SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
(AFFILIATED TO MADURAI KAMARAJ UNIVERSITY, MADURAI
RE-ACCREDITED WITH 'A' GRADE (3rd CYCLE) BY NAAC WITH CGPA 3.11)

Programme Scheme, Scheme of Examination and Syllabi

(From 2023-2024 Batch onwards)

Department of Computer Applications

UG Programme

Approved in the Academic Council – XIV held on 31/07/2023

Curriculum Design and Development Cell
Annexure H

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
(AFFILIATED TO MADURAI KAMARAJ UNIVERSITY, MADURAI
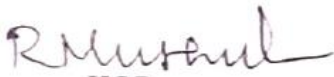## RE-ACCREDITED WITH 'A' GRADE (THIRD CYCLE) BY NAAC WITH CGPA 3.11)

Programme Scheme, Scheme of Examination and Syllabi
(From 2023-2024 Batch onwards)

Department of Computer Applications
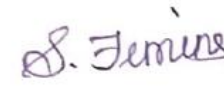
UG Programme

Approved in the Academic Council – XIV held on 31/07/2023

Curriculum Design and Development Cell

HOD	Dean of Applied Science	Dean of Academic Affairs	Principal

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF COMPUTER APPLICATIONS
MEMBERS OF BOARD OF STUDIES

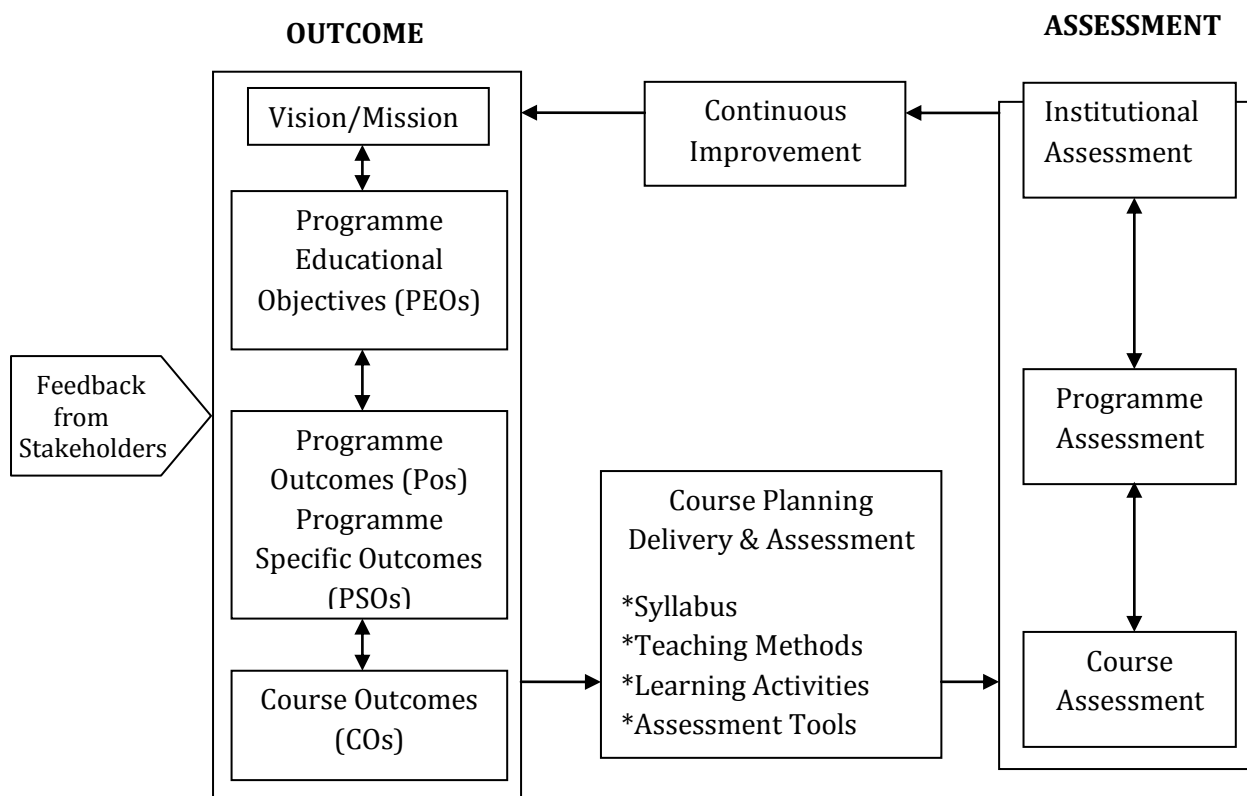| S.No.	Board Members	Name and Designation
1.	Chairman of the Board	**Ms. R. Muthulakshmi,** Head & Associate Professor of Computer Applications, Sri Kaliswari College (Autonomous), Sivakasi.
2.	University Nominee	**Dr.R.Rathinasabapathy** AssociateProfessor, Department of Computer Applications, School of Information Technology, Madurai Kamaraj University, Madurai. Mail id: saba.dca@mkuniversity.ac.in
3.	Academic Expert 1	**Dr.A.Komathi** Vice Principal & Head, Department of CS & IT, Nadar Saraswathi College of Arts &Science, Vadaputhupatti, Theni. Mail id: komathiramakrishnan@gmail.com
4.	Academic Expert 2	**Dr.K.Karthigadevi** Head / SHIP, Kalasalingam Academy of Research and Education, Anand Nagar, Krishnankoil. Mail id: k.karthigadevi@klu.ac.in k.karthikrish@gmail.com
5.	Industrialist	**Mr. B. Durai Prasanna,** Managing Director, Srimax Software Solutions, Sivakasi.
6.	Alumnae	**Ms.M.Gayathri** Assistant System Engineer, Tata Consultancy Services, Coimbatore. Mail id: gayathri.muniyaraj@tcs.com gayathrimuniaraj@gmail.com
Members		
7.	Mrs.M.Guru Maheswari	Assistant Professor of Computer Applications
8.	Mr.K.Ganeshbabu	Assistant Professor of Computer Applications
9.	Mr.R.Prabakaran	Assistant Professor of Computer Applications
10.	Mr.M.Muthusrinivasan	Assistant Professor of Computer Applications
11.	Mrs.V.Mahalakshmi	Assistant Professor of Computer Applications
12.	Mr.S.Viswanathan	Assistant Professor of Computer Applications
13.	Mr.R.Srijanakiraman	Associate Professor of Computer Applications
14.	Mr.K.T.Kirubasekar	Assistant Professor of Computer Applications
15.	Mr.P.Nishanth Kumar	Assistant Professor of Computer Applications
16.	Ms.S.Ramya	Assistant Professor of Computer Applications

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade (CGPA 3.11) by NAAC)
DEPARTMENT OF COMPUTER APPLICATIONS
UG Programme – Bachelor of Computer Applications
GUIDELINES FOR OUTCOME-BASED EDUCATION WITH CHOICE BASED CREDIT SYSTEM
(From 2023-2024 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 groom the students technically and ethically so that they remains a preferred choice of the software industry.
- To set up the students for a globalized technological society and orient them towards serving the general public.

V. MISSION OF THE DEPARTMENT

- To train interpersonal and communication skills for the rural students.
- To accomplish employability in programming industry and other industrial areas and furthermore elevate understudies to turn into a successful entrepreneur.
- To prepare young minds in the field of recent technologies through education, research and industry-institute interaction to serve society, the nation and beyond.

VI. PROGRAMME EDUCATIONAL OBJECTIVES (PEOs)

The Graduates will

PEO1: ensure employability and exponential career growth of students.

PEO2: sharpen decision making skills to ensure sustainability in rapidly changing Software Industry.

PEO3: exhibit the skills and abilities effectively as a team member and/or leader by adhering to ethical standards in the profession.

PEO4: apply Software Industry practices to model and analyze the real life problems and interpret the results.

PEO5: build and lead cross-functional teams, upholding the professional responsibilities & ethical values.

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 customer requirements in multidisciplinary domains, create high level design and implement robust 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) – BCA

On successful completion of BCA, the students will

PSO1: comprehend, explore and build up computer programs in the allied areas like Algorithms, System Software, Multimedia, Web Design and Data Analytics for efficient design of computer-based systems of varying complexity.

PSO2: explore technical knowledge in diverse areas of Computer Applications and cultivate skills for successful career, entrepreneurship and higher studies.

PSO3: clarity on both conceptual and application oriented skills in computer technologies with quantitative and qualitative techniques.

PSO4: build technical, professional, practical and communicative skills to face the industrial with clarity.

PSO5: design and develop reliable software applications for social and industry needs.

PSO6: manage project work effectively as an individual member or as a leader in project being a team player with uplifting demeanor in a speculated time.

PSO7: explore new technologies and update their skills with an attitude towards independent and lifelong learning.

IX. PO-PSO Mapping Matrix – BCA

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

X. PO-PEO Mapping Matrix – BCA

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

REGULATIONS

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

Eligibility

Candidate should have studied +2 Mathematics / Physics / Biology with Computer Science/ Computer Applications in the 10 + 2 stream, passed the Higher Secondary Examinations conducted by the Board of Higher Secondary Education, Government of Tamil Nadu 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 2023 - 2024 may be permitted to write their examinations in this pattern up to April 2031.

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF COMPUTER APPLICATIONS
UG Programme – Bachelor of Computer Applications
SCHEME OF EXAMINATION

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

For all Theory Courses (Part I, II, III)   : Internal Marks: 25; External Marks: 75

For Courses with both Theory and Practical, it will be considered as practical course and assessment will be for both Theory and Practical.

