. MARKS: 100**

Preamble

This course aims to promote holistic development among the youth by defining their roles and responsibilities towards ones family and their society and enables them to acquire professional skills and ethics.

Course Outcomes (CO)

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

CO1 [K1]: recognize the importance of community service through training and education

CO2 [K2]: interpret ecological concerns, consumer rights, gender issues & legal protection

CO3 [K3]: develop team spirit, verbal/non verbal communication and organizational ethics by participating in community service

CO4 [K4]: examine the necessity of professional skills & community-oriented services for a holistic development

CO5 [K6]: create awareness on human rights, legal rights, First Aid, Physical fitness and wellbeing

CO-PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1 [K1]	2	-	-	2	2	1	1
CO2 [K2]	2	1	-	2	1	1	1
CO3 [K3]	2	-	-	1	2	2	1
CO4 [K4]	1	1	1	1	2	2	1
CO5 [K6]	1	-	-	1	2	2	1
Weightage of the course	08	02	01	07	09	08	05
Weighted percentage of Course contribution to Pos	**1.61**	**0.48**	**0.67**	**1.85**	**6.52**	**3.6**	**2.82**

Based on the level of contribution ('3'-High,'2'-Medium,'1'-Low'-' No Correlation)

Details of the Courses

1	National Cadet Corps (NCC)	– 190 hrs
2	National Service Scheme (NSS)	– 240 hrs
3	Physical Education	
4	Red Ribbon Club (RRC)	
5	Youth Red Cross (YRC)	
6	Fine Arts Club	
7	Library and Information Service Club	
8	Yoga Club	
9	ECO Club	
10	Consumer Club	
11	Human Rights Club	
12	Women Empowerment Cell	
13	Legal Awareness League	

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF INFORMATION TECHNOLOGY
UG Programme – B.Sc. Information Technology
SEMESTER – V
CORE COURSE – IX: OPERATING SYSTEM (21UITC51)
(From 2021-2022 Batch onwards)

HOURS/WEEK: 5 **INT. MARKS : 40**
CREDITS : 5 **EXT. MARKS : 60**
DURATION : 75 hrs **MAX. MARKS: 100**

Preamble

This course aims to introduce the students to the basic concepts of operating system, various ways to implement scheduling algorithm, provide idea about preventing deadlock and to enhance the skill in managing the distributed systems.

Course Outcomes (CO)

On successful completion of the course, the learners will be able to
CO1[K1]: state the basic concept and features of operating system
CO2[K2]: identify the performance of different algorithms for scheduling a task
CO3[K3]: apply the prevention techniques to implement deadlock prevention
CO4[K4]: classify the methodology involved in memory management
CO5[K4]: examine the methods involved in organizing a file in a disk

CO-PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	3	2	-	2	-	1	-
CO2[K2]	2	2	1	2	-	2	-
CO3[K3]	2	2	2	2	1	2	-
CO4[K4]	3	2	2	2	-	1	1
CO5[K4]	2	2	2	2	1	1	1
Weightage of the course	12	10	07	10	02	07	02
Weighted percentage of Course contribution to POs	**2.41**	**2.38**	**4.7**	**2.65**	**1.45**	**3.15**	**1.13**

Based on the level of contribution ('3'-High, '2'-Medium, '1'- Low '-'No Correlation)

UNIT I **(15 hrs)**

Introduction: What is an Operating System – Mainframe Systems – Desktop Systems – Multiprocessor Systems – Distributed Systems – Clustered Systems – Real-Time Systems – Hand Held Systems. **Computer System**

Structures: I/O Structure – Storage Structure – Storage Hierarchy. **Operating System Structures**: System Components – Operating System Services – System Calls – System Programs – System Structure.

UNIT II **(15 hrs)**

Processes: Process Concepts – Process Scheduling – Operations on Processes – Cooperating Processes. **Threads**: Overview – Multithreading Models – Threading Issues – Windows2000 Threads – Java Threads. **CPU Scheduling**: Scheduling Criteria – Scheduling Algorithms–Multiprocessor Scheduling – Real-Time Scheduling – Algorithm Evaluation.

UNIT III **(15 hrs)**

Process Synchronization: The Critical Section Problem – Synchronization Hardware – Semaphores – Classic Problems of Synchronization – Monitors. **Deadlocks**: Deadlock Characterization – Method for Handling Deadlock – Deadlock Prevention – Deadlock Avoidance – Deadlock Detection – Recovery from Deadlock.

UNIT IV **(15 hrs)**

Memory Management: Swapping – Contiguous Memory Allocation – Paging – Segmentation – Segmentation with Paging. **Virtual Memory**: Demand Paging – Process Creation – Page Replacement – Allocation of Frames.

UNIT V **(15 hrs)**

File System Interface: File Concepts – Access Methods – Directory Structure – File System Implementation Directory Implementation – Allocation Methods – Free Space Management. **Mass Storage Structure**: Disk Structure – Disk Scheduling – Disk Management – Swap Space Management – RAID Structure.

TEXTBOOK

1. Abraham Silberschatz, Peter Baer Galvin and Greg Gagne. *Operating System Concepts.* New York: John Wiley & sons Inc, 2002.

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Books

1. Maurice J. Bach. *Design of unix Operating System.* New Delhi: Prentice Hall of India, 2002.
2. William S. Davis, T.M. Rajkumar. *Operating Systems.* New Delhi: Pearson Education, 2010.
3. Andrew S. Tanenbaum. *Modern Operating Systems.* India: Pearson India Education Services Pvt. Ltd, 2017.

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1. https://nptel.ac.in/content/storage1/106/102/106102132/MP4/mod01lec01.mp4
2. https://nptel.ac.in/content/storage/106/105/106105172/MP4/mod01lec02.mp4
3. https://nptel.ac.in/content/storage/106/105/106105172/MP4/mod02lec06.mp4
4. https://nptel.ac.in/content/storage/106/105/106105172/MP4/mod02lec07.mp4
5. https://nptel.ac.in/content/storage1/106/102/106102132/MP4/mod01lec01.mp4

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF INFORMATION TECHNOLOGY
UG Programme – B.Sc. Information Technology
SEMESTER – V
CORE COURSE – X: OPEN SOURCE TECHNOLOGY (21UITC52)
(From 2021-2022 Batch onwards)

HOURS/WEEK: 5 **INT. MARKS : 40**
CREDITS : 5 **EXT. MARKS : 60**
DURATION : 75 hrs **MAX. MARKS: 100**

Preamble

This course familiarizes the learners with the basic concepts of PHP, CodeIgniter framework and enables them to design MVC framework based web applications.

Course Outcomes (CO)

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

CO1[K1]: state the basic concepts and features of PHP
CO2[K2]: explain the usage of PHP functions and form elements
CO3[K3]: utilize the concepts of regular expressions, debugging and errors
CO4[K4]: classify the implementation techniques of CodeIgniter framework
CO5[K4]: examine the techniques for creating an optimized web page with database interaction

CO-PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	3	2	-	2	-	1	-
CO2[K2]	3	2	1	2	-	1	-
CO3[K3]	2	3	1	2	1	2	-
CO4[K4]	2	3	1	1	1	-	2
CO5[K4]	3	1	2	1	2	1	2
Weightage of the course	13	11	05	08	04	05	04
Weighted Percentage of Course contribution to POs	**2.61**	**2.61**	**3.36**	**2.12**	**2.9**	**2.25**	**2.26**

Based on the level of contribution ('3'-High, '2'-Medium, '1'- Low '-'No Correlation)

UNIT I **(15 hrs)**

PHP and HTML: Getting Started – Writing PHP –Naming Files – Comments – The Semicolon – Delivering Text as Output – White Spaces – Running the PHP Script. **The Basics of PHP:** Data Types – Variables – Constants –

Here Documents – Operators – Arrays – Conditional Statements – Iterations.

UNIT II **(15 hrs)**

Functions: User Defined Functions – Built-in-Functions – PHP Server Variables – Working with Date and Time – Performing Mathematical Operations – Working with String Functions. **Working with Forms:** Form Elements – Adding Elements to Form – Uploading Files to Web Server using PHP – Building a Challenge and Response Subsystem.

UNIT III **(15 hrs)**

Regular Expressions: Regular Expression Engine – Common Usage of Regular Expressions – Types of Regular Expressions – Regular Expression Functions – Symbols used in Regular Expressions – Using Regular Expression Function. **Debugging and Errors:** Good Programming Practices – Error Handling in PHP – Logging Errors – Ignoring Errors – Acting on Errors/Exceptions.

UNIT IV **(15 hrs)**

Introduction to CodeIgniter: Framework – System Requirement for CodeIgniter – Characteristics of CodeIgniter – Features of CodeIgniter – Installing CodeIgniter – CodeIgniter Folder Structure – Configuration Base URL – Helper File. **CodeIgniter MVC Framework:** Components of MVC Architecture – Controllers in CodeIgniter – Creating a Controller – Invoking a Controller.

UNIT V **(15 hrs)**

Remapping Method Calls – Passing Parameters to Controller Methods – Views in CodeIgniter – Models in CodeIgniter. **Database Management in CodeIgniter:** Database Configuration – Creating Database in phpMyAdmin – Connecting to a Database – Inserting a Row in Employee Table – Updating a Row in Employee Table – Deleting a Record of Employee Table – Displaying the Records of Employee Table.

TEXTBOOKS

1. Ivan Bayross and Sharanam Shah. *PHP 5.1 for Beginners*. Mumbai: Shroff Publishers & Distributors Pvt. Ltd, 2018. **(UNITS I,II & III)**
2. Dr. PoornimaG.Naik and Dr. Girish R. Naik. *Enhancing PHP Coding With CodeIgniter Hands-On Experience with CodeIgniter*. New Delhi: Educreation Publishing, 2019. **(UNITS IV & V)**

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1. Steven M. Schafer. *HTML, CSS, Javascript, Perl, Python & PHP (Web Standards)*. New Delhi: Wiley Dreamtech India (P) Ltd, 2005.
2. Matt Doyle. *Beginning PHP 5.3*. New Delhi: Wiley India Pvt. Ltd, 2010.
3. Thomas Myer. *Professional CodeIgniter.* Indianapolis: Willey Publishing Inc, 2008.

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1. https://www.pdfdrive.com/codeigniter-17-professional-development-d11397939.html
2. https://www.google.co.in/books/edition/Beginning_PHP_5_3/1TcK2bIJlZIC?hl=en&gbpv=1&printsec=frontcover
3. http://people.du.ac.in/~ssirpal/presentations/php-basics.pdf
4. https://www.pdfdrive.com/professional-codeigniter-wrox-professional-guides-d164697450.html
5. https://www.youtube.com/watch?v=oacJJrDb6ug&list=PLbH1Rwr_J5lUvuuYQerBwhw31TJgalvYA&index=3

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF INFORMATION TECHNOLOGY
UG Programme – B.Sc. Information Technology
SEMESTER – V
CORE COURSE – XI: PRACTICAL: OPERATING SYSTEM AND NETWORK
(21UITC5P)
(From 2021-2022 Batch onwards)

HOURS/WEEK: 5 **INT. MARKS : 50**
CREDITS : 4 **EXT. MARKS : 50**
DURATION : 75 hrs **MAX. MARKS: 100**

Preamble

This course introduces the learners to the basic shell commands and enables them to implement the concept of client/server.

Course Outcomes (CO)

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

CO1[K1]: state the basic concepts of shell programming.