For Part-IV Courses   : Internal Marks:25; External Marks: 50(Converted to 75)

For all Practical Courses, Project and
 Internship   : Internal Marks: 25; External Marks: 75

Internal Mark Distribution for Theory Courses

Assessment Type	Marks	Scheme of Assessment
Internal Test	10 marks	Two Internal Tests and 1 Model Exam will be conducted and average of the best two will be considered
Written Assignment E-Assignment/ Case Studies/ Reviews/ Field Assignments/ Poster Presentations/ Portfolios	5 marks	Any two of the Assignments will be given and the average of the two will be considered
Quiz	5 marks	One Quiz Test will be conducted
Viva/ Oral Exam/ Group Discussion/ Role Play	5 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	15 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	65 marks	End result of the Practical
Viva –Voce	10 marks	Oral Mode Test

Internal Mark Distribution for Courses with both Theory and Practical

Assessment Type	Marks	Scheme of Assessment
Internal Test	10 marks	Two Internal Tests and 1 Model Exam will be conducted and average of the best two will be considered
Written Assignment E-Assignment/ Case Studies/ Reviews/ Field Assignments/ Poster Presentations/ Portfolios	5 marks	Any two of the Assignments will be given and the average of the two will be considered
Lab work /Program Execution	10 marks	Two Internal Tests will be conducted and the average of the two will be considered

External Mark Distribution for Courses with both Theory and Practical

Assessment Type	Marks	Scheme of Assessment
External Written Test	50 marks	Two hours External Exam will be conducted for 50 marks
Lab work /Program Execution	20 marks	End result of the Practical
Viva –Voce	05 marks	Oral Mode Test

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF COMPUTER APPLICATIONS
UG Programme - BCA
QUESTION PAPER PATTERN FOR PART- I, PART- II & PART-III COURSES

Internal Test – 30 Marks – 1 hr Duration

S.No	Type of Questions	Marks
1.	Objective type Questions: Multiple Choice – 3 questions Answer in a Word/Sentence – 3 questions	 03 03
2.	Short Answer–2 questions –either or type	2x7=14
3.	Long Answer–1 question – either or type	1x10=10

Summative Examinations – For Part- I, Part- II & Part-III Courses
75 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	5x7=35
3.	Long Answer - 3 questions – either or type	3x10=30

QUESTION PAPER PATTERN FOR PART -IV COURSES
Internal Test- 30 Marks – 1 hr Duration

S.No	Type of Questions	Marks
1.	Objective type Questions: Multiple Choice – 5 questions	 05
2.	Short Answer - 3 questions – either or type	3x5=15
3.	Long Answer - 1 question – either or type	01x10=10

Summative Examinations – For Part-IV Courses 50 Marks (converted to 75)
-2 hrs Duration

S.No	Type of Questions	Marks
1.	Objective type Questions: Multiple Choice – 10 questions	 10
2.	Short Answer - 4 questions – either or type	4x5=20
3.	Long Answer - 2 questions – either or type	02x10=20

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF COMPUTER APPLICATIONS
UG Programme – Bachelor of Computer Applications

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,

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

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

For Summative Examinations,

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

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 $\quad = \dfrac{\text{Satisfaction Number}}{\text{Response Received}} \times 100$

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

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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

Percentage of CO Attainment	Level of Attainment
= 70% and above	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.

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

$$\text{Percentage attainment for each PO} = \frac{\text{Total weightage of all courses contributed to each PO}}{\text{Total weightage of all courses contributed to all PO s}} \times 100 \text{ x weighted contribution of the course in the attainment of each PO}$$

Percentage Attainment of PO = Average of Percentage attainment of all POs

Expected Level of Attainment for each of the Programme Outcomes

Percentage of PO Attainment	Level of Attainment
= 70% and above	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

Percentage of PEO Attainment	Level of Attainment
= 70% and above	Excellent
= 60% - <70 %	Very good
= 50% -< 60 %	Good
= 40% - < 50 %	Satisfactory
Below 40%	Not Satisfactory

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DEPARTMENT OF COMPUTER APPLICATIONS
UG Programme – Bachelor of Computer Applications
CURRICULUM STRUCTURE
OUTCOME-BASED EDUCATION WITH CHOICE BASED CREDIT SYSTEM
(From 2023-2024 Batch onwards)

Part	Courses	Sem I	Sem II	Sem III	Sem IV	Sem V	Sem VI	Credits
I	Podhu Tamil / Hindi	6 (3)	6 (3)	6 (3)	6 (3)	-	-	12
II	General English	6 (3)	6(3)	6 (3)	6 (3)	-	-	12
III	Core Courses	5 (5) 5 (5)	5 (5) 5 (5)	5 (5) 5 (5)	5 (5) 5 (5)	5 (4) 5 (4) 5 (4) 5 (4) P	6 (4) 6 (4) 6 (4)	68
III	Elective Courses Generic/ Discipline Specific	4 (3)	4 (3)	4 (3)	3 (3)	4 (3) 4 (3)	5 (3) 5 (3)	24
IV	Skill Enhancement Courses	2 (2) F 2 (2) NME	2 (2) 2(2) NME	1(1) E 2 (2)	2 (2) 2 (2)	-	2(2)	17
IV	Environmental Studies	-	-	1	1(2)	-	-	02
IV	Value Education	-	-	-	-	2(2)	-	02
IV	Internship/ Industrial Training	-	-	-	-	(2)	-	02
V	Extension Activity	-	-	-	-	-	(1)	01
	Total Hours (Per week)/ Credits	30(23)	30(23)	30(22)	30(25)	30(26)	30(21)	140 180

Self-paced Learning (Swayam Course)	-	-	-	-	-	1 Credit	1 Credit	

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DEPARTMENT OF COMPUTER APPLICATIONS
UG Programme – Bachelor of Computer Applications
CURRICULUM PATTERN
OUTCOME-BASED EDUCATION WITH CHOICE BASED CREDIT SYSTEM
(From 2023-2024 Batch onwards)
PROGRAMME CODE – UCA

Semester	Part	Course Code	Course Name	Hours	Credits	Internal Marks	External Marks
I	I	23UTAG11	Podhu Tamil / Hindi – I	6	3	25	75
	II	23UENL11	General English – I	6	3	25	75
	III	23UCAC11	**Core Course – I:** Python Programming	5	5	25	75
		23UCAC1P	**Core Course – II:** Practical : Python	5	5	25	75
		23UCAA11	**Elective Course Generic/Discipline Specific – I:** Discrete Mathematics – I	4	3	25	75
	IV	23UCAS1P	**Skill Enhancement Course – I: Foundation** Structured Programming Language in C Lab	2	2	25	75
		23UCAN11	**Skill Enhancement Course – II:** **Non Major Elective Course:** Fundamentals of Information Technology	2	2	25	75
			Total	**30**	**23**		
II	I	23UTAG21	Podhu Tamil / Hindi – II	6	3	25	75
	II	23UENL21	General English – II	6	3	25	75
	III	23UCAC21	**Core Course – III:** Object Oriented Programming Concepts using C++	5	5	25	75
		23UCAC2P	**Core Course – IV:** Practical : C++ Programming	5	5	25	75
		23UCAA21	**Elective Course Generic/Discipline Specific – II:** Optimization Techniques	4	3	25	75
	IV	23UCAS2P	**Skill Enhancement Course – III:** Office Automation Lab	2	2	25	75
		23UCAN21	**Skill Enhancement Course – IV:** **Non Major Elective Course:** Introduction to HTML	2	2	25	75
			Total	**30**	**23**		

III	I	23UTAG31	Podhu Tamil / Hindi – III	6	3	25	75
	II	23UENL31	General English – III	6	3	25	75
	III	23UCAC31	**Core Course V:** Java Programming	5	5	25	75
		23UCAC3P	**Core Course – VI:** Practical: Programming in Java	5	5	25	75
		23UCAA31	**Elective Course Generic/Discipline Specific – III:** Financial Accounting	4	3	25	75
	IV	23UCAS31	**Skill Enhancement Course – V: (Entrepreneurial Skill)** – Understanding Internet	1	1	25	75
		23UCAS3P	**Skill Enhancement Course – VI:** Web Designing Lab	2	2	25	75
		-	Environmental Studies	1	-	-	-
Total				30	22		
IV	I	23UTAG41	Podhu Tamil / Hindi – IV	6	3	25	75
	II	23UENL41	General English – IV	6	3	25	75
	III	23UCAC41	**Core Course – VII:** Data Structures and Algorithms	5	5	25	75
		23UCAC4P	**Core Course – VIII:** Practical: PL/SQL	5	5	25	75
		23UCAA41	**Elective Course Generic/Discipline Specific – IV:** Database Management System	3	3	25	75
	IV	23UCAS4P	**Skill Enhancement Course – VII:** Software Testing Lab	2	2	25	75
		23UCAS4Q	**Skill Enhancement Course – VIII:** PHP Programming Lab	2	2	25	75
		23UESR41	Environmental Studies	1	2	25	75
Total				30	25		
V	III	23UCAC51	**Core Course – IX:** Software Engineering	5	4	25	75
		23UCAC52	**Core Course – X:** ASP.Net Programming	5	4	25	75
		23UCAC5P	**Core Course – XI:** Practical: ASP .Net Programming	5	4	25	75
		23UCAJ51	**Core Course – XII:** Project with Viva Voce	5	4	25	75
		23UCAO51 23UCAO52	**Elective Courses Generic/Discipline Specific – V:** 1. IoT & its Applications 2. Artificial Intelligence	4	3	25	75
		23UCAO53 23UCAO54	**Elective Courses Generic/Discipline Specific – VI:** 1. Big Data Analytics 2. Computational Intelligence	4	3	25	75

	IV	23UVED51	Value Education	2	2	25	75
		23UCAJ52	Internship/Industrial Training	-	2	25	75
			Total	**30**	**26**		
VI	III	23UCAC61	**Core Course – XIII:** Computer Networks	6	4	25	75
		23UCAC62	**Core Course – XIV:** Operating System	6	4	25	75
		23UCAC6P	**Core Course – XV:** Practical: Mobile Application Development	6	4	25	75
		23UCAO61 23UCAO62	**Elective Courses Generic/Discipline Specific – VII:** 1. Cloud Computing 2. Grid Computing	5	3	25	75
		23UCAO63 23UCAO64	**Elective Courses Generic/ Discipline Specific – VIII:** 1. Cryptography 2. Image Processing	5	3	25	75
	IV	23UCAS6P	**Skill Enhancement Course – IX: Professional Competency Skill:** Advanced Excel Lab	2	2	25	75
	V	-	Extension Activity	-	1	-	100
			Total	**30**	**21**		

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DEPARTMENT OF COMPUTER APPLICATIONS
UG Programme – Bachelor of Computer Applications
OUTCOME-BASED EDUCATION WITH CHOICE BASED CREDIT SYSTEM
(From 2023-2024 Batch onwards)

PROGRAMME ARTICULATION MATRIX (PAM)

Semester	Course Code	Course Name	PO1	PO2	PO3	PO4	PO5	PO6	PO7
I	23UTAG11	Podhu Tamil / Hindi – I	10	7	2	8	2	2	3
	23UENL11	General English – I	10	7	2	8	2	2	3
	23UCAC11	**Core Course – I:** Python Programming	11	11	8	6	6	5	0
	23UCAC1P	**Core Course – II:** Practical : Python	12	9	7	9	3	4	2
	23UCAA11	**Elective Course Generic/Discipline Specific – I:** Discrete Mathematics – I	10	13	7	4	0	4	3
	23UCAS1P	**Skill Enhancement Course – I: Foundation** Structured Programming Language in C Lab	11	9	9	7	3	3	3
	23UCAN11	**Skill Enhancement Course – II: Non Major Elective Course:** Fundamentals of Information Technology	9	5	0	8	0	5	5
II	23UTAG21	Podhu Tamil / Hindi – II	10	8	2	8	2	2	3
	23UENL21	General English – II	10	8	2	8	2	2	3
	23UCAC21	**Core Course – III:** Object Oriented Programming Concepts using C++	11	11	8	6	6	5	1
	23UCAC2P	**Core Course – IV:** Practical : C++ Programming	12	11	10	8	3	3	2
	23UCAA21	**Elective Course Generic/Discipline Specific – II:** Optimization Techniques	10	11	8	6	0	7	5
	23UCAS2P	**Skill Enhancement Course – III:** Office Automation Lab	10	9	7	7	5	4	3
	23UCAN21	**Skill Enhancement Course – IV: Non Major Elective Course:** Introduction to HTML	9	5	0	8	0	5	5
III	23UTAG31	Podhu Tamil / Hindi – III	10	8	2	8	2	2	2

	23UENL31	General English – III	10	8	3	9	3	3	2
	23UCAC31	**Core Course V:** Java Programming	12	10	9	8	5	4	3
	23UCAC3P	**Core Course – VI:** Practical: Programming in Java	14	10	7	6	4	5	6
	23UCAA31	**Elective Course Generic/Discipline Specific – III:** Financial Accounting	12	11	10	6	4	4	5
	23UCAS31	**Skill Enhancement Course – V: (Entrepreneurial Skill)** – Understanding Internet	14	9	8	7	2	8	3
	23UCAS3P	**Skill Enhancement Course – VI:** Web Designing Lab	10	8	9	8	3	5	5
IV	23UTAG41	Podhu Tamil / Hindi – IV	10	8	2	9	2	2	2
	23UENL41	General English – IV	10	9	3	8	2	3	3
	23UCAC41	**Core Course – VII:** Data Structures and Algorithms	14	9	8	7	2	8	3
	23UCAC4P	**Core Course – VIII:** Practical: PL/SQL	13	10	8	7	3	5	6
	23UCAA41	**Elective Course Generic/Discipline Specific – IV:** Database Management System	14	9	9	8	2	8	4
	23UCAS4P	**Skill Enhancement Course – VII:** Software Testing Lab	12	9	8	7	4	2	6
	23UCAS4Q	**Skill Enhancement Course – VIII:** PHP Programming Lab	11	9	7	7	4	3	8
	23UESR41	Environmental Studies	8	5	1	7	8	5	5
V	23UCAC51	**Core Course – IX:** Software Engineering	11	6	12	9	4	5	0
	23UCAC52	**Core Course – X:** ASP.Net Programming	12	10	9	8	5	4	3
	23UCAC5P	**Core Course – XI:** Practical: ASP .Net Programming	12	12	9	6	5	4	3
	23UCAJ51	**Core Course – XII:** Project with Viva Voce	9	12	4	10	3	8	5
	23UCAO51 23UCAO52	**Elective Courses Generic/Discipline Specific – V:** 1. IoT & its Applications 2. Artificial Intelligence	13	12	6	9	5	4	3
		Elective Courses Generic/Discipline Specific – VI:	13	12	6	9	5	4	3

	23UCAO53	1. Big Data Analytics							
	23UCAO54	2. Computational Intelligence							
	23UVED51	Value Education	8	5	1	5	9	4	7
	23UCAJ52	Internship/Industrial Training	8	12	4	7	1	5	8
VI	23UCAC61	**Core Course – XIII:** Computer Networks	12	13	9	5	3	1	11
	23UCAC62	**Core Course – XIV:** Operating System	12	12	9	8	5	4	4
	23UCAC6P	**Core Course – XV:** Practical: Mobile Application Development	10	6	11	7	6	5	7
	23UCAO61 23UCAO62	**Elective Courses Generic/Discipline Specific – VII:** 1. Cloud Computing 2. Grid Computing	10	8	7	10	4	4	4
	23UCAO63 23UCAO64	**Elective Courses Generic/ Discipline Specific – VIII:** 1. Cryptography 2. Image Processing	12	13	9	5	3	1	11
	23UCAS6P	**Skill Enhancement Course – IX: Professional Competency Skill:** Advanced Excel Lab	10	8	6	5	4	3	3
	-	Extension Activity	8	2	1	7	9	8	5
Total Weightage of all Courses Contributing to PO			**479**	**399**	**269**	**323**	**155**	**184**	**181**

SRI KALISWARI COLLEGE (AUTONOMOUS), Sivakasi
(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade (CGPA 3.11) by NAAC)
DEPARTMENT OF COMPUTER APPLICATIONS
UG Programme – Bachelor of Computer Applications
OUTCOME-BASED EDUCATION WITH CHOICE BASED CREDIT SYSTEM
(From 2023-2024 Batch onwards)

PROGRAMME ARTICULATION MATRIX – WEIGHTED PERCENTAGE

Semester	Course Code	Course Name	PO1	PO2	PO3	PO4	PO5	PO6	PO7
I	23UTAG11	Podhu Tamil / Hindi – I	2.09	1.75	0.74	2.48	1.29	1.09	1.66
	23UENL11	General English – I	2.09	1.75	0.74	2.48	1.29	1.09	1.66
	23UCAC11	**Core Course – I:** Python Programming	2.3	2.76	2.97	1.86	3.87	2.72	0
	23UCAC1P	**Core Course – II:** Practical : Python	2.51	2.26	2.6	2.79	1.94	2.17	1.1
	23UCAA11	**Elective Course Generic/Discipline Specific – I:** Discrete Mathematics – I	2.09	3.26	2.6	1.24	0	2.17	1.66
	23UCAS1P	**Skill Enhancement Course – I: Foundation** Structured Programming Language in C Lab	2.3	2.26	3.35	2.17	1.94	1.63	1.66
	23UCAN11	**Skill Enhancement Course – II: Non Major Elective Course:** Fundamentals of Information Technology	1.88	1.25	0	2.48	0	2.72	2.76
II	23UTAG21	Podhu Tamil / Hindi – II	2.09	2.01	0.74	2.48	1.29	1.09	1.66
	23UENL21	General English – II	2.09	2.01	0.74	2.48	1.29	1.09	1.66
	23UCAC21	**Core Course – III:** Object Oriented Programming Concepts using C++	2.3	2.76	2.97	1.86	3.87	2.72	0.55
	23UCAC2P	**Core Course – IV:** Practical : C++ Programming	2.51	2.76	3.72	2.48	1.94	1.63	1.1
	23UCAA21	**Elective Course Generic/Discipline Specific – II:** Optimization Techniques	2.09	2.76	2.97	1.86	0	3.8	2.76
	23UCAS2P	**Skill Enhancement Course – III:** Office Automation Lab	2.09	2.26	2.6	2.17	3.23	2.17	1.66
	23UCAN21	**Skill Enhancement Course – IV: Non Major Elective Course:** Introduction to HTML	1.88	1.25	0	2.48	0	2.72	2.76
III	23UTAG31	Podhu Tamil / Hindi – III	2.09	2.01	0.74	2.48	1.29	1.09	1.1