CO2[K2]: explain the usage of simple directory operations and file commands

CO3[K3]: apply the different methods of UNIQ, SED and GREP commands

CO4[K4]: examine the different client server technologies involved in TCP and UDP sockets

C05[K6]: create a new chat environment using client server technology

CO-PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	3	2	-	2	-	1	-
CO2[K2]	3	2	-	2	-	2	-
CO3[K3]	2	3	1	2	-	1	1
CO4[K4]	2	3	2	2	1	1	1
CO5[K6]	3	1	2	2	1	1	1
Weightage of the course	13	11	05	10	02	06	03
Weighted percentage of Course contribution to POs	**2.61**	**2.61**	**3.36**	**2.65**	**1.45**	**2.7**	**1.69**

Based on the level of contribution ('3'-High, '2'-Medium, '1'- Low '-'No Correlation)

OS PROGRAMMING

1. To implement the shell script to ask your name, program name and enrollment number and print it on the screen.
2. To implement the shell script to find whether number given is even or odd.
3. To implement a shell script to find the largest among the 3 given numbers.
4. To implement a shell program to find factorial of given number.
5. To implement a shell program to find the sum of all the digits in a given 5 digit number.
6. To implement a shell script to find whether a given word is palindrome or not.
7. To implement a shell program to add, subtract and multiply the 2 given numbers passed as command line arguments.
8. To implement a shell program to count number of words, characters, white spaces and special symbols in a given text.
9. To implement the shell script to display the basic directory operation.
10. To implement the shell script to display the basic file commands.
11. To implement a shell script to display the file interactive commands.
12. To implement a shell script to generate student mark list.
13. To implement a shell script to perform text operation using UNIQ & SED.
14. To implement a shell script to manipulate text using GREP command.

NETWORK PROGRAMMING

15. To develop a simple program to create a TCP client and server sockets to send and receive data.
16. To develop a simple program to create a UDP client and server sockets to send and receive data.
17. To develop a TCP server that can perform arithmetic operations for a TCP client.
18. To create a UDP server that can find whether a number sent by a UDP client is positive or negative.
19. To develop a TCP server that can perform case conversion for a TCP client.
20. To create a UDP server that can perform factorial calculation for a UDP client.
21. To create a TCP server to encrypt the messages from a TCP client.

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF INFORMATION TECHNOLOGY
UG Programme – B.Sc. Information Technology
SEMESTER – V
CORE COURSE – XII: PRACTICAL: MOBILE APPLICATION DEVELOPMENT
(21UITC5Q)
(From 2021-2022 Batch onwards)

HOURS/WEEK: 5 **INT. MARKS : 50**
CREDITS : 4 **EXT. MARKS : 50**
DURATION : 75 hrs **MAX. MARKS: 100**

Preamble

This course enables the learners to develop Android Apps for Mobile Application Development.

Course Outcomes (CO)

On successful completion of the course, the learners will be able to
CO1[K2]: illustrate the basic components of android
CO2[K3]: apply the interactive tools to perform form actions
CO3[K4]: analyse the different methodologies to integrate the map
CO4[K4]: examine the various protocols to send group mails
CO5[K6]: design and create new professional mobile applications

CO-PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K2]	3	2	-	2	-	-	1
CO2[K3]	3	2	-	2	-	2	1
CO3[K4]	2	2	1	2	1	2	-
CO4[K4]	2	2	1	2	1	2	1
CO5[K6]	2	1	1	2	1	2	2
Weightage of the course	12	09	03	10	03	08	05
Weighted percentage of Course contribution to POs	**2.41**	**2.14**	**2.01**	**2.65**	**2.17**	**3.6**	**2.82**

Based on the level of contribution ('3'-High, '2'-Medium, '1'- Low '-'No Correlation)

1. To display Text with Different Foreground Color and Background Color.
2. To display the alert box
3. To display the picker
4. To implement a Buttons.
5. To perform a Spinner.

6. To implement a alarm manager.
7. To Create a Login Process.
8. To design a User Interface for Online Shopping.
9. To Read the form elements and Display it on The Screen.
10. To Send Message between Two Emulators.
11. To Interact With Database.
12. To use Google Maps for Locate Current Location.
13. To Send Mail in Groups through Gmail.
14. To convert entered text to speech
15. To display Floating Action Button
16. To animate the image with following
    i) zoom in-out ii) Rotation iii) Fade in – out.
17. To read phone book contacts and display the list.
18. To design a progress dialog.

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF INFORMATION TECHNOLOGY
UG Programme – B.Sc. Information Technology
SEMESTER – V
MAJOR ELECTIVE COURSE – I: WIRELESS NETWORKS (21UITO51)
(From 2021-2022 Batch onwards)

HOURS/WEEK: 4 **INT. MARKS : 40**
CREDITS : 3 **EXT. MARKS : 60**
DURATION : 60 hrs **MAX. MARKS: 100**

Preamble

This course introduces the learners to the concepts and techniques associated with Wireless communication systems

Course Outcomes (CO)

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

CO1[K1]: identify the basic concepts of wireless network
CO2[K2]: illustrate the different concepts of IP and mobile IP protocols
CO3[K3]: apply the usage of network protocols, topologies, ad hoc and sensor networks
CO4[K4]: analyze a wireless channel and evolve the system design specifications
C05[K4]: examine the 4G technologies and its protocols

CO–PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1 [K1]	3	2	–	2	1	-	1
CO2 [K2]	2	2	-	2	–	1	–
CO3 [K3]	2	2	-	2	1	1	1
CO4 [K4]	2	2	1	2	1	1	1
CO5 [K4]	2	2	2	2	1	1	1
Weightage of the course	11	10	03	10	04	04	04
Weighted percentage of Course contribution to POs	**2.21**	**2.38**	**2.01**	**2.65**	**2.9**	**1.8**	**2.26**

Based on the level of contribution ('3'-High, '2'-Medium, '1'-Low '-' No Correlation)

UNIT I (12 hrs)

Wireless LAN: Infrared vs Radio Transmission – Infrastructure and Ad–hoc network – IEEE802.11 – HIPER LAN – Bluetooth.

UNIT II **(12 hrs)**

Mobile Network Layer: Mobile IP – Dynamic Host Configuration Protocol – Mobile ad-hoc Networks.

UNIT III **(12 hrs)**

Mobile Transport Layer: Traditional TCP – Classical TCP Improvements – TCP Over 2.5/ 3G Wireless Networks – Performance Enhancing Proxies.

UNIT IV **(12 hrs)**

Wide – Area Wireless Networks (WANs) – GSM Evolution : Introduction – GSM Evolution for Data – Third-Generation (3G) Wireless Systems – UMTS Network Reference Architecture – Channel Structure in UMTS Terrestrial Radio Access Network – Spreading and Scrambling in UMTS – UMTS Terrestrial Radio Access Network Overview – UMTS Core Network Architecture – Adaptive Multi-Rate Codec for UMTS – UMTS Bearer Service – QoS Management – Quality of Service in UMTS.

UNIT V **(12 hrs)**

Fourth Generation Systems and New Wireless Technologies: Introduction – 4G Vision – 4G Features and Challenges – Applications of 4G – 4G Technologies.

TEXTBOOKS

1. Jochen Schiller. *Mobile Communications*. New Delhi: Pearson Education Publishing, 2003. **(UNITS I, II & III)**
2. Vijay K. Garg. *Wireless Communications and Networking.* Singapore: ElsevierInc, 2007. **(UNITS IV & V)**

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1. Erik Dahlman, Stefan Parkvall and Johan Skoldand PerBeming. *3G Evolution HSPA and LTE for Mobile Broadband.* Academic Press, 2008.
2. Anurag Kumar, D.Manjunath and Joy Kuri. *Wireless Networking.* New Delhi:Elsevier, 2011.
3. Simon Haykin, Michael Moher and David Koilpillai. *Modern Wireless Communications.* New Delhi:Pearson Education Publishing, 2013.

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2. https://www.ece.rutgers.edu/~marsic/books/WN/book–WN_marsic.pdf
3. https://n.stucor.in/semester/STUCOR_EC6802–AQ.pdf
4. http://home.ustc.edu.cn/~wfsun/lab/course/wireless/Steve%20Rackley%20–%20Wireless%20Networking%20Technology.pdf
5. https://textbookequity.org/Textbooks/wndw3–wireless%20networking_developing_world.pdf

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF INFORMATION TECHNOLOGY
UG Programme – B.Sc. Information Technology
SEMESTER – V
MAJOR ELECTIVE COURSE – I: COMPUTER GRAPHICS AND MULTIMEDIA
(21UITO52)
(From 2021-2022 Batch onwards)

HOURS/WEEK: 4 **INT.MARKS : 40**
CREDITS : 3 **EXT.MARKS : 60**
DURATION : 60 hrs **MAX.MARKS: 100**

Preamble

This course aims to introduce the students to the fundamental primitives, algorithms involved in computer graphics and to explore the components of multimedia.

Course Outcomes (CO)

On successful completion of the course, the learners will be able to
CO1[K1]: state the basic features of computer graphics
CO2[K2]: explain the various primitives involved in drawing shapes
CO3[K3]: apply the various techniques and properties of graphics primitives
CO4[K4]: examine the different media elements to present the information
CO5[K4]: classify the methods and devices used for signal transmission

CO-PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1 [K1]	3	2	–	2	1	-	1
CO2 [K2]	2	2	-	2	–	1	–
CO3 [K3]	2	2	-	2	1	1	1
CO4 [K4]	2	2	1	2	1	1	1
CO5 [K4]	2	2	2	2	1	1	1
Weightage of the course	11	10	03	10	04	04	04
Weighted percentage of Course contribution to POs	**2.21**	**2.38**	**2.01**	**2.65**	**2.9**	**1.8**	**2.26**

Based on the level of contribution ('3'-High, '2'-Medium, '1'-Low, '-' No Correlation)

UNIT I **(12hrs)**

Introduction to Computer Graphics: History and Evolution – Survey of Computer Graphics. **Graphics Hardware and Software:** Overview of Graphics Systems – GKS Programs.

UNIT II **(12hrs)**

Output Primitives: Points and Lines – Line Drawing Algorithms – Circle Generating Algorithm – Ellipse Generating Algorithm – Other Curves – Filled-Area Primitives – Character Generation. **Attributes of Output Primitives:** Line Attributes – Curve Attributes – Area-Fill Attributes – Character Attributes – Bundled Attributes.

UNIT III **(12hrs)**

Two-Dimensional Geometric Transformations: Basic Transformations – Matrix Representations – Composite Transformations – Other Transformations. **Two – Dimensional Viewing:** The Viewing Pipeline – Viewing Coordinate Reference Frame – Window-to-Viewport Coordinate Transformation – Clipping Operations – Point Clipping – Line Clipping – Polygon Clipping.

UNIT IV **(12hrs)**

Multimedia - An Overview: Introduction – Multimedia Presentation and Production –Characteristics of a Multimedia Presentation – Hardware and Software Requirements – Uses of Multimedia – Promotion of Multimedia Based Content. **Text:** Introduction – Types of Text – Unicode Standard – Font – Insertion of Text – Text Compression – File Formats. **Image:** Introduction – Image Types – Seeing Color – Color Models – Basic Steps for Image Processing – Scanner – Digital Camera – Interface Standards – Specification of Digital Images – Color Management System (CMS) – File Formats.

UNIT V **(12hrs)**

Audio: Introduction – Acoustics – Nature of Sound Waves – Fundamental Characteristics of Sound – Elements of Audio Systems – Microphone – Amplifier – Loudspeaker – Audio Mixer – Digital Audio – Musical Instrument Digital Interface (MIDI) – MIDI Messages – MIDI Connections – Sound Card– Audio File Format and CODECs. **Video:** Introduction – Analog Video Camera – Transmission of Video Signals – Video Signal Formats – Digital Video –Digital Video Standards – PC Video – Video File Formats and CODECs.

TEXTBOOKS

1. D. Evangeline and S. Anitha. *Computer Graphics and Multimedia Insights, Mathematical Models and Programming Paradigms*. Delhi: PHI Learning Private Limited, 2016. (**UNIT I)**
2. Donald Hearn and M. Pauline Baker. *Computer Graphics C Versions.* New Delhi: Pearson Education, 2012. **(UNITS II & III)**

3. Ranjan Parekh. *Principles of Multimedia.* New Delhi: Tata McGraw-Hill Education Private Limited, 2011. **(UNITS IV & V)**

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1. William M. Newman Robert F. Sproull. *Principles of Interactive Computer Graphics.* New Delhi: Tata McGraw-Hill, 2004.
2. Tay Vaughan. *Multimedia: Making it work.* New Delhi: Tata McGraw-Hill, 2001.
3. Ramesh Bangia. *Introduction to Multimedia.* Chennai: Laxmi Publications Pvt. Ltd, 2015.

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1. https://users.dimi.uniud.it/~antonio.dangelo/MMS/materials/Fundamentals_of_Multimedia.pdf
2. http://www.tutorialsspace.com/Computer-Graphics/CG-Books-Notes/Computer-Graphics-book.pdf
3. https://drive.google.com/file/d/1hoTn2R3md2RbzXugVjTNcCpllALDWvPA/view
4. https://nptel.ac.in/content/storage2/106/103/106103224/MP4/mod01lec01.mp4
5. https://nptel.ac.in/content/storage2/106/103/106103224/MP4/mod06lec21.mp4

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF INFORMATION TECHNOLOGY
UG Programme – B.Sc. Information Technology
SEMESTER – V
MAJOR ELECTIVE COURSE – I: CLOUD COMPUTING (21UITO53)
(From 2021-2022 Batch onwards)

HOURS/WEEK: 4 **INT. MARKS : 40**
CREDITS : 3 **EXT. MARKS : 60**
DURATION : 60 hrs **MAX. MARKS: 100**

Preamble

This course introduces the learners to the cloud computing techniques and architecture and the concept of various virtualizations in cloud computing.

Course Outcomes (CO)

On successful completion of the course, the learners will be able to
CO1[K1]: state the basic concepts of cloud computing and its architecture
CO2[K2]: explain the applications of cloud and different types of cloud services
CO3[K3]: apply the methods of the different cloud based storage
CO4[K4]: analyze the cloud virtualization and cloud security concepts
CO5[K4]: compare the different types of web services in the real time world

CO-PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1 [K1]	3	2	–	2	1	-	1
CO2 [K2]	2	2	-	2	–	1	–
CO3 [K3]	2	2	-	2	1	1	1
CO4 [K4]	2	2	1	2	1	1	1
CO5 [K4]	2	2	2	2	1	1	1
Weightage of the course	11	10	03	10	04	04	04
Weighted percentage of Course contribution to POs	**2.21**	**2.38**	**2.01**	**2.65**	**2.9**	**1.8**	**2.26**

Based on the level of contribution ('3'-High, '2'-Medium, '1'-Low, '-' No Correlation)

UNIT I **(12 hrs)**

Defining Cloud Computing: Defining Cloud Computing – Cloud Types – Examining the Characteristics of Cloud Computing – Assessing the Role of Open Standards. **Assesing the Value Proposition:** Measuring the Cloud Values. **Understanding Cloud Architecture:** Exploring the Cloud Computing Stack –

Composability – Infrastructure – Platforms – Virtual Appliances – Communication Protocols - Applications.

UNIT II **(12 hrs)**

Understanding Services and Applications by Type: Defining Infrastructure as a Service (IaaS) – Defining Platform as a Service (PaaS) – Defining Software as a Service (SaaS) – Defining Identity as a Service (IDaaS) – Defining Compilance as a Service (CaaS). **Understanding Abstraction and Virtualization:** Using Virtualization Technologies – Load Balancing and Virtualization – Understanding Hypervisors.

UNIT III **(12 hrs)**

Understanding Machine Imaging – Porting Applications. **Exploring Platform as a Service:** Defining Services – Using PaaS Application Frameworks. **Using Google Web Services:** Exploring Google Applications – Surveying the Google Applications Portfolio – Exploring the Google Toolkit – Working with the Google App Engine.

UNIT IV **(12 hrs)**

Using Amazon Web-Services: Understanding Amazon Web Services – Amazon Web Service Components and Services – Working with the Elastic Compute Cloud (EC2)– Working with Amazon Storage Systems – Understanding Amazon Database Services. **Using Microsoft Cloud Services:** Exploring Microsoft Cloud Services – Defining the Windows Azure Platform – Using Windows Live.

UNIT V **(12 hrs)**

Understanding Cloud Security: Securing the Cloud – Securing the Data – Moving Applications to the Cloud – Applications in the Clouds. **Working with Cloud-Based Storage**: Cloud Storage Definition – Provisioning Cloud Storage – Exploring Cloud Backup Solutions – Cloud Storage Interoperability.

TEXTBOOK

1. Barrie Sosinsky. *Cloud Computing Bible.* Indianapolis: Wiley India Pvt. Ltd, 2013.

REFERENCES

Books

1. Roger Jennings, *Cloud Computing with Windows Azure Platform*. Indianapolis: Wiley India Pvt Ltd, 2009.
2. Miller Michael, *Cloud Computing, Web-Based Applications That Change The Way You Work And Collaborate Online*: Que Publishing, 2008.
3. M.Shyamala Devi. *Grid and Cloud Computing.* Chennai: Sahara Publications.

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1. https://arpitapatel.files.wordpress.com/2014/10/cloud-computing-bible1.pdf
2. https://docshare01.docshare.tips/files/23806/238065192.pdf
3. https://index-of.co.uk/Cloud-Computing Books/Essentials%20of%20cloud%20computing%20(2015).pdf
4. https://nptel.ac.in/content/storage2/106/105/106105167/MP4/mod01lec04.mp4
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SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF INFORMATION TECHNOLOGY
UG Programme – B.Sc. Information Technology
SEMESTER – V
MAJOR ELECTIVE COURSE – II: COMPUTER NETWORKS (21UITO54)
(From 2021-2022 Batch onwards)

HOURS/WEEK: 4 **INT. MARKS : 40**
CREDITS : 3 **EXT. MARKS : 60**
DURATION : 60 hrs **MAX. MARKS: 100**

Preamble

This course introduces the learners to the basic concepts of networks and the techniques involved in data communication and transmission of the networks.

Course Outcomes (CO)

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

CO1[K1]: identify the basic components of the network

CO2[K2]: illustrate the usage of switching and data signal transmissions

CO3[K3]: apply the techniques of data link protocol to detect and handle the error

CO4[K4]: examine the deficiency of various network layer protocols and routing algorithms

C05[K4]: classify the methodologies involved in internet transport protocol and network security

CO–PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1 [K1]	3	2	-	2	-	-	1
CO2 [K2]	2	3	–	2	-	1	–
CO3 [K3]	3	2	-	2	-	1	-
CO4 [K4]	2	3	2	2	1	2	1
CO5 [K4]	3	2	2	2	1	2	1
Weightage of the course	13	12	04	10	02	06	03
Weighted percentage of Course contribution to POs	**2.61**	**2.85**	**2.68**	**2.65**	**1.45**	**2.7**	**1.69**

Based on the level of contribution ('3'–High,'2'–Medium,'1'–Low '–' No Correlation)

UNIT I **(12 hrs)**

Introduction: Uses of Computer Networks – Network Hardware – Network Software – Reference Models – Example Networks. **The Physical Layer:** Theoretical Basis for Data Communication – Guided Transmission Media – Wireless Transmission.

UNIT II **(12 hrs)**

Data Link Layer: Data Link Layer Design Issues – Error Detection & Error Correction – Elementary Data Link Protocols – Sliding Window Protocols. **The Medium Access Control Sub Layer:** The Channel Allocation Problem –Multiple Access Protocols – Aloha – Carrier Sense Multiple Access Protocols – Collision Free Protocols.

UNIT III **(12 hrs)**

The Network Layer: Network Layer Design Issues – Routing Algorithms: Shortest Path Routing – Flooding – Distance Vector Routing – Link State Routing – The Network Layer in the Internet – The IP Protocol – IP Addresses – Internet Control Protocols – OSPF the Interior Gateway Routing Protocol – BGP the Exterior Gateway Routing Protocol – Internet Multicasting – Mobile IP – IPv6.

UNIT IV **(12 hrs)**

Transport Layer: Transport Service – Elements of Transport Protocols – The Internet Transport Protocols UDP – The Internet Transport Protocols TCP.

UNIT V **(12 hrs)**

Application Layer: DNS – The Domain Name System – Electronic Mail – The World Wide Web. **Network Security:** Cryptography – Symmetric Key Algorithms – DES-The Data Encryption Standard – Public Key Algorithms – RSA – Digital Signatures.

TEXTBOOK

1. Andrew S. Tananbaum. *Computer Networks.* New Delhi: Pearson Prentice Hall of India Publishing, 2005.

REFERENCES

Books

1. Behrouz A. Forouzan. *Data Communications and Networking*. New Delhi: Prentice Hall of India Publishing, 2001.
2. F. Halsall. *Data Communications, Computer Networks and Open Systems.* New Delhi: Pearson Indian Education Private Limited, 2008.
3. D. Bertsekas and R. Gallagher. *Data Networks*. New Delhi: Prentice Hall of India Publishing, 2008.

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2. http://www.tcpipguide.com/free/t_OSIReferenceModelLayers.htm
3. http://iit.qau.edu.pk/books/Data%20Communications%20and%20Networking%20By%20Behrouz%20A.Forouzan.pdf
4. http://www.networkdictionary.com/protocols/osimodel.php
5. https://www.computernetworkingnotes.com/networking–tutorials/

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF INFORMATION TECHNOLOGY
UG Programme – B.Sc. Information Technology
SEMESTER – V
MAJOR ELECTIVE COURSE – II: NEURAL NETWORKS (21UITO55)
(From 2021-2022 Batch onwards)

HOURS/WEEK: 4 **INT.MARKS : 40**
CREDITS : 3 **EXT.MARKS : 60**
DURATION : 60 hrs **MAX.MARKS: 100**

Preamble

This course familiarizes the learners with the methodology to apply neural network in scientific problems and explore the operations of the scientific networks.

Course Outcomes (CO)

On Successful completion of the course, the learners will be able to

CO1[K1]: state the basic terminology of neurons
CO2[K2]: explain the techniques involved in simulating the signal
CO3[K3]: apply the neural network models to handle uncertainty of data
CO4[K4]: examine the CPN methods for image classification and data processing
CO5[K4]: classify the various methodologies of SOM

CO-PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	3	2	-	2	-	-	1
CO2[K2]	2	3	–	2	-	1	–
CO3[K3]	3	2	-	2	-	1	-
CO4[K4]	2	3	2	2	1	2	1
CO5[K4]	3	2	2	2	1	2	1
Weightage of the course	13	12	04	10	02	06	03
Weighted percentage of Course contribution to POs	2.61	2.85	2.68	2.65	1.45	2.7	1.69

Based on the level of contribution ('3'-High, '2'-Medium, '1'-Low, '-' No Correlation)

UNIT I **(12 hrs)**

Introduction to ANS Technology: Elementary Neurophysiology – From Neurons to ANS – ANS Simulation.

UNIT II **(12 hrs)**

Adaline and Madaline: Review of Signal Processing – Adaline and the Adaptive Linear Combiner – Applications of Adaptive Signal Processing – The Madaline – Simulating the Adaline.

UNIT III **(12 hrs)**

Backpropagation: The Backpropagation Network – The Generalized Delta Rule – Practical Considerations – BPN Applications – The Backpropagation Simulator. **The BAM and the Hopfield Memory:** Associate Memory Definitions – The BAM – The Hopfield Memory – Simulating the BAM.

UNIT IV **(12 hrs)**

The Counter Propagation Network: CPN Building Blocks – CPN Data Processing – An Image Classification Example – The CPN Simulator.

UNIT V **(12 hrs)**

Self-Organizing Maps: SOM Data Processing – Applications of Self Organizing Maps – Simulating the SOM.

TEXTBOOK

1. James A.Freeman and David M.Skapura. *Neural Networks Algorithms, Applications and Programming Techniques*. New Delhi: Pearson Education, 2008.