	23UENL31	General English – III	2.09	2.01	1.12	2.79	1.94	1.63	1.1
	23UCAC31	**Core Course V:** Java Programming	2.51	2.51	3.35	2.48	3.23	2.17	1.66
	23UCAC3P	**Core Course – VI:** Practical: Programming in Java	2.92	2.51	2.6	1.86	2.58	2.72	3.31
	23UCAA31	**Elective Course Generic/Discipline Specific – III:** Financial Accounting	2.51	2.76	3.72	1.86	2.58	2.17	2.76
	23UCAS31	**Skill Enhancement Course – V: (Entrepreneurial Skill)** – Understanding Internet	2.92	2.26	2.97	2.17	1.29	4.35	1.66
	23UCAS3P	**Skill Enhancement Course – VI:** Web Designing Lab	2.09	2.01	3.35	2.48	1.94	2.72	2.76
	-	Environmental Studies	1.67	1.25	0.37	2.17	5.16	2.72	2.76
IV	23UTAG41	Podhu Tamil / Hindi – IV	2.09	2.01	0.74	2.79	1.29	1.09	1.1
	23UENL41	General English – IV	2.09	2.26	1.12	2.48	1.29	1.63	1.66
	23UCAC41	**Core Course – VII:** Data Structures and Algorithms	2.92	2.26	2.97	2.17	1.29	4.35	1.66
	23UCAC4P	**Core Course – VIII:** Practical: PL/SQL	2.71	2.51	2.97	2.17	1.94	2.72	3.31
	23UCAA41	**Elective Course Generic/Discipline Specific – IV:** Database Management System	2.92	2.26	3.35	2.48	1.29	4.35	2.21
	23UCAS4P	**Skill Enhancement Course – VII:** Software Testing Lab	2.51	2.26	2.97	2.17	2.58	1.09	3.31
	23UCAS4Q	**Skill Enhancement Course – VIII:** PHP Programming Lab	2.3	2.26	2.6	2.17	2.58	1.63	4.42
	23UESR41	Environmental Studies	1.67	1.25	0.37	2.17	5.16	2.72	2.76
V	23UCAC51	**Core Course – IX:** Software Engineering	2.3	1.5	4.46	2.79	2.58	2.72	0
	23UCAC52	**Core Course – X:** ASP.Net Programming	2.51	2.51	3.35	2.48	3.23	2.17	1.66
	23UCAC5P	**Core Course – XI:** Practical: ASP .Net Programming	2.51	3.01	3.35	1.86	3.23	2.17	1.66
	23UCAJ51	**Core Course – XII:** Project with Viva Voce	1.88	3.01	1.49	3.1	1.94	4.35	2.76
	23UCAO51 23UCAO52	**Elective Courses Generic/Discipline Specific – V:** 1. IoT & its Applications 2. Artificial Intelligence	2.71	3.01	2.23	2.79	3.23	2.17	1.66
		Elective Courses Generic/Discipline Specific – VI:	2.71	3.01	2.23	2.79	3.23	2.17	1.66

	Code	Course							
	23UCAO53 23UCAO54	1. Big Data Analytics 2. Computational Intelligence							
	23UVED51	Value Education	1.67	1.25	0.37	1.55	5.81	2.17	3.87
	23UCAJ52	Internship/Industrial Training	1.67	3.01	1.49	2.17	0.65	2.72	4.42
VI	23UCAC61	**Core Course – XIII:** Computer Networks	2.51	3.26	3.35	1.55	1.94	0.54	6.08
	23UCAC62	**Core Course – XIV:** Operating System	2.51	3.01	3.35	2.48	3.23	2.17	2.21
	23UCAC6P	**Core Course – XV:** Practical: Mobile Application Development	2.09	1.5	4.09	2.17	3.87	2.72	3.87
	23UCAO61 23UCAO62	**Elective Courses Generic/Discipline Specific – VII:** 1. Cloud Computing 2. Grid Computing	2.09	2.01	2.6	3.1	2.58	2.17	2.21
	23UCAO63 23UCAO64	**Elective Courses Generic/ Discipline Specific – VIII:** 1. Cryptography 2. Image Processing	2.51	3.26	3.35	1.55	1.94	0.54	6.08
	23UCAS6P	**Skill Enhancement Course – IX: Professional Competency Skill:** Advanced Excel Lab	2.09	2.01	2.23	1.55	2.58	1.63	1.66
	-	Extension Activity	1.67	0.5	0.37	2.17	5.81	4.35	2.76
Total Weightage of all Courses Contributing to PO			**100**	**100**	**100**	**100**	**100**	**100**	**100**

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF TAMIL
UG PROGRAMME – B.A., B.Sc., B.Com., BBA.,BCA.,
SEMESTER – I
பொதுத்தமிழ் – I (23UTAG11)
(From 2023-2024 Batch onwards)

HOURS / WEEK: 6	**INT. MARKS : 25**
CREDITS : 3	**EXT. MARKS : 75**
DURATION : 90 hrs	**MAX. MARKS : 100**

நோக்கங்கள்

- முதலாமாண்டு பட்ட வகுப்பு மாணவர்களுக்குத் தமிழ் மொழி இலக்கியங்களை அறிமுகம் செய்தல்.
- தற்கால இலக்கியப் போக்குகளையும் இலக்கணங்களையும் மாணவர் அறியுமாறு செய்து அவர்களின் படைப்பாற்றலைத் தூண்டுதல்.
- தமிழ் இலக்கியம் சார்ந்த போட்டித் தேர்வுகளுக்கு ஏற்ப கற்பித்தல் நடைமுறைகளை மேற்கொள்ளுதல்.

கற்றலின் பயன்கள்

இத்தாளை வெற்றிகரமாக முடித்தவுடன் மாணவர்கள்,

CO1[K1]: பாரதியார் காலந்தொட்டு தற்காலக் கவிதைகள் வரை கவிதை இலக்கியம் அறிமுகப்படுத்தப்படுவதால் அவற்றை அடையாளம் காண்பர்.

CO2[K2]: கவிதை வரலாற்றினை புரிந்து கொண்டு பிழை இல்லாமல் எழுதும் திறன் பெறுவர்.

CO3[K3]: இக்கால இலக்கிய வகைகள் மற்றும் இலக்கணம் கற்பதன் மூலம் அவற்றை தம் வாழ்நிலையோடு பொருத்திப் பார்ப்பர்.

CO4[K4]: மொழியறிவோடு சிந்தனைத்திறன் பெற்று இலக்கியம் மற்றும் இலக்கணங்களைப் பகுப்பாய்வர்.

CO5[K5]: உலகளாவிய இலக்கியங்களைக் கற்று மதிப்பீடு செய்வர்.

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[K5]	2	1	1	1	-	1	1
Weightage of the Course	10	07	02	08	02	02	03
Weighted percentage of Course Contribution to POs	2.09	1.75	0.74	2.48	1.29	1.09	1.66

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

கூறு I   **(18 hrs)**

        மரபுக்கவிதை: பெ.சுந்தரனார் - தமிழ்த் தெய்வ வணக்கம், பாரதிதாசன் - சிறுத்தையை வெளியில் வா, கவிமணி - புத்தரும் சிறுவனும், முடியரசன் - மொழி உணர்ச்சி, கண்ணதாசன் - ஆட்டனத்தி ஆதிமந்தி - ஆதிமந்திபுலம்பல், சுரதா - துறைமுகம் தொகுப்பிலிருந்து ஏதேனும் ஒருகவிதை, தமிழ் ஒளி - கடல்

கூறுII   **(18 hrs)**

        புதுக்கவிதை: அப்துல் ரகுமான் - வீட்டுக்கொருமரம் வளர்ப்போம், ஈரோடு தமிழன்பன் - சென்றியூ கவிதைகள் (ஏதேனும் ஐந்து கவிதைகள்), வைரமுத்து - பிற்சேர்க்கை, மு.மேத்தா - வாழைமரம், அறிவுமதி - வள்ளுவம் பத்து, நா முத்துக்குமார் - ஆனந்தயாழை மீட்டுகிறாய், சுகிர்தராணி - சபிக்கப்பட்ட முத்தம், இளம் பிறை - நீ எழுத மறுக்கும் எனது அழகு.

கூறு III   **(18 hrs)**

        சிறுகதைகள் : வாய்ச்சொற்கள் - ஜெயகாந்தன் (மாலைமயக்கம் தொகுப்பு), கடிதம் - புதுமைப்பித்தன், கரு - உமாமகேஸ்வரி, முள்முடி - தி.ஜானகிராமன், சிதறல்கள் - விழி.பா.இதயவேந்தன், காகிதஉறவு - சு.சமுத்திரம், வீட்டின் மூலையில் சமையல் அறை - அம்பை, (மொழிபெயர்ப்புக் கதை) ஆண்டன் செக்காவ் - நாய்க்காரச் சீமாட்டி, சந்தியா பதிப்பகம்.

கூறு IV   **(18 hrs)**

        மரபுக்கவிதை கவிதை தோற்றம் வளர்ச்சி - புதுக்கவிதை கவிதை தோற்றம் வளர்ச்சி - சிறுகதை தோற்றம் வளர்ச்சி

கூறு V   **(18 hrs)**

        மொழித்திறன் போட்டிதேர்வு: பொருள் பொதிந்த சொற்றொடர் அமைத்தல், ஒர் எழுத்து ஒருமொழி, வேற்றுமை உருபுகள், திணை, பால், எண், இடம், கலைச்சொல்லாக்கம், மொழிபெயர்ப்பு.

(குறிப்பு: அலகு 4, 5 ஆகியன போட்டித் தேர்வு நோக்கில் நடத்தப்பட வேண்டும்).

பாடநூல்கள்

1. தமிழியல் துறையினர், *தொகுப்பு நூல்,* ஸ்ரீ காளீஸ்வரி கல்லூரி (தன்னாட்சி), சிவகாசி.
2. வாசுதேவன், கா. *பன்முக நோக்கில் தமிழ் இலக்கிய வரலாறு,* தேவன் பதிப்பகம், திருச்சிராப்பள்ளி, 2017.

பார்வை நூல்கள்

1. சிற்பி. பாலசுப்பிரமணியன், *தமிழ் இலக்கிய வரலாறு,* கவிதா வெளியீடு, சென்னை.
2. தமிழண்ணல், *புதிய நோக்கில் தமிழ் இலக்கிய வரலாறு,* சோலை பதிப்பகம், மதுரை
3. பாக்கியமேரி, *வகைமை நோக்கில் தமிழ் இலக்கிய வரலாறு,* பாரி நிலையம், சென்னை.

வலைப்பதிவுகள் **(Web Sources)**

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   http://www.tamilheritage.org
2. Tamil virtual University Library- www.tamilvu.org/ library
   http://www.virtualvu.org/library
3. Project Madurai - www.projectmadurai.org.

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4. Chennai Library- www.chennailibrary.com http://www.chennailibrary.com
5. Tamil Universal Digital Library- www.ulib.prg http://www.ulib.prg
6. Tamil E-Books Downloads- tamilebooksdownloads. blogspot.com
7. Tamil Books on line- books.tamil cube.com
8. Catalogue of the Tamil books in the Library of British Congress archive.org
9. Tamil novels on line - books.tamilcube.com

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF ENGLISH
UG Programme – B.A./ B.COM/B.B.A./ B.SC./BCA
SEMESTER – I
GENERAL ENGLISH – I (23UENL11)
(From 2023–2024 Batch onwards)

HOURS/WEEK : 6 (L-5, T-1)	**INT. MARKS: 25**
CREDITS : 3	**EXT. MARKS: 75**
DURATION : 90 hrs	**MAX. MARKS: 100**

Course Objectives
- To enable learners to acquire the linguistic competence necessarily required in various life situations.
- To help them understand the written text and able to use skimming, scanning skills
- To assist them in creative thinking abilities.
- To enable them become better readers and writers.
- To assist them in developing correct reading habits, silently, extensively and intensively.

Course Outcomes (CO)
On successful completion of the course, the learners will be able to
CO1[K1]: identify the use of the language skills i.e. Reading, Listening, Speaking and Writing.
CO2[K2]: demonstrate communicative skills by articulating simple dialogues and instructions.
CO3[K3]: apply knowledge of word power and grammar in framing correct sentences
CO4[K4]: analyze prose, poetry and short stories to develop language skills through literature.
CO5[K5]: assess the linguistic competence that enables them, in the future, to present their views in various social, academic and employment situations.

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[K5]	2	1	1	1	-	1	1
Weightage of the course	10	07	02	08	02	02	03
Weighted percentage of Course Contribution to POs	2.09	1.75	0.74	2.48	1.29	1.09	1.66

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

UNIT I – PROSE (18 hrs)

Jerome K Jerome	–	Uncle Podger Hangs a Picture
David Sedaris	–	Us and Them -From Dress Your Family in Corduroy and Denim
Harish Bhat	–	JRD

UNIT II – POETRY (18 hrs)

William Ralph Emerson	–	A Nation's Strength
Paul Laurence Dunbar	–	The Sparrow
Subramania Bharati	–	A Patch of Land
Chinua Achebe	–	Love Cycle

UNIT III – SHORT STORIES (18 hrs)

Bhabani Bhattacharya	–	The Faltering Pendulum
R.K. Laxman	–	The Gold Frame
Sudha Murthy	–	How I Taught My Grandmother to Read

UNIT IV – LANGUAGE COMPETENCY (18 hrs)

Vocabulary: Synonyms, Antonyms, Word Formation
Appropriate use of Articles and Parts of speech
Error Correction

UNIT V – ENGLISH FOR WORKPLACE (18 hrs)

Self-Introduction, Greetings
Introducing others
Listening for General and Specific Information
Listening to and Giving Instructions/Directions

TEXTBOOKS
1. Bhattacharya, Bhabani. *Steel Hawk and other stories*. New Delhi: Sahitya Akademi, 1967.
2. Sudha, Murthy. *How I Taught My Grandmother to Read and other Stories*, India: Penguin Books, 2004.

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1. Kumar, Vijay T & K Durga Bhavani. *English in use -A Textbook for College Students.* YL Srinivas
2. Swan, Michael. *Practical English Usage* - 4th Edition. New York: Oxford University Press, 2016.
3. Shepherd Margaret & Sharon Hogan. Penny Carter (Illustrator). *The Art of Civilized Conversation: A Guide to Expressing Yourself with Style and Grace.* Now York: Broadway Books, 2005.

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2. https://poets.org/poem/sparrow-0
3. https://poets.org/poem/nations-strength
4. https://www.best-poems.net/chinua-achebe/love-cycle.html
5. https://www.tata.com/newsroom/heritage/coffee-tea-jrd-tata-stories
6. https://legacy.npr.org/programs/morning/features/2004/jun/sedaris/usandthem.html
7. http://rosyhunt.blogspot.com/2013/01/uncle-podger-hangs-picture.html
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SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF COMPUTER APPLICATIONS
UG Programme – Bachelor of Computer Applications
SEMESTER – I
CORE COURSE – I: PYTHON PROGRAMMING (23UCAC11)
(From 2023–2024 Batch onwards)

HOURS/WEEK : 5	**INT. MARKS : 25**
CREDITS : 5	**EXT. MARKS : 75**
DURATION : 75 hrs	**MAX. MARKS: 100**

Course Objectives

• To make students understand the concepts of Python programming.
• To apply the OOPs concept in Python programming.
• To impart knowledge on demand and supply concepts.
• To make the students learn best practices in Python programming.
• To know the concepts of file manipulation.

Course Outcomes (CO)

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

CO1[K1]: describe the basic concepts of python such as array, function, list and file handling

CO2[K2]: explain the program development to implement iteration, array, string, methods of file and tuples

CO3[K3]: apply the user defined and built in concepts of python

CO4[K4]: examine the working principles of python modules, functions and dictionaries

CO5[K5]: justify the real time concepts by developing the program using python

CO–PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	3	3	1	1	1	1	-
CO2[K2]	2	2	1	2	1	1	-
CO3[K3]	2	3	2	2	-	-	-
CO4[K4]	2	2	2	1	2	2	-
CO5[K5]	2	1	2	-	2	1	-
Weightage of the course	11	11	8	6	6	5	0
Weighted percentage of Course contribution to POs	2.3	2.76	2.97	1.86	3.87	2.72	0

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

UNIT I   **(15 hrs)**

Basics of Python Programming: History of Python – Features of Python – Literal – Constants – Variables – Identifiers – Keywords – Built–in Data Types –Output Statements – Input Statements – Comments – Indentation – Operators –Expressions – Type Conversions. **Python Arrays:** Defining and Processing Arrays – Array Methods.

UNIT II   **(15 hrs)**

Control Statements: Selection/Conditional Branching statements: if – if–else – nested if and if–elif–else Statements. **Iterative Statements:** While Loop – For Loop – Else Suite in Loop and Nested Loops. **Jump Statements:** Break – Continue and Pass Statements.

UNIT III   **(15 hrs)**

Functions: Function Definition – Function Call – Variable Scope and its Lifetime – Return Statement. **Function Arguments:** Required Arguments – Keyword Arguments – Default Arguments – Variable Length Arguments – Recursion. **Python Strings:** String Operations – Immutable Strings – Built–in String Methods and Functions – String Comparison. **Modules:** Import Statement – The Python module – dir() Function – Modules and Namespace – Defining our Own Modules.

UNIT IV   **(15 hrs)**

Lists: Creating a List – Access Values in List – Updating Values in Lists –Nested Lists – Basic List Operations – List Methods. **Tuples:** Creating, Accessing, Updating and Deleting Elements in a Tuple – Nested Tuples – Difference between Lists and Tuples. **Dictionaries:** Creating – Accessing – Updating – Deleting Elements in a Dictionary – Dictionary Functions and Methods – Difference between Lists and Dictionaries.

UNIT V   **(15 hrs)**

Python File Handling: Types of Files in Python – Opening and Closing Files –**Reading and Writing files:** write() and writelines() Methods – append() Method – read() and readlines() Methods – with Keyword – Splitting Words – File Methods – File Positions– Renaming and Deleting Files.

TEXTBOOKS
1. Reema Thareja. *Python Programming using problem solving approach*. Oxford University Press, 1st Edition, 2017.
2. Dr. R. Nageswara Rao. *Core Python Programming*. Dream tech Publishers, 1st Edition, 2017.

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1. VamsiKurama. *Python Programming: A Modern Approach*. Pearson Education.
2. Mark Lutz. *Learning Python.*Orielly.

3. Adam Stewarts. *Python Programming*. Online.
4. Fabio Nelli. *Python Data Analytics*. APress.
5. Kenneth A. Lambert. *Fundamentals of Python – First Programs.* CENGAGE Publication.

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2. https://www.guru99.com/python–tutorials.html
3. https://www.w3schools.com/python/python_intro.asp
4. https://www.geeksforgeeks.org/python–programming–language/
5. https://en.wikipedia.org/wiki/Python

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF COMPUTER APPLICATIONS
UG Programme – Bachelor of Computer Applications
SEMESTER – I
CORE COURSE – II: PRACTICAL: PYTHON (23UCAC1P)
(From 2023–2024 Batch onwards)

HOURS/WEEK: 5	**INT. MARKS : 25**
CREDITS : 5	**EXT. MARKS : 75**
DURATION : 75 hrs	**MAX. MARKS: 100**

Course Objectives

• To design and program Python applications.
• To create loops and decision statements in Python.
• To work with functions and pass arguments in Python.
• To build and package Python modules for reusability.
• To read and write files in Python.

Course Outcomes (CO)

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

CO1[K1]: describe the understanding of syntax and semantics of python

CO2[K2]: illustrate the problem and solve using python programming techniques.

CO3[K3]: identify suitable programming constructs for problem solving.

CO4[K4]: analyze various concepts of python language to solve the problem in an efficient way.

CO5[K5]: develop a python program for a real–time problem and evaluate the execution.