REFERENCES

Books

1. Limin Fu. *Neural Networks in Computer Intelligence. New Delhi:* Tata McGraw Hill Education Private Limited, 2003.
2. N.K. Bose and P.Liang. *Neural Network Fundamentals with Graphs, Algorithms and Applications. New Delhi:* Tata McGraw Hill Education Private Limited, 2003.
3. S N Sivanandam, S Sumathi and S N Deepa. *Introduction to Neural Networks using MATLAB 6.0.* New Delhi: Tata McGraw Hill Education Private Limited, 2011.

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1. https://cdn.preterhuman.net/texts/science and technology/artificial intelligence/Neural%20Networks%20Algorithms,%20Applications,and%20Programming%20Techniques%20-%20James%20A.%20Freeman.pdf
2. https://blog.oureducation.in/adaline-madaline/
3. https://nptel.ac.in/content/storage2/108/108/108108148/MP4/mod01lec02.mp4
4. https://www.cs.bham.ac.uk/~jxb/NN/l16.pdf
5. https://youtu.be/xbYgKoG4x2g

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF INFORMATION TECHNOLOGY
UG Programme – B.Sc. Information Technology
SEMESTER – V
MAJOR ELECTIVE COURSE – II: ETHICAL HACKING (21UITO56)
(From 2021-2022 Batch onwards)

HOURS/WEEK: 4 **INT.MARKS : 40**
CREDITS : 3 **EXT.MARKS : 60**
DURATIONS : 60 hrs **MAX.MARKS: 100**

Preamble

This course introduces the learners to various tools, techniques in ethical hacking, security and explore the ethics about hacking and vulnerability.

Course Outcomes (CO)

On Successful completion of the course, the learners will be able to
CO1[K1]: state the basic terminology of hacking and Linux environment
CO2[K2]: explain the different methodologies in gathering information
CO3[K3]: utilize the various techniques for prevention of vulnerability
CO4[K4]: examine the exploitation methods involved in network and documents
CO5[K4]: classify the various attacks involved in web application

CO-PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	3	2	-	2	-	-	1
CO2[K2]	2	3	–	2	-	1	–
CO3[K3]	3	2	-	2	-	1	-
CO4[K4]	2	3	2	2	1	2	1
CO5[K4]	3	2	2	2	1	2	1
Weightage of the course	13	12	04	10	02	06	03
Weighted percentage of Course contribution to POs	**2.61**	**2.85**	**2.68**	**2.65**	**1.45**	**2.7**	**1.69**

Based on the level of contribution ('3'-High, '2'-Medium, '1'-Low, '-' No Correlation)

UNIT I **(12 hrs)**

Introduction to Hacking: Important Terminology – Categories of Penetration Test – Writing Reports – Structure of a Penetration Testing Report – Vulnerability Assessment Summary – Risk Assessment – Methodology. **Linux Basics:** Major Linux Operating Systems – File Structure Inside of Linux –Linux

Scheduler (Cron Job) – Users Inside of Linux –Common Application of Linux – What is BackTrack? –Changing the Default Screen Resolution – Text Editors inside BackTrack – Getting to Know your Network – Services – Other Online Resources.

UNIT II **(12 hrs)**

Information Gathering Techniques: Active Information Gathering – Passive Information Gathering – Sources of Information Gathering – Copying Websites Locally – Yougetsignal.com – NeoTrace – Cheops-ng – Intercepting a Response – WhatWeb – Netcraft–Some Basic Parameters – Example – TIP Regarding File Type – Hackersforcharity.org/ghdb – Xcode Exploit Scanner – Interacting with DNS Server – Nslookup – DIG – Zone Transfer with Host Command – Automating Zone Transfers – What is DNS Cache Snooping? – Attack Scenario – Automating DNS Cache Snooping Attacks – SMTP Enumeration – Intelligence Gathering using Shodan.

UNIT III **(12 hrs)**

Target Enumeration and Port Scanning Techniques: Host Discovery – Scanning for Open Ports and Services – Types of Port Scanning – Understanding the TCP Three-Way Handshake – Null, FIN and XMAS Scans – UDP Port Scan – IDLE Scan –TCP FTP Bounce Scan – OS Fingerprinting – POF – Output – Advanced Firewall / IDS Evading Techniques – Decoys – ZENMAP – Vulnerability Assessment – Network Sniffing**.**

UNIT IV **(12 hrs)**

Client Side Exploitation: Client Side Exploitation Methods –Introduction – PDF Launch Action – Creating a PDF Document with a Launch Action – Tools of the Trade – Origami Framework – Installing Origami Framework on BackTrack – Attacking with PDF – Scenario from Real World – Adobe PDF Embedded EXE – Social Engineering Toolkit – Credential Harvester Attack – Tab nabbing Attack – Other Attack Vectors – Browser Exploitation – Attacking over the Internet – Using Windows Box as Router (Port Forwarding) – VPS / Dedicated Server – How Evilgrade Works – Prerequisites – Teensy USB.

UNIT V **(12 hrs)**

Windows Exploit Development Basics: Prerequisites – What is a Buffer Overflow? – Vulnerable Application – How to Find Buffer Overflow – Methodology – Getting the Software Up and Running – Causing the Application to Crash – Skeleton Exploit – Figuring Out Bad Characters with Mona – Generating Metasploit Module – Porting to Metasploit.**Web Hacking:** Attacking the Authentication – Brute Force and Dictionary Attacks – Types of Authentication – Etsy.com Password Reset Vulnerability – Brute Force Attack – Authentication Bypass with Insecure Cookie Handling – Requirements for This Attack – How the Attack Works – Testing for SQL Injection – Guessing Table Names –Reading Files

– Writing Files – Vulnerable Applications –Testing for Time - Based SQL Injection.

TEXTBOOK

1. Rafay Baloch. *Ethical Hacking and Penetration Testing Guide*. New York: CRC Press Taylor & Francis Group, LLC, 2020.

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1. Kevin Beaver. *Hacking for Dummies.* New Jersey: John Wiley & Sons, Inc, 2016.
2. Davidoff S, Ham J. *Network Forensics Tracking Hackers through Cyberspace.* New York: Prentice Hall, 2012.
3. McClure, Scambray J, Kurtz G. *Hacking Exposed.* New Delhi: Tata McGraw-Hill Education, 2009.

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2. https://www.pdfdrive.com/hacking-for-dummies-d34336379.html
3. https://nptel.ac.in/content/storage2/106/105/106105217/MP4/mod05lec23.mp4
4. https://nptel.ac.in/content/storage2/106/105/106105217/MP4/mod01lec01.mp4
5. https://nptel.ac.in/content/storage2/106/105/106105217/MP4/mod05lec21.mp4

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF INFORMATION TECHNOLOGY
UG Programme – B.Sc. Information Technology
SEMESTER – V
SKILL ENHANCEMENT COURSE – V: PRACTICAL: OPEN SOURCE TECHNOLOGY (21UITS5P)
(From 2021-2022 Batch onwards)

HOURS/WEEK: 2 **INT. MARKS : 50**
CREDIT : 1 **EXT. MARKS : 50**
DURATION : 30 hrs **MAX. MARKS: 100**

Preamble

This course enables the learners to develop web based applications by using the concept of MVC framework.

Course Outcomes (CO)

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

CO1[K2]: demonstrate the basic HTML tags by embedding with PHP

CO2[K3]: apply the concepts of array to organize the items and to performstring operations using string functions

CO3[K3]: utilize the basic form libraries of CodeIgniter

CO4[K6]: construct a secure database application with PHP and MySQL

CO5[K6]: design and create a secure web application using CodeIgniter libraries

CO-PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K2]	3	2	-	1	-	1	-
CO2[K3]	3	2	-	2	-	-	1
CO3[K3]	3	2	-	2	-	1	1
CO4[K6]	1	1	1	2	1	1	1
CO5[K6]	1	1	1	2	1	1	1
Weightage of the course	11	08	02	09	02	04	04
Weighted percentage of Course contribution to POs	**2.21**	**1.9**	**1.34**	**2.38**	**1.45**	**1.8**	**2.26**

Based on the level of contribution ('3'-High, '2'-Medium, '1'-Low, '-' No Correlation)

PHP

1. Create a simple HTML form to accept the form input and display it using echo statement.
2. To calculate the difference between two dates using date function.
3. To implement the PHP string functions.

4. To insert a new item in an array at any position.
5. To store and retrieve form details using MySQL.
6. To create a login page using session in PHP.
7. To export the student mark statement as PDF in PHP.

CODEIGNITER

8. To create a login form using CodeIgniter.
9. To upload image in CodeIgniter.
10. To import CSV data into database in CodeIgniter.
11. To validate form using CodeIgniter form validation libraries.

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF INFORMATION TECHNOLOGY
UG Programme – B.Sc. Information Technology
SEMESTER – V
INTERNSHIP (21UITJ51)
(From 2021-2022 Batch onwards)

CREDIT : 1 **INT. MARKS : 50**
DURATION : 25 days **EXT. MARKS : 50**
MAX. MARKS: 100

Preamble:

This course aims to explore the field experience and practical implementation skill of the students by providing the opportunity to work in relevant industry.

Course Outcomes (CO)

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

CO1[K2]: demonstrate the project development tools used in IT industry

CO2[K3]: apply the acquired technical skill to create professional applications

CO3[K3]: utilize both software and hardware required for each applications

CO4[K4]: classify the development cycles involved in developing a software

CO5[K6]: design and create the real time software related to IT industry

CO-PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K2]	3	2	-	1	1	1	2
CO2[K3]	2	3	-	1	-	1	2
CO3[K3]	2	2	-	2	-	1	1
CO4[K4]	-	2	1	-	-	1	1
CO5[K6]	1	3	3	3	-	1	2
Weightage of the course	08	12	04	07	01	05	08
Weighted percentage of Course contribution to Pos	**1.61**	**2.85**	**2.68**	**1.85**	**0.72**	**2.25**	**4.52**

Based on the level of contribution ('3'-High, '2'-Medium, '1'-Low '-' No Correlation)

Guidelines

1. Each Student has to undergo minimum 25 days institutional/industry based training during the fourth semester summer vacation.
2. Internships could be undertaken in different organizations, industries and agencies approved by the department.
3. Students should keep a detailed record of activities performed and hrs spent in training and report the same to the Faculty Coordinator every week.
4. The Internship report should be of minimum 20 pages.
5. Attendance certificate from the organization has to be submitted to the HOD.
6. Two copies of the Internship report should be submitted.
7. The Internship carries 100 marks out of which 50 marks for Internal Assessment and 50 marks for External Examination.
8. The student has to appear for Viva-voce.
9. The viva voce board shall consist of the Head of the Department and the Internal Examiner

The following rubrics will be taken into account for the evaluation of the Training Programme:

Internal Assessment (50 Marks)	**External Examination(50 Marks)**
Training Report & Review : 40 Marks	Training Report : 20 Marks
Daily Log Report/Attendance : 05 Marks	Viva Voce : 30 Marks
PPT Presentation : 05 Marks	

Internship report must contain the following details:

- Title Page
- College Certificate Page
- Internship Certificate provided by the internship institution
- Declaration Page
- Acknowledgement
- Company Profile
- Organizational structure of the concern
- Weekly work plan
- List of figures, List of Tables
- Index
- Chapters

List of Chapters

1. Introduction
2. Nature of work
3. Role in the organization
4. Questionnaires and Observations about work
5. Operating Environment
6. Detailed Description of Technology used

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF INFORMATION TECHNOLOGY
UG Programme – B.Sc. Information Technology
SEMESTER – VI
CORE COURSE – XIII: SOFTWARE ENGINEERING (21UITC61)
(From 2021-2022 Batch onwards)

HOURS/WEEK: 5 **INT. MARKS : 40**
CREDITS : 5 **EXT. MARKS : 60**
DURATION : 75 hrs **MAX. MARKS: 100**

Preamble

This course aims to introduce the students to creating, analysing, designing software applications based on various software development life cycle and to explore the techniques involved in testing a software.