CO–PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	2	1	1	1	-	-	-
CO2[K2]	2	2	2	1	-	1	-
CO3[K3]	3	2	1	2	-	2	1
CO4[K4]	3	2	2	2	1	-	-
CO5[K5]	2	2	1	3	2	1	1
Weightage of the course	12	9	7	9	3	4	2
Weighted percentage of Course contribution to POs	2.51	2.26	2.6	2.79	1.94	2.17	1.1

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

1. Program using variables, constants, I/O statements in Python.
2. Program using Operators in Python.
3. Program using Conditional Statements.
4. Program using Loops.
5. Program using Jump Statements.
6. Program using Functions.
7. Program using Recursion.
8. Program using Arrays.
9. Program using Strings.
10. Program using Modules.
11. Program using Lists.
12. Program using Tuples.
13. Program using Dictionaries.
14. Program for File Handling.

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF MATHEMATICS
UG Programme – BACHELOR OF COMPUTER APPLICATIONS
SEMESTER – I
ELECTIVE COURSE GENERIC / DISCIPLINE SPECIFIC – I: DISCRETE MATHEMATICS
– I (23UCAA11)
(From 2023–2024 Batch onwards)

HOURS/WEEK: 4	**INT. MARKS : 25**
CREDITS : 3	**EXT.MARKS : 75**
DURATION : 60 hrs	**MAX. MARKS: 100**

Course Objectives
- To understand the fundamental concepts of discrete mathematics.
- To develop logical thinking skills and problem-solving skills.

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, relations and functions, matrix operations, logic statements, various graphs

CO3[K3]: compute various operations on sets, relations, functions, matrices, graphs and truth values of logic statements

CO4[K4]: classify the types of relations, functions, matrices, logic statements and graphs

CO5[K5]: assess the equivalency of relations, inevitability of functions, tautological implications and equivalence of logic formulae, the method of solving graph optimization problems.

CO-PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	2	2	-	-	-	-	-
CO2[K2]	2	2	1	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	10	13	07	04	-	04	03
Weighted percentage of Course contribution to POs	2.09	3.26	2.6	1.24	0	2.17	1.66

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.

Textbook 1: Chapter I: Section 1-7;
    Chapter II: Section 1-5;
    Chapter III: Section 1-4

UNIT II **(12 hrs)**

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

Textbook 1: Chapter VI: Section 1-4.

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.

Textbook 1: Chapter IX: Section 1-9.

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 Optimization Problems.

Textbook 2: Chapter I: Section 1.1-1.9.

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.

Textbook 2: Chapter 2: Section 2.1-2.16.

TEXTBOOKS
1. M .K. Venkataraman, N. Sridharan and N. Chandra sekaran. *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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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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2. https://courses.lumenlearning.com/math4libarts/chapter/cardinality/

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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

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF COMPUTER APPLICATIONS
UG Programme – Bachelor of Computer Applications
SEMESTER – I
SKILL ENHANCEMENT COURSE – I: FOUNDATION: STRUCTURED PROGRAMMING
LANGUAGE IN C LAB (23UCAS1P)
(From 2023–2024 Batch onwards)

HOURS/WEEK: 2	**INT. MARKS : 25**
CREDITS : 2	**EXT. MARKS : 75**
DURATION : 30 hrs	**MAX. MARKS: 100**

Course Objectives
- To familiarize the students with the programming basics and the fundamentals of C, data types in C, mathematical and logical operations
- To understand the concept using if statements and loops
- To cover the concept of arrays
- To cover the concept of functions
- To understand the concept of implementing pointers

Course Outcomes (CO)
On successful completion of the course, the learners will be able to
CO1[K1]: state the structure of C program with the syntax and semantics
CO2[K2]: define the programming principles in C (data types, operators, branching and looping, arrays, functions, structures, pointers and files)
CO3[K3]: apply the concept of programming principles based on real–time problems
CO4[K4]: analyze the various methods of solving a problem using built–in and user defined concepts
CO5[K5]: evaluate the code, debug and test the programs

CO–PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	3	2	2	2	-	1	-
CO2[K2]	2	2	2	1	-	-	1
CO3[K3]	3	2	2	2	1	1	-
CO4[K4]	1	2	2	1	1	-	1
CO5[K5]	2	1	1	1	1	1	1
Weightage of the course	11	9	9	7	3	3	3
Weighted percentage of Course contribution to POs	2.3	2.26	3.35	2.17	1.94	1.63	1.66

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

1. Perform Arithmetic Operations.
2. Simple Interest Calculation.
3. Temperature Conversions.
4. Quadratic Equations.
5. Positive or Negative Number Checking.
6. Matrix Addition.
7. Matrix Multiplication.
8. Vowels Checking.
9. String Manipulations.
10. Fibonacci Series Generations.
11. Sorting of N Numbers using Array.
12. Sum of Digits.
13. Sort the Numbers Using Pointer.

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF COMPUTER APPLICATIONS
UG Programme – Bachelor of Computer Applications
SEMESTER – I
SKILL ENHANCEMENT COURSE – II: NON MAJOR ELECTIVE COURSE:
FUNDAMENTALS OF INFORMATION TECHNOLOGY (23UCAN11)
(From 2023–2024 Batch onwards)

HOURS/WEEK: 2	**INT. MARKS : 25**
CREDITS : 2	**EXT. MARKS : 75**
DURATION : 30 hrs	**MAX. MARKS: 100**

Course Objectives

- To understand basic concepts and terminology of information technology.
- To have a basic understanding of personal computers and their operation.
- To be able to identify data storage and its usage.
- To get great knowledge of software and its functionalities.
- To understand about operating system and their uses.

Course Outcomes (CO)

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

CO1[K1]: recall the fundamentals of computer, office automation packages and internet

CO2[K2]: develop an organizational structure for the hardware devices and software packages

CO3[K3]: apply the concept of storing, manipulating and presenting the data

CO4[K4]: analyze the various methodologies to present the data and to implement the internet connectivity

CO5[K5]: evaluate the performance of hardware, software and e-commerce

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[K5]	1	2	-	2	-	1	1
Weightage of the course	9	5	0	8	0	5	5
Weighted percentage of Course contribution to POs	1.88	1.25	0	2.48	0	2.72	2.76

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

UNIT I   **(6 hrs)**
      Introduction to Computers: Generation of Computer – Data and Information – Components of Computer – Software – Hardware – Input Devices –Output Devices – Types of Operating System.

UNIT II   **(6 hrs)**
      MS Word: Introduction – Elements of Window – Files, Folders and Directories. **Text Manipulating:** Cut – Copy – Paste – Drag and Drop. **Text Formatting: Font:** Style – Size – Face – Colors (Both Foreground and Background) – Alignment – Bullets and Numbering – Header and Footer – Watermark – Inserting Objects (Images, Other Application Document) – Table Creation – Mail Merge.

UNIT III   **(6 hrs)**
      Ms Excel: Introduction – Inserting Rows and Columns – Sizing Rows and Columns – Implementing Formulas – Generating Series – Functions in Excel – Creation of Chart – Inserting Objects – Filter – Sorting – Inserting Worksheet.

UNIT IV   **(6 hrs)**
      MS Power Point: Introduction – Slides Manipulation (Inserting New, Copy, Paste, Delete and Duplicate Slides) – Slide Show – Types of Views – Types of Animations – Inserting Objects – Implementing Multimedia (Video and Audio) – Templates (Built–in and User–Defined).

UNIT V   **(6 hrs)**
      Internet: Introduction to Internet and Intranet – Services of Internet – Domain Name – URL – Browser – Types of Browsers – Search Engine – E-Mail – Basic Components of E-Mail – How to Send Group Mail. **E-Commerce:** Digital Signature – Digital Currency – Online Shopping and Transaction.

TEXTBOOKS
1. Anoop Mathew, S.Kavitha Murugeshan. *Fundamentals of Information Technology*. Majestic Books, 2009.
2. Alexis Leon, Mathews Leon. *Fundamentals of Information Technology*. 2nd Edition.
3. S. K Bansal. *Fundamental of Information Technology.*

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1. Bhardwaj Sushil Puneet Kumar. *Fundamental of Information Technology*.
2. GG WILKINSON. *Fundamentals of Information Technology.* Wiley–Blackwell.
3. A Ravichandran. *Fundamentals of Information Technology.* Khanna Book Publishing.

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2. https://www.tutorialsmate.com/2020/04/computer–fundamentals–tutorial.html
3. https://www.javatpoint.com/computer–fundamentals–tutorial
4. https://www.tutorialspoint.com/computer_fundamentals/index.htm
5. https://www.nios.ac.in/media/documents/sec229new/Lesson1.pdf

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF TAMIL
UG PROGRAMME – B.A., B.Sc., B.Com., BBA., BCA.,
SEMESTER – II
பொதுத்தமிழ் – II (23UTAG21)
(From 2023-2024 Batch onwards)

HOURS / WEEK: 6	**INT. MARKS : 25**
CREDITS : 3	**EXT. MARKS : 75**
DURATION : 90 hrs	**MAX. MARKS: 100**

நோக்கங்கள்

* சமய இலக்கியங்களையும் சிற்றிலக்கியங்களையும் மாணவர்களுக்கு அறிமுகப்படுத்துதல்
* மொழித்திறனையும் சிறுகதை இலக்கிய வடிவத்தையும் மாணவர்களுக்கு உணர்த்துதல்.

கற்றலின் பயன்கள்

இத்தாளை வெற்றிகரமாக முடித்தவுடன் மாணவர்கள்,

CO1[K1]: பக்தி இலக்கியங்களைக் கற்பதன் மூலம் பக்தி நெறியினையும், சமய நல்லிணக்கத்தையும் அறிவர்.

CO2[K2]: சமயப்பாடல்கள் மற்றும் சிற்றிலக்கியங்களின் அமைப்பினையும், நோக்கத்தினையும் தெளிவாகக் கூறுவர்.

CO3[K3]: தமிழில் உள்ள பக்தி இலக்கியம் மற்றும் சிற்றிலக்கியங்களின் பொருண்மைகளுடன் இலக்கணத் தெளிவையும் அடைவர்.

CO4[K4]: தமிழ்ச் சமூகப் பண்பாட்டு வரலாற்றினை இலக்கியங்கள் வாயிலாக அறிந்து கொண்டு பாகுபடுத்துவர்.

CO5[K5]: போட்டித் தேர்வுகளில் வெற்றி பெறுவதற்குத் தமிழ்ப் பாடத்தினைப் பயன்கொள்ளும் வகையில் ஏற்ற பயிற்சி பெற்று மதிப்பீடு 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	2	-	1	1	-	1
CO3[K3]	2	2	-	2	-	1	-
CO4[K4]	2	2	1	2	1	-	1
CO5[K5]	2	1	1	2	-	1	1
Weightage of the Course	10	08	02	08	02	02	03
Weighted percentage of Course Contribution to POs	2.09	2.01	0.74	2.48	1.29	1.09	1.66

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

கூறு I   **(18 hrs)**

பக்தி இலக்கியம்: திருநாவுக்கரசர் தேவாரம் - நாமார்க்கும் குடியெல்லாம் எனத் தொடங்கும் பதிகம் (10 பாடல்கள்), ஆண்டாள் - திருப்பாவை (முதல் 10 பாசுரம்)

கூறு II   **(18 hrs)**

வள்ளலார் - அருள் விளக்கமாலை (முதல் 10 பாடல்),எச்.ஏ.கிருட்டிணப் பிள்ளை - இரட்சணியமனோகரம் - பால்யபிரார்த்தனை, குணங்குடி மஸ்தான் சாகிபு - பராபரக்கண்ணி (முதல் 10 கண்ணி)

கூறு III   **(18 hrs)**

சிற்றிலக்கியங்கள்: தமிழ்விடு தூது (முதல் 20 கண்ணி), திருக்குற்றாலக் குறவஞ்சி - குறத்தி மலைவளம் கூறுதல், முக்கூடல் பள்ளு - நாட்டு வளம்

கூறு IV   **(18 hrs)**

பாடம் தழுவிய இலக்கிய வரலாறு (பல்லவர் காலம், நாயக்கர் காலம்)

கூறு V   **(18 hrs)**

மொழித்திறன் போட்டித்தேர்வுதிறன்: தொடர் வகைகள், மரபுத்தொடர், பழமொழிகள், பிறமொழிச் சொற்களைக் களைதல், வழுச்சொற்கள் நீக்குதல், இலக்கணக் குறிப்பு அறிதல்.

(குறிப்பு: அலகு 4, 5 ஆகியன போட்டித் தேர்வு நோக்கில் நடத்தப் பட வேண்டும்).

பாடநூல்கள்

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

2. வாசுதேவன், கா. *பன்முக நோக்கில் தமிழ் இலக்கிய வரலாறு,* தேவன் பதிப்பகம், திருச்சிராப்பள்ளி, 2017.

பார்வை நூல்கள்

1. சிற்பி. பாலசுப்பிரமணியன், *தமிழ் இலக்கிய வரலாறு,* கவிதா வெளியீடு, சென்னை.

2. தமிழண்ணல், *புதிய நோக்கில் தமிழ் இலக்கிய வரலாறு,* சோலை பதிப்பகம், மதுரை

3. பாக்கியமேரி, *வகைமை நோக்கில் தமிழ் இலக்கிய வரலாறு,* பாரி நிலையம், சென்னை.

வலைப்பதிவுகள் (Web Sources)

1. Tamil Heritage Foundation- www.tamilheritage.org
   http://www.tamilheritage.org
2. Tamil virtual University Library- www.tamilvu.org/ library
   http://www.virtualvu.org/library
3. Project Madurai - www.projectmadurai.org.
4. Chennai Library- www.chennailibrary.com http://www.chennailibrary.com
5. Tamil Universal Digital Library- www.ulib.prg http://www.ulib.prg
6. Tamil E-Books Downloads- tamilebooksdownloads. blogspot.com
7. Tamil Books on line- books.tamil cube.com
8. Catalogue of the Tamil books in the Library of British Congress archive.org
   Tamil novels on line - books.tamilcube.com

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF ENGLISH
UG Programme – B.A./ B.COM/B.B.A./ B.SC./BCA
SEMESTER – II
GENERAL ENGLISH – II (23UENL21)
(From 2023–2024 Batch onwards)

HOURS/WEEK: 6 (L-5, T-1)	**INT. MARKS : 25**
CREDITS : 3	**EXT. MARKS : 75**
DURATION : 90 hrs	**MAX. MARKS: 100**

Course Objectives
- To introduce learners to the essential skills of communication in English.
- To enable them use these skills effectively in academic and non-academic contexts.
- To help them identify and eliminate common mistakes in writing and speaking.
- To enable them use various business communication strategies and to use advanced vocabulary.
- To familiarize them in writing descriptive essays and respond to arguments orally and in writing.

Course Outcomes (CO)
On successful completion of the course, the learners will be able to
CO1 [K1]: identify appropriate literary terms such as diction, tone, imagery, figures of speech, motif etc.,
CO2 [K2]: define verbs, tenses and concord and its role in speaking and writing effectively.
CO3 [K3]: apply the knowledge of language competency at workplace and day-to-day life
CO4 [K4]: analyze prose, poetry and short stories to develop language skills through literature.
CO5 [K6]: construct grammatically correct and meaningful sentences by choosing apt words.

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 thenb course	10	08	02	08	02	02	03
Weighted percentage of Course contribution to POs	**2.09**	**2.01**	**0.74**	**2.48**	**1.29**	**1.09**	**1.66**

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

UNIT I – PROSE   (18 hrs)

W.R. Inge	-	The Spoon-Fed Age
Dale Carnegie	-	If You Are Wrong. Admit it
Shashi Tharoor	-	Kindly Adjust to our English

UNIT II – POETRY   (18 hrs)

Alfred Lord Tennyson	-	The Flower
Nissim Ezekiel	-	Very Indian Poem in Indian English
Maya Angelou	-	Still I Rise
Dr. Gieve Patel	-	On Killing a Tree

UNIT III – FICTION   (18 hrs)

| Paulo Coelho | - | The Alchemist |

UNIT IV – LANGUAGE COMPETENCY   (18 hrs)

Homonyms, Homophones, Homographs, Portmanteau words
Verbs and Tenses, Subject Verb Agreement, Error correction

UNIT V – ENGLISH IN THE WORKPLACE   (18 hrs)

Reading for General and Specific information [charts, tables, schedules, graphs etc]
Reading news and weather reports
Writing paragraphs
Taking and making notes

TEXTBOOKS
1. Coelho, Paulo. *The Alchemist.* New York: Harper, 2005.
2. Pillai, Radhakrishna. *Emerald English Grammar and Composition.* Chennai: Emerald Publishers,2016.

REFERENCES
Books
1. Hewings, Martin. *Advanced English Grammar.* Cambridge University Press, 2000.
2. SP Bakshi, Richa Sharma. *Descriptive English*. India: Arihant Publications Ltd, 2019.
3. Sheena Cameron, Louise Dempsey. *The Reading Book: A Complete Guide to Teaching Reading*. London: S & L. Publishing, 2019.
4. Sherman, Barbara. *Skimming and Scanning Techniques.* Virginia: Liberty University Press, 2014.
5. Chambers, Phil. *Brilliant Speed Reading: Whatever you need to read, However You want to Read it-Twice as Quickly*, India: Pearson, 2013.
6. Coelho, Paulo. *The Archer*. New York: Penguin Viking, 2020.

Web Sources

1. http://econtent.in/pacc.in/admin/contents/40_%20_2020103001102714.pdf
2. https://www.poetryfoundation.org/poems/46446/still-i-rise
3. https://www.poemhunter.com/poem/the-flower-2/
4. https://www.poemhunter.com/poem/on-killing-a-tree/
5. https://www.tbr.fun/if-youre-wrong-admit-it/
6. https://www.theweek.in/columns/shashi-tharoor/2018/05/25/kindly-adjust-to-our-english.html?fbclid=IwAR3IhtdXqvuV4ySECn9S7SA6HmCEYISyd1QHd3BlwKgiNKKwdkeSg3qWp-U/
7. https://docplayer.net/217945876-The-spoon-fed-age-1-by-the-very-reverend-w-r-inge.html
8. https://www.youtube.com/watch?v=lxBYpmxjeDU

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF COMPUTER APPLICATIONS
UG Programme – Bachelor of Computer Applications
SEMESTER – II
CORE COURSE – III: OBJECT ORIENTED PROGRAMMING CONCEPTS USING C++
(23UCAC21)
(From 2023–2024 Batch onwards)

HOURS/WEEK: 5	**INT. MARKS : 25**
CREDITS : 5	**EXT. MARKS : 75**
DURATION : 75 hrs	**MAX. MARKS: 100**

Course Objectives

- To describe the procedural and object oriented paradigm with concepts of streams, classes, functions, data and objects
- To understand the dynamic memory management techniques using pointers
- To classify inheritance with the understanding of early and late binding, usage of exception handling, generic programming
- To demonstrate the use of various OOPs concepts with the help of programs

Course Outcomes (CO)

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

CO1[K1]: explain the features of object oriented paradigm and constructs
CO2[K2]: write appropriate classes and overloading the operators for the given problem
CO3[K3]: implement the concept of inheritance, pointers and files
CO4[K4]: demonstrate the various types of control structures, inheritance, pointers and files
CO5[K5]: design programs for real time problem using concepts of OOPs

CO–PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	3	3	1	1	1	1	-
CO2[K2]	2	2	1	2	1	1	-
CO3[K3]	2	3	2	2	-	-	-
CO4[K4]	2	2	2	1	2	2	-
CO5[K5]	2	1	2	-	2	1	1
Weightage of the course	11	11	8	6	6	5	1
Weighted percentage of Course contribution to POs	2.3	2.76	2.97	1.86	3.87	2.72	0.55

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

UNIT I   **(15 hrs)**

Introduction to C++: Key Concepts of Object Oriented Programming – Advantages – Object Oriented Languages – I/O in C++ – C++ Declarations. **Control Structures: Decision Making and Statements:** If-else – Jump – Goto – Break – Continue – Switch Case Statements. **Loops in C++:** For – While – do – Functions in C++ – Inline Functions – Function Overloading.