Course Outcomes (CO)

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

CO1[K1]: define the appropriate process model to develop a software
CO2[K2]: explain the principles involved in gathering and validating software requirements and cost factors
CO3[K3]: utilize the various software design models
CO4[K4]: examine and compare the efficiency of different methods in testing
CO5[K4]: simplify the methods involved in managing resources and software maintenance

CO-PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	3	2	-	2	-	-	1
CO2[K2]	3	2	-	2	1	-	1
CO3[K3]	3	3	1	2	-	2	-
CO4[K4]	2	1	1	2	1	2	2
CO5[K4]	2	1	1	2	2	2	1
Weightage of the course	13	09	03	10	04	06	05
Weighted percentage of Course contribution to POs	**2.61**	**2.14**	**2.01**	**2.65**	**2.9**	**2.7**	**2.82**

Based on the level of contribution ('3'-High, '2'-Medium, '1'-Low '-' No Correlation)

UNIT I **(15 hrs)**

Introduction to Software Engineering: Some definitions – Some Size Factors – Quality and Productivity Factors – Managerial Issues – Overview of the Text. **Planning a Software Project:** Defining the Problem – Developing a Solution Strategy – Planning the Development Process – Planning an Organizational Structure – Other Planning Activities.

UNIT II **(15 hrs)**

Software Cost Estimation: Introduction – Software Cost Factors – Software Cost Estimation Techniques – Staffing-Level Estimation – Estimating Software Maintenance Costs. **Software Requirements Definition:** Introduction – The Software Requirements Specification – Formal Specification Techniques – Languages and Processors for Requirements Specification.

UNIT III **(15 hrs)**

Software Design: Introduction – Fundamental Design Concepts – Modules and Modularization Criteria – Design Notations – Design Techniques – Detailed Design Considerations – Real time and Distributed System Design – Test Plans – Milestones, Walkthroughs and Inspections – Design Guidelines.

UNIT IV **(15 hrs)**

Verification and Validation Techniques: Introduction – Quality Assurance – Walkthroughs and Inspections – Static Analysis – Symbolic Execution – Unit Testing and Debugging – System Testing – Formal Verification. **Software Maintenance:** Introduction – Enhancing Maintainability during Development – Managerial Aspects of Software Maintenance – Configuration Management – Source-Code Metrics – Other Maintenance Tools and Techniques.

UNIT V **(15 hrs)**

Quality Engineering for Software Quality Assurance: Quality – ISO 9001 Standard – Software Quality and Assurance – Testing Techniques for SQA – Test Case Design – Software Testing Strategies. **Software Engineering Tools:** Software Engineering Tools – Introduction – Analysis Tools – Modeling for Representation – Requirements Engineering (RE) – Work Breakdown Structure (WBS) – Prototyping – CASE, I-CASE Tools.

TEXTBOOKS

1. Richard E. Fairley, *Software Engineering Concepts*. New Delhi: Tata McGraw Hill Edition, 2004. **(UNITS I, II, III & IV)**
2. Waman S Jawadekar. *Software Engineering Principles and Practice*. New Delhi: Tata McGraw Hill Publishing Company Limited, 2006. **(UNIT V)**

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1. Roger S. Pressman. *Software Engineering: A practitioner's approach*. New Delhi: McGraw Hill Higher Education, 2005.
2. Ali Behforooz and Frederick J. Hudson. *Software Engineering fundamentals.* Chennai: Oxford University Press, 2003.
3. Eric J. Braude and Michael E. Bernstein. *Software Engineering Modern Approach*. USA: Wiley Publishing, 2011.

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3. https://www.vssut.ac.in/lecture_notes/lecture1428551142.pdf
4. http://indexof.co.uk/Engineering/Introduction%20to%20Software%20Engineering.pdf
5. https://seu1.org/files/level4/IT-242/SE%20Book.pdf

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF INFORMATION TECHNOLOGY
UG Programme – B.Sc. Information Technology
SEMESTER – VI
CORE COURSE – XIV: PROGRAMMING IN PYTHON (21UITC62)
(From 2021-2022 Batch onwards)

HOURS/WEEK: 5 **INT. MARKS : 40**
CREDITS : 5 **EXT. MARKS : 60**
DURATION : 75 hrs **MAX. MARKS: 100**

Preamble

This course aims to introduce the learners to the basic concepts, features of Python programming and various techniques in integrating database.

Course Outcomes (CO)

On Successful completion of the course, the learners will be able to
CO1[K1]: describe the basic features of Python programming
CO2[K2]: explain the concept of modules, packages and OOPs
CO3[K3]: apply the concepts of data types, control structures and functions
CO4[K4]: classify the different methodologies of strings and data structures
CO5[K4]: examine the usage of file handling, debugging, testing and profiling

CO-PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	3	2	-	2	-	1	-
CO2[K2]	3	2	1	2	-	1	-
CO3[K3]	2	3	1	2	1	2	-
CO4[K4]	2	3	1	1	1	-	2
CO5[K4]	3	1	2	1	2	1	2
Weightage of the course	13	11	05	08	04	05	04
Weighted Percentage of Course contribution to POs	**2.61**	**2.61**	**3.36**	**2.12**	**2.9**	**2.25**	**2.26**

Based on the level of contribution ('3'-High, '2'-Medium, '1'-Low, '-' No Correlation)

UNIT I **(15 hrs)**

Basics of Python Programming: Features of Python – History of Python – The Future of Python – Writing and Executing First Python Program – Literal Constants – Variables and Identifiers – Data Types – Input Operation – Comments – Reserved Words – Indentation – Operators and Expressions –

Expressions in Python – Operations on Strings – Other Data Types – Type Conversion. **Decision Control Statements:** Introduction to Decision Control Statements – Selection / Conditional Branching Statements.

UNIT II **(15 hrs)**

Basic Loop Structures / Iterative Statements – The break Statement – The continue Statement. **Functions and Modules:** Introduction – Function Declaration and Definition – Function Call – Variable Scope and Lifetime – The return Statement – More on Defining Functions – Lambda Functions or Anonymous Functions – Documentation Strings – Good Programming Practices – Recursive Functions – Modules.

UNIT III **(15 hrs)**

Packages in Python – Standard Library modules – Global(), Locals(), and Reload() – Function Redefinition. **Python Strings Revisited:** Introduction – Concatenating, Appending and Multiplying Strings – Strings are Immutable – String Formatting Operator – Built-in String Methods and Functions – Slice Operation – ord() and chr() Functions – in and not in operators – Comparing Strings – Iterating String – The String Module – Regular Expressions – Metacharacters in Regular Expression.

UNIT IV **(15 hrs)**

File Handling: Introduction – File Path – Types of Files – Opening and Closing Files – Reading and Writing Files. **Data Structures:** Functional Programming – Tuple – Sets. **Inheritance:** Introduction – Inheriting Classes in Python – Types of Inheritance – Composition or Containership or Complex Objects.

UNIT V **(15 hrs)**

Abstract Classes and Interfaces – Metaclass**. Operator Overloading:** Introduction – Implementing Operator Overloading – Reverse Adding – Overriding __getitem__() and _setitem__() Methods – Overriding the in Operator – Overloading Miscellaneous Functions – Overriding the __call__() Method. **Error and Exception Handling:** Introduction to Errors and Exception – Handling Exceptions – Multiple Except Blocks – Multiple Exception in a Single Block – Except Block Without Exception – The else Clause – Raising Exceptions – Instantiating Exceptions – Handling Exceptions in Invoked Functions – Built-in and User-defined Exceptions – The finally Block – Pre-defined Clean-up Action – Re-raising Exception – Assertion in Python.

TEXTBOOK

1. Reema Thareja. *Python Programming Using Problem Solving Approach.* India: Oxford University Press, 2017.

REFERENCES

Books

1. Timothy A. Budd. *Exploring Python.* New Delhi: TATA McGraw Hill Education (India) Private Limited, 2012.
2. Robert Sedgwick, Kevin Wayne and Robert Dondero. *Introduction to Python Programming – An Interdisciplinary Approach.* USA: Addison – Wesely, 2015.
3. Allen Downey. *Think Python – How to think like a Computer Scientist.* Sebastopol: O'Reilly Media Inc, 2015.

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2. https://static.realpython.com/python-basics-sample-chapters.pdf
3. https://scipy-lectures.org/intro/language/python_language.html
4. https://nptel.ac.in/content/storage/106/106/106106145/MP4/mod02lec06.mp4
5. https://nptel.ac.in/content/storage/106/106/106106145/MP4/mod02lec09.mp4

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF INFORMATION TECHNOLOGY
UG Programme – B.Sc. Information Technology
SEMESTER – VI
CORE COURSE – XV: IOT AND BIG DATA COMPUTING (21UITC63)
(From 2021-2022 Batch onwards)

HOURS/WEEK: 5 **INT. MARKS : 40**
CREDITS : 5 **EXT. MARKS : 60**
DURATION : 75 hrs **MAX. MARKS: 100**

Preamble

This course aims to introduce the students to basic concepts, features of big data, to explore the ways for classifying, train the data with suitable algorithm of machine learning and provide the ways to integrate the IOT sensors.

Course Outcomes (CO)

On Successful completion of the course, the learners should be able to
CO1[K1]: describe the different dimensions of digital data.
CO2[K2]: explain the characteristics of different patterns of data
CO3[K3]: apply the different classification techniques to organize the data
CO4[K4]: classify the different scenarios of HADOOP framework
CO5[K4]: examine the efficiency of algorithms involved in data clustering

CO-PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	3	2	-	1	-	-	1
CO2[K2]	3	2	-	1	-	-	-
CO3[K3]	3	2	2	1	1	1	1
CO4[K4]	3	2	2	2	1	2	1
CO5[K4]	2	3	2	2	1	2	1
Weightage of the course	14	11	06	07	03	05	04
Weighted Percentage of Course contribution to POs	**2.81**	**2.61**	**4.03**	**1.85**	**2.17**	**2.25**	**2.26**

Based on the level of contribution ('3'-High, '2'-Medium, '1'-Low, '-' No Correlation)

UNIT I **(15 hrs)**

Internet of Things an Overview: Internet of Things – IOT Conceptual Framework – IOT Architectural View – Technology behind IOT – Sources of IOT – M2M Communication – Examples of IOT. **Digital Principles for Connected**

Devices: Introduction – IOT / M2M Systems Layers and Designs Standardization – Communication Technologies. **Data Acquiring, Organising, Processing and Analytics:** Introduction – Data Acquiring and Storage – Organizing the Data – Transaction, Business Processes, Integration and Enterprise Systems.

UNIT II **(15 hrs)**

Sensors, Participatory Sensing, RFIDs, and Wireless Sensor Networks: Introduction – Sensor Technology – Participatory Sensing, Industrial IoT and Automotive IoT – Actuator – Sensor Data Communication Protocols – Radio Frequency Identification Technology – Wireless Sensor Networks Technology.

UNIT III **(15 hrs)**

Types of Digital Data: Classification of Digital Data. **Introduction to Big Data:** Characteristics of Data – Evolution of Big Data – Definition of Big Data – Challenges with Big Data – What is Big Data? – Other Characteristics of Data which are not Definitional Traits of Big Data – Why Big Data? – Are we Just an Information Consumer or Do we also Produce Information? – Traditional Business Intelligence (BI) versus Big Data – A Typical Data Warehouse Environment – A Typical Hadoop Environment – Big Data Analytics.

UNIT IV **(15 hrs)**

The Big Data Technology Landscape: NoSQL – Hadoop. **Introduction to Hadoop:** Introducing Hadoop – Why Hadoop? – Why not RDBMS – RDBMS versus Hadoop – Distributed Computing Challenges – History of Hadoop – Hadoop Overview – Use Case of Hadoop – Hadoop Distributors – HDFS (Hadoop Distributed File System) – Processing Data with Hadoop – Managing Resources and Applications with Hadoop YARN (Yet Another Resource Negotiator) – Interacting with Hadoop Ecosystem.

UNIT V **(15 hrs)**

Introduction to MAPREDUCE Programming: Introduction – Mapper – Reducer – Combiner – Partitioner – Searching – Sorting – Compression. **Introduction to Hive:** What is Hive? – Hive Architecture – Hive Data Types – Hive File Format – Hive Query Language (HQL) – RCFile Implementation – Serde – User-Defined Function (UDF).

TEXTBOOKS

1. Raj Kamal. *Internet of Things Architecture and Design Principles.* Chennai: McGraw Hill Education (India) Private Limited, 2017.**(UNITS I, II)**
2. Seema Acharya and Subhashini Chellappan. *Big Data and Analytics.* New Delhi: Wiley India Pvt. Ltd, 2019.**(UNITS III, IV & V)**

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1. Han Hu, Yonggang Wen, Tat-Seng, Chua and Xuelong Li. *Toward Scalable Systems for Bigdata.* New Delhi: Wiley India Pvt Ltd, 2015.
2. Seema Acharya and Subhashni Chellappan. *Big Data Analytics.* New Delhi: Wiley India Pvt Ltd, 2015.
3. Judith Hurwitz, Alan Nugent, Dr. Fern Halper and Marcia Kaufman. *Big Data for Dummies.* New Delhi: Wiley India Pvt Ltd, 2013.

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2. https://nptel.ac.in/content/storage2/106/104/106104189/MP4/mod01lec01.mp4
3. https://nptel.ac.in/content/storage2/106/104/106104189/MP4/mod01lec02.mp4
4. https://builtin.com/data-science
5. https://nptel.ac.in/content/storage2/106/104/106104189/MP4/mod02lec04.mp4

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF INFORMATION TECHNOLOGY
UG Programme – B.Sc. Information Technology
SEMESTER – VI
CORE COURSE – XVI: PRACTICAL: PYTHON PROGRAMMING (21UITC6P)
(From 2021-2022 Batch onwards)

HOURS/WEEK: 5 **INT. MARKS : 50**
CREDITS : 4 **EXT. MARKS : 50**
DURATION : 75 hrs **MAX. MARKS: 100**

Preamble

This course introduces the learners to the basic concepts, features of Python programming and develop web applications.

Course Outcomes (CO)

On Successful completion of the course, the learners will be able to

CO1[K2]: express the basic terminologies involved in Python

CO2[K2]: illustrate the usage of statements and expressions

CO3[K3]: utilize the concept of sequences, string and built-in-function

CO4[K4]: examine the different ways of debugging in python

CO5[K6]: create a simple application by integrating the concept of database

CO-PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K2]	3	2	-	1	-	1	-
CO2[K2]	3	2	-	1	-	1	-
CO3[K3]	3	3	1	2	1	1	-
CO4[K4]	3	3	1	2	1	1	1
CO5[K6]	2	2	2	2	2	2	1
Weightage of the course	14	12	04	08	04	06	02
Weighted Percentage of Course contribution to POs	**2.81**	**2.85**	**2.68**	**2.12**	**2.9**	**2.7**	**1.13**

Based on the level of contribution ('3'-High, '2'-Medium, '1'-Low, '-' No Correlation)

1. Create program for getting the system configuration.
2. To work with strings.
3. To work with lists.
4. To work with tuples.
5. To work with dictionary.

6. To work with conditional loops, if else and elif.
7. To implement conditional expressions – for, while, break, and continue.
8. To implement program on functions.
9. To work with detecting and handling exception.
10. To create modules in Python.
11. To work with built-in functions in Python.
12. To implement the file handling operations using Python.
13. To work with classes.
14. To construct program with OOPs concept.
15. To create and implement database creation.
16. To perform CSV operations in Python.
17. To implement the JSON methods in Python.
18. To shuffle a deck of card with OOPs in Python.

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF INFORMATION TECHNOLOGY
UG Programme – B.Sc. Information Technology
SEMESTER – VI
CORE COURSE – XVII: PROJECT (21UITJ61)
(From 2021-2022 Batch onwards)

HOURS/WEEK: 4 **INT. MARKS : 50**
CREDITS : 4 **EXT. MARKS : 50**
DURATION : 75 hrs **MAX. MARKS: 100**

Preamble

This Course provides an Opportunity to apply their acquired knowledge and skill sets in the field of Information Technology to design and develop simple and real time projects.

Course Outcomes (CO)

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

CO1[K1]: identify the problems with the help of programming concepts in current scenario
CO2[K2]: explain the working environment such as software applications. embedded systems and web services
CO3[K3]: apply the entire project design based on the requirements of the domain
CO4[K5]: justify and evaluating the various testing techniques to implement the project
CO5[K6]: develop skills in report writing through data collection, data analysis, data extraction and presentation

CO-PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	3	2	-	1	-	2	1
CO2[K2]	3	3	-	1	-	2	1
CO3[K3]	2	2	-	2	-	1	1
CO4[K5]	-	2	1	2	1	1	1
CO5[K6]	1	3	3	2	1	2	1
Weight age of the course	09	12	04	08	02	08	05
Weighted percentage of Course contribution to POs	**1.81**	**2.85**	**2.68**	**2.12**	**1.45**	**3.6**	**2.82**

Based on the level of contribution ('3'-High, '2'-Medium, '1'-Low '-' No Correlation)

Guidelines

1. Students will work individually or in groups with maximum 2 members on a semester-long project.
2. Depending on the interest of the students, project research areas will be chosen.
3. Students must meet the guide periodically.
4. The project carries 100 marks of which 50 marks for Internal Assessment and 50 marks for External Examination.
5. There will be two project review sessions.
6. A draft of the final project report should be submitted to the Project Guide for review atleast two weeks prior to the end of the semester.
7. The project report should be of minimum 40 pages (excluding bibliography & appendices)
8. Two copies of the final project report should be submitted.
9. The Head of the department and the Project Guide will evaluate the final Project Report.
10. The viva-voce board shall consist of the External Examiner, the Head of the Department and the Internal Examiner

The following rubrics will be taken into account for the evaluation of Project work and viva-voce:

Internal Assessment (50 Marks)		**External Examination (50 Marks)**	
Project Report & Review	: 40 Marks	Project Report	: 20 Marks
Powerpoint Presentation	: 5 Marks	Viva Voce	: 30 Marks
Demo/Performance	: 5 Marks		

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF INFORMATION TECHNOLOGY
UG Programme – B.Sc. Information Technology
SEMESTER – VI
MAJOR ELECTIVE COURSE – III: DATA MINING AND DATA WAREHOUSING
(21UITO61)
(From 2021-2022 Batch onwards)

HOURS/WEEK: 4 **INT. MARKS : 40**
CREDITS : 3 **EXT. MARKS : 60**
DURATION : 60 hrs **MAX. MARKS: 100**

Preamble

This course familiarizes the learners with the concept of algorithms, methods and mining tools.

Course Outcomes (CO)

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

CO1[K1]: describe the data warehouse concepts and various OLAP operations

CO2[K2]: interpret data mining problems and different types of data mining techniques

CO3[K3]: develop data mining algorithms to build analytical applications.

CO4[K4]: analyze large amount of data to extract patterns and to solve problems.

CO5[K4]: examine various mining techniques and the importance of the techniques

CO-PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1 [K1]	2	2	–	2	1	-	1
CO2 [K2]	2	2	-	2	–	1	–
CO3 [K3]	2	2	1	2	1	1	1
CO4 [K4]	3	2	1	2	1	1	1
CO5 [K4]	3	2	2	2	1	1	1
Weightage of the course	12	10	04	10	04	04	04
Weighted percentage of Course contribution to POs	**2.41**	**2.38**	**2.68**	**2.65**	**2.9**	**1.8**	**2.26**

Based on the level of contribution ('3'-High, '2'-Medium, '1'-Low, '-' No Correlation)

UNIT I **(12 hrs)**

Data Warehousing: Introduction – What is Data Warehouse? – Definition – Multidimensional Data Model – OLAP Operations – Warehouse Schema – Data Warehousing Architecture – Warehouse Server – Meta Data – OLAP Engine – Data Warehouse Backend Process.

UNIT II **(12 hrs)**

Data Mining: Introduction – What is Data Mining? – Data Mining Definitions – KDD vs Data Mining – DBMS vs. DM – Other Related Areas – DM Techniques – Other Mining Problems – Issues and Challenges in DM – DM Application Areas.

UNIT III **(12 hrs)**

Association Rules: Introduction – What is an Association Rule? – Methods to Discover Association Rules – A Priori Algorithm – Partition Algorithm – Pincer Search Algorithm – Dynamic Itemset Counting Algorithm – FP Tree Growth Algorithm.

UNIT IV **(12 hrs)**

Clustering Techniques: Introduction – Clustering Paradigms – Partitioning Algorithms – K-Medoid Algorithm – CLARA – CLARANS – Hierarchical Clustering – DBSCAN – Categorical Clustering Algorithms – STIRR. **Decision Trees:** Introduction – What is Decision Tree? – Tree Construction Principles.

UNIT V **(12 hrs)**

Web Mining: Introduction – Web Mining – Web Content Mining – Web Structure Mining – Web usage Mining – Text Mining – Unstructured Text – Episode Rule Discovery for Texts – Hierarchy of Categories – Text Clustering. **Temporal and Spatial Data Mining**: Spatial Mining – Spatial Mining Tasks – Spatial Clustering – Spatial Trends.

TEXTBOOK

1. Arun K Pujari. *Data Mining Techniques.*Hyderabad: Universities Press (India) Private Limited, 2009.

REFERENCES

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1. Jiawei Han, Micheline Kamber and Jian Pei. *Data Mining Concepts and Techniques*. Elsevier: Third Edition, 2002.
2. Alex Berson and Stephen J. Smith, *Data Warehousing, Data Mining & OLAP*. India: Tata McGraw Hill Edition, 2007.
3. B.S. Charulatha and Dr.S. Poonkuzhali. *Data Warehousing and Data Mining.* Chennai: Charulatha Publications, 2013.

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2. https://www.scribd.com/doc/238053853/Data-Mining-Techniques-Arun-K-Pujari
3. http://myweb.sabanciuniv.edu/rdehkharghani/files/2016/02/The-Morgan-Kaufmann-Series-in-Data-Management-Systems-Jiawei-Han-Micheline-Kamber-Jian-Pei-Data-Mining.-Concepts-and-Techniques-3rd-Edition-Morgan-Kaufmann-2011.pdf
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SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF INFORMATION TECHNOLOGY
UG Programme – B.Sc. Information Technology
SEMESTER – VI
MAJOR ELECTIVE COURSE – III: CRYPTOGRAPHY AND NETWORK SECURITY (21UITO62)
(From 2021-2022 Batch onwards)

HOURS/WEEK: 4 **INT. MARKS : 40**
CREDITS : 3 **EXT. MARKS : 60**
DURATION : 60 hrs **MAX. MARKS: 100**

Preamble

This course aims to introduce the learners to basic concepts of cryptography and to express the implementation techniques of algorithms to perform data security.

Course Outcomes (CO)

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

CO1[K1]: state the basic functionality of hash functions

CO2[K2]: explain the various methodologies involved in wireless security

CO3[K3]: apply different algorithms to implement encryption and decryption

CO4[K4]: examine the usage methodologies of block cipher

CO5[K4]: analyse the efficiency of public key algorithm to secure data transfer

CO-PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1 [K1]	2	2	–	2	1	-	1
CO2 [K2]	2	2	-	2	–	1	–
CO3 [K3]	2	2	1	2	1	1	1
CO4 [K4]	3	2	1	2	1	1	1
CO5 [K4]	3	2	2	2	1	1	1
Weightage of the course	12	10	04	10	04	04	04
Weighted percentage of Course contribution to POs	**2.41**	**2.38**	**2.68**	**2.65**	**2.9**	**1.8**	**2.26**

Based on the level of contribution ('3'-High, '2'-Medium, '1'-Low '-' No Correlation)

UNIT I **(12 hrs)**

Computer Network Security Concepts: Computer Security Concepts – The OSI Security Architecture – Security Attacks – Security Services – Security Mechanisms – Fundamental Security Design Principles – Attack Surfaces and Attack Trees – A model for Network Security. **Introduction to Number Theory:**

Divisibility and the Division Algorithm – The Euclidean Algorithm – Modular Arithmetic – Prime Numbers – Fermat's and Euler's Theorem – Testing for Primality – The Chinese Reminder Theorem.

UNIT II **(12 hrs)**

Classical Encryption Techniques: Symmetric Cipher Model – Substitution Techniques – Transportation Techniques – Rotor Machines – Steganography. **Block Ciphers and the Data Encryption Standard:** Traditional Block Cipher Structure – The Data Encryption Standard (DES) – A DES example – The strength of DES – Block Cipher Design Principles. **Finite Fields:** Groups – Rings – Fields – Finite Fields of the Form GF (p) – Polynomial Arithmetic – Finite Fields of the Form GF (2^n).

UNIT III **(12 hrs)**

Advanced Encryption Standard: Finite Filed of Arithmetic – AES Structure – AES Transformation Functions – AES key Expansion – An AES Example – AES Implementation. **Block Cipher Operation:** Multiple Encryption and Triple DES – Electronic Code Book – Cipher Block Chaining mode – Cipher Feedback Mode – Output Feedback Mode – Counter Mode – XTS – AES Mode for Block Oriented Storage Devices – Format Preserving Encryption.

UNIT IV **(12 hrs)**

Public Key Cryptography and RSA: Principles of Public Key Cryptosystems – The RSA Algorithm. **Other Public key Cryptosystems:** Diffie-hellman Key Exchange – Elgamal Cryptographic System – Elliptic Curve Arithmetic – Elliptic Curve Cryptography – Pseudorandom Number Generation Based on Asymmetric Cipher. **Cryptographic Hash Functions:** Two Simple Hash Functions – Requirements and Security – Hash Functions based on Cipher Block Chaining – Secure Hash Algorithm (SHA) – SHA-3.

UNIT V **(12 hrs)**

Wireless Network Security: Wireless Security – Mobile Device Security – IEEE 802.11 Wireless LAN Overview – IEEE 802.11i Wireless LAN Security. **Electronic Mail Security:** Internet Mail Architecture – Email Formats – Email Threats and Comprehensive Email Security – S/MIME – Pretty Good Privacy - DNSSEC – DNS-Based Authentication of Named Entities – Sender Policy Framework – Domain Keys Identified Mail – Domain-Based Message Authentication, Reporting and Conformance.

TEXTBOOK

1. William Stallings. *Cryptography and Network Security*. Uttar Pradesh: Pearson India Education Services Pvt. Ltd, 2018.

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1. Behrouz A. Forouzan and Debdeep Mukhopadhyay. *Cryptography and Network Security.* New Delhi: Tata McGraw Hill Education Private Limited, 2011.
2. AtulKahate. *Cryptography and Network Security.* New Delhi: Tata McGraw Hill Education Private Limited, 2010.
3. Richard E. Smith. *Internet Cryptography.* Delhi: Pearson Education Pvt. Ltd, 2000.

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SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF INFORMATION TECHNOLOGY
UG Programme – B.Sc. Information Technology
SEMESTER – VI
MAJOR ELECTIVE COURSE – III: SYSTEM SOFTWARE (21UITO63)
(From 2021-2022 Batch onwards)

HOURS/WEEK: 4 **INT. MARKS : 40**
CREDITS : 3 **EXT. MARKS : 60**
DURATION : 60 hrs **MAX. MARKS: 100**

Preamble

This course familiarizes the learners with the System software and machine architecture, a simple SIC assembler and algorithm types of assembler, Basic loader functions, Program Linking, Basic macro processor functions and Text editors.

Course Outcomes (CO)

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

CO1[K1]: describe the major tasks of the system software of a computer system,
CO2[K2]: illustrate the focusing on internal working of the hardware and software interface of a typical system
CO3[K3]: apply the working mechanism of system software such as assemblers linkers, loaders.
CO4[K4]: classify the dependent and independent macro processor
CO5[K4]: analyze and demonstrate the editing and debugging tools

CO-PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	2	2	–	2	1	-	1
CO2[K2]	2	2	-	2	–	1	–
CO3[K3]	2	2	1	2	1	1	1
CO4[K4]	3	2	1	2	1	1	1
CO5[K4]	3	2	2	2	1	1	1
Weightage of the course	12	10	04	10	04	04	04
Weighted percentage of Course contribution to Pos	**2.41**	**2.38**	**2.68**	**2.65**	**2.9**	**1.8**	**2.26**

Based on the level of contribution ('3'-High, '2'-Medium, '1'-Low '-' No Correlation)

UNIT I **(12 hrs)**

Background: System Software and Machine Architecture – The Simplified Instructional Computer (SIC) – Traditional (CISC) Machines – RISC Machines. **Assemblers**: Basic Assembler Functions – Machine Dependent Assembler Features.

UNIT II **(12 hrs)**

Machine Independent Assembler Features – Assembler Design Options – Implementation Examples. **Loaders and Linkers**: Basic Loader Functions – Machine Dependent Loader Features.

UNIT III **(12 hrs)**

Machine Independent Loader Features – Loader Design Options – Implementation Examples. **Macro Processors**: Basic Macro Processor Functions – Machine Independent Macro Processor Features – Macro Processor Design Options – Implementation Examples.

UNIT IV **(12 hrs)**

Compilers: Basic Compiler Functions – Machine Dependent Compiler Features – Machine Independent Compiler Features.

UNIT V **(12 hrs)**

Compiler Design Options – Implementation Examples. **Other System Software**: Database Management Systems – Text Editors – Interactive Debugging Systems – Debugging Functions and capabilities – Relationship with other parts of the system – User-Interface Criteria.

TEXTBOOK

1. Leland L. Beck. *System Software – An Introduction to Systems Programming*. Singapore: Pearson Education (Singapore) Pte. Limited, 2004.

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1. D.M. Dhamdhere. *Systems Programming and Operating Systems*. Delhi: Tata McGraw-Hill, 2009.
2. John J. Donovan. *Systems Programming*. Delhi: Tata McGraw-Hill Edition, 2009.
3. John R. Levine. *Linkers & Loaders*. Harcourt India Pvt. Ltd, Singapore: Morgan Kaufmann Publishers, 2000.

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2. https://shraddhasshinde.files.wordpress.com/2017/12/spos-by-dhamdhere.pdf
3. https://books.google.co.in/books?id=Yx1sRW3BQzcC&printsec=frontcover&source=gbs_atb#v=onepage&q&f=false

4. https://books.google.co.in/books?id=s7zgF7InxIgC&printsec=copyright&source=gbs_pub_info_r#v=onepage&q&f=false
5. http://fmcet.in/CSE/CS2304_uw.pdf

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF INFORMATION TECHNOLOGY
UG Programme – B.Sc. Information Technology
SEMESTER – VI
SKILL ENHANCEMENT COURSE – VI: PRACTICAL: R PROGRAMMING
(21UITS6P)
(From 2021-2022 Batch onwards)

HOURS/WEEK: 2 **INT. MARKS : 50**
CREDIT : 1 **EXT. MARKS : 50**
DURATION : 30 hrs **MAX. MARKS: 100**

Preamble

This course introduces the learners to the basics of image processing and explore the techniques involved in data analytics.

Course Outcomes (CO)

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

CO1[K1]: describe the basic concept of R program

CO2[K2]: explain the various methods of built in functions and operators

CO3[K3]: apply the functions and control statements to perform mathematical operations

CO4[K4]: analyse the efficiency of the built-in functions cbind() and rbind()

CO5[K4]: examine the methodologies to organize the elements using vector and list

CO-PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	2	2	-	1	1	1	-
CO2[K2]	2	2	-	1	-	1	-
CO3[K3]	2	2	-	2	1	-	-
CO4[K4]	1	1	1	1	1	1	1
CO5[K4]	2	1	1	1	1	1	1
Weightage of the course	09	08	02	06	04	04	02
Weighted percentage of Course contribution to Pos	**1.81**	**1.9**	**1.34**	**1.59**	**2.9**	**1.8**	**1.13**

Based on the level of contribution ('3'-High, '2'-Medium, '1'-Low '-' No Correlation)

1. Write an R-Program to take input from user.
2. Write an R-Program to demonstrate working with operators (Arithmetic, Relational, Logical, Assignment operators).
3. Write an R Program to Find the Factorial of a Number
4. Write an R Program to Find the Fibonacci sequence Using Recursive Function
5. Write an R Program to Make a Simple Calculator
6. Write an R Program to Find L.C.M of two numbers
7. Write an R Program to create a Vector and to access elements in a Vector
8. Write an R Program to create a Matrix and access rows and columns using functions colnames() and rownames() .
9. Write an R Program to create a Matrix using cbind() and rbind() functions.
10. Write an R Program to create a Matrix from a Vector using **dim ()** function.
11. Write an R Program to access a Data Frame like a List.
12. Write an R Program to access a Data Frame like a Matrix.

COURSES OFFERED TO OTHER DEPARTMENT

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF INFORMATION TECHNOLOGY
UG Programme – B.Sc. Mathematics
SEMESTER – III
ALLIED COURSE – III: PROGRAMMING IN C AND C++ (21UMAA31)
(From 2021-2022 Batch onwards)

HOURS/WEEK: 4 **INT. MARKS : 40**
CREDITS : 4 **EXT. MARKS : 60**
DURATION : 60 hrs **MAX. MARKS: 100**

Preamble

This course introduces the learners to the importance of C & C++ Programming Languages and to explore the creative programming skills.

Course Outcomes (CO)

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

CO1[K1]: identify the basic concepts and importance in procedural languages

CO2[K2]: explain the structure of array and strings in programming languages

CO3[K3]: apply different operations on functions, pointers, structures & unions

CO4[K4]: classify the concepts in object oriented programming in terms of software reuse and managing complexity to solve real-world problems

C05[K4]: analyze the characteristics of procedure and object oriented programming languages

CO-PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	2	2	1	1	1	-	-
CO2[K2]	2	2	-	2	-	-	-
CO3[K3]	3	2	1	1	1	2	1
CO4[K4]	2	2	1	2	1	2	1
CO5[K4]	2	3	1	2	1	2	2
Weightage of the course	11	11	04	08	04	06	04
Weighted percentage of Course contribution to POs	**1.84**	**2.26**	**2.13**	**2.05**	**4.17**	**2.67**	**2.42**

Based on the level of contribution ('3'-High, '2'-Medium, '1'-Low, '-' No Correlation)

UNIT I **(12 hrs)**

Overview of C: History of C – Importance of C – Basic Structure of C Programs. **Constants, Variables and Data Types:** Introduction – Character Set – C Tokens – Keywords and Identifiers – Constants – Variables – Data Types –

Declaration of Variables – Declaration of Storage Class. **Operators and Expressions**: Introduction – Arithmetic Operators – Relational Operators – Logical Operators – Assignment Operators – Increment and Decrement Operators – Conditional Operator – Bitwise Operators – Special Operators. **Managing Input/Output Operations**: Introduction – Reading a Character – Writing a Character – Formatted Input – Formatted Output.

UNIT II **(12 hrs)**

Decision Making and Branching: Introduction – Simple IF Statement – If Else Statement – Nesting of IF Else Statements – The Else IF Ladder – The Switch Statement – The GOTO Statement. **Decision Making and Looping**: Introduction – The While Statement – The do Statement – The for Statement. **Arrays:** Introduction – One Dimensional Arrays – Declaration of One Dimensional Arrays – Initialization of One Dimensional Arrays – Two Dimensional Arrays – Initializing Two Dimensional Arrays – Multi Dimensional Arrays. **Character Arrays and Strings:** Introduction – Declaring and Initializing String Variables –Reading Strings from Terminal – Writing Strings to Screen – String Handling Functions.

UNIT III **(12 hrs)**

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 – Recursion. **Structures and Unions:** Introduction – Defining a Structure – Declaring Structure Variables – Accessing Structure Members – Unions. **Pointers:** Introduction – Understanding Pointers – Accessing the Address of a Variable – Declaring Pointer Variable – Initialization of Pointer Variable – Accessing a Variable through its Pointer.

UNIT IV **(12 hrs)**

Principles of Object Oriented Programming: Software Crisis – Basic Concept of Object Oriented Programming – Benefits of OOP – Object Oriented Languages – Application of OOP. **Beginning with C++**: What is C++ – Applications of C++ – A Simple C++ Program – Structure of C++ Program. **Tokens, Expressions and Control Structures:** Introduction – Tokens – Keywords – Identifiers and Constants – Basic Data Types – User Defined Data Types –Derived Data Types – Operators in C++ – Manipulators. **Functions in C++:** Introduction – The Main Function – Function Prototyping – Inline Function – Recursion – Function Overloading.

UNIT V **(12 hrs)**

Classes and Objects: Introduction – Specifying a Class – Defining Member Functions – Memory Allocation for Objects – Arrays of Objects – Objects as Function Arguments – Friendly Functions – Returning Objects. **Constructors and Destructors:** Introduction – Constructor – Parameterized Constructor – Copy Constructor – Destructor. **Operator Overloading and Type Conversions:** Introduction – Defining Operator Overloading – Overloading Unary Operators –

Overloading Binary Operators. **Inheritance:** Introduction – Defining Derived Class – Single Inheritance – Multilevel Inheritance – Multiple Inheritance – Hierarchical Inheritance.

TEXTBOOKS

1. E. Balagurusamy. *Programming in ANSI C.* Chennai: McGraw-Hill Education (India) Private Limited, 2019. **(UNITS I, II & III)**
2. E. Balagurusamy. *Object Oriented Programming with C++*. Chennai: McGraw-Hill Education (India) Private Limited, 2018. **(UNITS IV & V)**

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1. Yashvant P.Kanetkar. *Let Us C*. New Delhi : BPB Publications Pvt Ltd, 2016
2. Byron S.Gottfried. *Programming with C.* New Delhi: Tata McGraw-Hill Education Pvt Ltd, 2014.
3. Herbert Schildt. *The Complete Reference.* New Delhi: Tata McGraw-Hill Education Pvt Ltd, 2003.

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2. http://www.freebookcentre.net/programming-books-download/Fundamentals-of-C-Programming-(PDF-72P).html
3. http://courses.washington.edu/css502/zander/Notes/08inheritance.pdf
4. https://nptel.ac.in/content/storage2/106/104/106104128/MP4/mod01lec06.mp4
5. https://nptel.ac.in/content/storage2/106/104/106104128/MP4/mod01lec20.mp4

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF INFORMATION TECHNOLOGY
UG Programme – B.Sc. Mathematics
SEMESTER – III
ALLIED COURSE – III: PRACTICAL: PROGRAMMING IN C AND C++
(21UMAA3P)
(From 2021-2022 Batch onwards)

HOURS/WEEK: 2 **INT. MARKS : 50**
CREDIT : 1 **EXT. MARKS : 50**
DURATION : 30 hrs **MAX. MARKS: 100**

Preamble

This course introduces the learners to logical programming skills using the fundamentals and basics of C and C++ language.

Course Outcomes (CO)

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

CO1[K1]: identify the logical programming skills using the fundamentals and basics of C language

CO2[K2]: explain the concept of control statements, arrays and strings to execute a task

CO3[K3]: apply the techniques of functions to perform the task

CO4[K4]: examine the basic ideas about the classes and objects to compute square and cube operations

C05[K4]: inspect the concept of overloading and inheritance

CO-PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	2	2	-	1	-	2	-
CO2[K2]	2	2	-	1	-	2	1
CO3[K3]	2	2	1	1	1	2	1
CO4[K4]	2	2	2	1	1	2	1
CO5[K4]	2	2	2	1	1	2	1
Weightage of the course	10	10	05	05	03	10	04
Weighted percentage of Course contribution to POs	**1.67**	**2.06**	**2.66**	**1.28**	**3.13**	**4.44**	**2.42**

Based on the level of contribution ('3'-High, '2'-Medium, '1'-Low, '-' No Correlation)

PROGRAMMING IN C

1. To perform the Arithmetic Operations using arithmetic operators.
2. To check the given number is odd or even using switch case statement.
3. To find the Biggest among Three Numbers using if else statement.
4. To implement number sorting using array.
5. To perform the sum of digits using function.
6. To calculate the factorial value by using recursion.
7. To perform the student mark list generation using Structure.

PROGRAMMING IN C++

8. To calculate square and cube values using Class and Objects.
9. To calculate area of given value using inline function
10. To calculate volume of given value using Function Overloading.
11. To overload Unary operator using Operator overloading.
12. To calculate the employee payroll using Inheritance.

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF INFORMATION TECHNOLOGY
UG Programme – B.Sc. Mathematics
SEMESTER – IV
ALLIED COURSE – IV: MULTIMEDIA AND ITS APPLICATIONS (21UMAA41)
(From 2021-2022 Batch onwards)

HOURS/WEEK: 4 **INT. MARKS : 40**
CREDITS : 4 **EXT. MARKS : 60**
DURATION : 60 hrs **MAX. MARKS: 100**

Preamble

This course familiarizes the learners with the basic concepts of multimedia, underlying principles and various techniques of multimedia applications.

Course Outcomes (CO)

On successful completion of the course, the learners will be able to
CO1[K1]: state the basic features of multimedia elements
CO2[K2]: explain the various compression techniques of text and image
CO3[K3]: apply the different methods to implement 2D & 3D animations
CO4[K4]: justify the concepts and techniques of editing a video
CO5[K4]: examine the fundamental working principles of audio

CO-PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	2	2	-	2	-	2	-
CO2[K2]	2	2	-	2	-	2	-
CO3[K3]	2	2	-	2	1	2	1
CO4[K4]	2	2	-	2	1	2	1
CO5[K4]	2	2	-	2	1	2	1
Weightage of the course	10	10	-	10	03	10	03
Weighted Percentage of Course contribution to POs	**1.67**	**2.06**	**0**	**2.56**	**3.13**	**4.44**	**1.82**

Based on the level of contribution ('3'-High, '2'-Medium, '1'-Low, '-' No Correlation)

UNIT I **(12 hrs)**

Multimedia – An Overview: Introduction – Multimedia Presentation and Production – Characteristics of a Multimedia Presentation – Uses of Multimedia – Promotion of Multimedia Based Content – Steps for Creating a Multimedia Presentation.

UNIT II **(12 hrs)**

Text: Introduction – Types of Text – Unicode Standard – Font – Insertion of Text – Text Compression – File Format. **Image:** Introduction – Image Type – Seeing Color – Color Model – Basic Steps for Image Processing – Specification of Digital Image.

UNIT III **(12 hrs)**

Audio: Introduction – Acoustics – Nature of Sound Waves – Fundamental Characteristics of Sound – Musical Note and Pitch – Psycho Acoustics – Elements of Audio System – Microphone – Amplifier – Loud Speaker – Audio Mixer – Digital Audio – Audio Transmission – Audio Recording Devices.

UNIT IV **(12 hrs)**

Video: Introduction – Analog Video Camera – Transmission of Video Signal – Video Signal Formats – Digital Video Standards – PC Video – Video Recording Formats and Systems – Video File Formats and CODECs – Video Editing – Video Editing Software.

UNIT V **(12 hrs)**

Animation: Introduction – Historical Background – Uses of Animation – Key Frame and Tweening – Types of Animation – Computer Assisted Animation – Creating Movement – Principles of Animation – Some Techniques of Animation.

TEXTBOOK

1. Ranjan Parekh. *Principles of Multimedia*. New Delhi: Tata McGraw-Hill Education Private Limited, 2011.

REFERENCES

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1. Tay Vaughan. *Multimedia: Making it work.* New Delhi: Tata McGraw-Hill, 2001.
2. Ramesh Bangia. *Introduction to Multimedia.* Chennai: Laxmi Publications Pvt. Ltd, 2015.
3. Gaurav Bhatnagar, Shikha Mehta and SugataMitra. *Introduction to Multimedia Systems.* New Delhi: Academic Press, 2002.

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2. https://www.google.co.in/books/edition/_/jacQAgAAQBAJ?hl=en&gbpv=1
3. https://ayomenulisfisip.files.wordpress.com/2018/01/introduction-to-multimedia.pdf
4. https://jianhua.cis.k.hosei.ac.jp/course/mm/Lesson04.pdf
5. https://nptel.ac.in/courses/117/105/117105083/

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF INFORMATION TECHNOLOGY
UG Programme – B.Sc. Mathematics
SEMESTER – IV
ALLIED COURSE – IV: PRACTICAL: MULTIMEDIA AND ITS APPLICATIONS
(21UMAA4P)
(From 2021-2022 Batch onwards)

HOURS/WEEK: 2 **INT. MARKS : 50**
CREDIT : 1 **EXT. MARKS : 50**
DURATION : 30 hrs **MAX. MARKS: 100**

Preamble

This course enables the learners to enhance the creative knowledge and professional designing skills by implementing the various Photoshop tools.

Course Outcomes (CO)

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

CO1[K3]: use the basic tools for applying color variations
CO2[K3]: apply the benefits of professional tools for designing the banner
CO3[K3]: draw a greeting card design by using the advanced tools
CO4[K6]: create a new animation by implementing the techniques of image ready
CO5[K6]: design and develop new professional logo

CO-PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K3]	2	2	-	2	-	2	-
CO2[K3]	2	2	-	2	1	2	-
CO3[K3]	2	2	-	2	1	2	1
CO4[K6]	1	2	-	2	1	2	1
CO5[K6]	1	2	-	2	1	2	1
Weightage of the course	08	10	-	10	04	10	03
Weighted Percentage of Course contribution to POs	**1.34**	**2.06**	**0**	**2.56**	**4.17**	**4.44**	**1.82**

Based on the level of contribution ('3'-High, '2'-Medium, '1'-Low, '-' No Correlation)

1. To convert black and white picture to color.
2. To develop passport size photo.
3. To design ID card.
4. To design flex banner.
5. To design greeting card.
6. To apply mirror effects.
7. To design book wrapper and water mark.
8. To design a professional logo.
9. To create simple animation using image ready.
10. To animate story using image ready.

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF INFORMATION TECHNOLOGY
UG Programme – B.Sc. Mathematics
SEMESTER - V
SKILL ENHANCEMENT COURSE – V: PRACTICAL: HTML (21UMAS5P)
(For those who have joined from June 2021 and later)

HOURS/WEEK: 2 **INT. MARKS : 50**
CREDITS : 2 **EXT. MARKS : 50**
DURATION : 30 hrs **MAX. MARKS: 100**

Preamble

This course aims to introduce the students to basic tags involved in web page designing and to explore their creative designing skills.

Course Outcomes (CO)

On Successful completion of the course, the learners will be able to
CO1[K1]: state the basic web programming concepts
CO2[K2]: illustrate the various types of lists
CO3[K3]: apply the mapping concepts with the help of image map
CO4[K4]: classify the form tags involved in designing a web page
C05[K6]: create and develop own web site using frames and images

CO-PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	2	2	-	2	-	1	-
CO2[K2]	2	2	-	2	-	1	-
CO3[K3]	2	2	-	1	1	1	1
CO4[K4]	2	2	-	2	1	1	1
CO5[K6]	1	1	-	1	2	1	1
Weightage of the course	09	09	-	08	04	05	03
Weighted percentage of Course contribution to POs	**1.5**	**1.85**	**0**	**2.05**	**4.17**	**2.22**	**1.82**

Based on the level of contribution ('3'-High, '2'-Medium, '1'-Low '-' No Correlation)

1. To design the simple web page using HTML tags.
2. To create the Time table using Table tags.
3. To design the web page for displaying student bio data.
4. To design the web page for Menu card using Lists

5. To design the web page for map using Image map tag.
6. To prepare the Advertisement using Marquee Tags
7. To create the simple image gallery using frames tag.
8. To create the any application form using forms tag.
9. To create the college website using HTML tags.

To create the tourism website using frames tags.