UNIT II   **(15 hrs)**

Classes and Objects: Declaring Objects – Defining Member Functions – Static Member Variables and Functions – Array of Objects – Friend Functions – Overloading Member Functions – Bit Fields and Classes – Constructor and Destructor with Static Members

UNIT III   **(15 hrs)**

Operator Overloading: Overloading Unary, Binary Operators – Overloading Friend Functions – Type Conversion. **Inheritance:** Types of Inheritance – Single – Multilevel – Multiple – Hierarchal – Hybrid – Multi Path Inheritance – Virtual Base Classes – Abstract Classes.

UNIT IV   **(15 hrs)**

Pointers: Declaration – Pointer to Class , Object – This Pointer – Pointers to Derived Classes and Base Classes – Arrays – Characteristics – Array of Classes – Memory Models – New and Delete Operators – Dynamic Object – Binding, Polymorphism and Virtual Functions.

UNIT V   **(15 hrs)**

Files: File Stream Classes – File Modes – Sequential Read / Write Operations – Binary and ASCII Files – Random Access Operation – Templates – Exception Handling – String – Declaring and Initializing String Objects – String Attributes – Miscellaneous Functions.

TEXTBOOK
1. E. Balagurusamy. *Object–Oriented Programming with C++*. TMH, 7th Edition, 2013.

REFERENCES
Books

1. Ashok N Kamthane. *Object–Oriented Programming with ANSI and Turbo C++.* Pearson Education, 2003.
2. Maria Litvin & Gray Litvin. *C++ for you.* Vikas publication, 2002.

Web Sources
1. https://alison.com/course/introduction–to–c–plus–plus–programming

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF COMPUTER APPLICATIONS
UG Programme – Bachelor of Computer Applications
SEMESTER – II
CORE COURSE – IV: PRACTICAL: C++ PROGRAMMING (23UCAC2P)
(From 2023–2024 Batch onwards)

HOURS/WEEK: 5	**INT. MARKS : 25**
CREDITS : 5	**EXT. MARKS : 75**
DURATION : 75 hrs	**MAX. MARKS: 100**

Course Objectives
- To describe the procedural and object–oriented paradigm with concepts of streams, classes, functions, data and objects
- To understand dynamic memory management techniques using pointers, constructors, destructors, etc
- To classify inheritance with the understanding of early and late binding, usage of exception handling, generic programming
- To demonstrate the use of various OOPs concepts with the help of programs

Course Outcomes (CO)
On successful completion of the course, the learners will be able to
CO1[K1]: remember the syntax and semantics to create a simple C++ programs
CO2[K2]: illustrate the programs for designed algorithm with simple problems using classes and objects
CO3[K3]: apply the programming principles in array of objects, constructors and destructors
CO4[K4]: analyze the various types of inheritance for solving a problem
CO5[K5]: evaluate code, debug and test the programs

CO–PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	2	3	1	1	-	-	-
CO2[K2]	2	2	2	1	-	1	-
CO3[K3]	3	3	3	1	-	1	-
CO4[K4]	3	2	3	2	1	-	1
CO5[K5]	2	1	1	3	2	1	1
Weightage of the course	12	11	10	8	3	3	2
Weighted percentage of Course contribution to POs	2.51	2.76	3.72	2.48	1.94	1.63	1.1

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

1. Write a C++ program to demonstrate function overloading, Default Arguments and Inline Function.
2. Write a C++ program to demonstrate Class and Objects.
3. Write a C++ program to demonstrate the concept of Passing Objects to Functions.
4. Write a C++ program to demonstrate the Friend Functions.
5. Write a C++ program to demonstrate the concept of Passing Objects to Functions.
6. Write a C++ program to demonstrate Constructor and Destructor.
7. Write a C++ program to demonstrate Unary Operator Overloading.
8. Write a C++ program to demonstrate Binary Operator Overloading.
9. Write a C++ program to demonstrate:
   - Single Inheritance
   - Multilevel Inheritance
   - Multiple Inheritance
   - Hierarchical Inheritance
   - Hybrid Inheritance
10. Write a C++ program to demonstrate Virtual Functions.
11. Write a C++ program to manipulate a Text File.
12. Write a C++ program to perform Sequential I/O Operations on a file.
13. Write a C++ program to find the Biggest Number using Command Line Arguments.
14. Write a C++ program to demonstrate Class Template.
15. Write a C++ program to demonstrate Function Template.
16. Write a C++ program to demonstrate Exception Handling.

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF MATHEMATICS
UG Programme – BACHELOR OF COMPUTER APPLICATIONS
SEMESTER – II
ELECTIVE COURSE GENERIC/ DISCIPLINE SPECIFIC – II: OPTIMIZATION
TECHNIQUES (23UCAA21)
(From 2023-2024 Batch onwards)

HOURS/WEEK: 4 (L-3, T-1)	**INT. MARKS : 25**
CREDITS : 3	**EXT. MARKS : 75**
DURATION : 60 hrs	**MAX. MARKS: 100**

Course Objectives
- To study about the formulation of Linear Programming problem and finding its solution using graphical method and simplex method.
- To study about Assignment and Transportation problem.

Course Outcomes (CO)
On successful completion of the course, the learners will be able to

CO1[K1]: state the basic terminologies of linear programming problem, transportation problem, assignment problem

CO2[K2]: explain the methods of solving linear programming problem, transportation problem, assignment problem

CO3[K3]: find optimal solution of linear programming problem, transportation problem, assignment problem

CO4[K4]: examine the optimality of solutions of linear programming problem, transportation problem, assignment problem

CO5[K5]: determine the appropriate method of finding the optimal solution of linear programming problem, transportation problem, assignment problem

CO-PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	2	1	1	1	-	1	1
CO2[K2]	2	2	1	2	-	1	1
CO3[K3]	2	3	2	1	-	1	1
CO4[K4]	2	3	2	1	-	2	1
CO5[K5]	2	2	2	1	-	2	1
Weightage of the course	10	11	08	06	-	07	05
Weighted percentage of Course contribution to POs	2.09	2.76	2.97	1.86	0	3.8	2.76

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

UNIT I   **(12 hrs)**

Linear Programming Problem – Mathematical Formulation: Introduction – Linear Programming Problem – Mathematical Formulation of the Problem – Illustration on Mathematical Formulation of LPPs. Linear Programming Problem – Graphical Solution and Extension: Introduction – Graphical Solution Method – Some Exceptional cases.

Chapter 2: Section 2.1 – 2.4 & Chapter 3: Section 3.1 – 3.3

UNIT II   **(12 hrs)**

Linear Programming Problem – Simplex Method: Introduction – The Computational Procedure – Use of Artificial Variables.

Chapter 4: Section 4.1, 4.3, 4.4

UNIT III   **(12 hrs)**

Duality in Linear Programming Problem: Introduction – General Primal Dual Pair – Formulating a Dual Problem – Primal-Dual Pair in Matrix Form – Duality and Simplex Method.

Chapter 5: Section 5.1 - 5.4, 5.7

UNIT IV   **(12 hrs)**

Transportation Problem: Introduction – LP Formulation of the Transportation Problem – Existence of Solution in T.P – Duality in Transportation Problem – The Transportation Table – Loops in Transportation Table – Triangular Basis in a T.P – Solution of a Transportation Problem – Finding an Initial Basic Feasible Solution – Test for Optimality – Economic Interpretation of u_j's and v_j's – Degeneracy in Transportation Problem – Transportation Algorithm (MODI Method) – Some Exceptional Cases.

Chapter 10: Section 10.1 – 10.13, 10.15

UNIT V   **(12 hrs)**

Assignment Problem: Introduction – Mathematical Formulation of the Problem – Solution Methods of Assignment Problem – Special Cases in Assignment Problems – The Travelling Salesman Problem.

Chapter 11: Section 11.1 – 11.4, 11.7

TEXTBOOK
 1. Kanti Swarup, Gupta P.K. and Man Mohan. *Operations Research.* New Delhi: Sultan Chand and Sons, Sixteenth Edition, 2012.

REFERENCES
Books
1. Premkumar Gupta, Er. and Kira, D.S. *Problems in Operations Research.* NewDelhi: S.Chand and Company Ltd, 2012.
2. Pannerselvam, R. *Operations Research.* New Delhi: Prentice Hall of India Private Limited, Second Edition, 2006.

3. Kapoor, V.K. *Operations Research*. New Delhi: Sultan Chand & Sons Educational Publishers, 2000.
4. Kalavathy, S. *Numerical Methods.* Chennai: Vijay Nicole Imprints Private Limited, 2004.
5. Kandasamy, P. and thilagavathy, K. *Calculus of finite differences and Numerical Analysis*. New Delhi: S.Chand and Company Ltd., First Edition, 2003.

Web Sources
1. https://www.researchgate.net/publication/313880623_Introduction_to_Operatio ns Research_Theory_and_Applications/link/5a7931ff0f7e9b41dbd44db2/ download
2. https://www.youtube.com/watch?v=a2QgdDk4Xjw
3. https://theengineeringmaths.com/wp-content/uploads/2017/11/num-solutions.pdf
4. https://www.lkouniv.ac.in/site/writereaddata/siteContent/202004032250 571912siddharth_bhatt_engg_Interpolation.pdf
5. https://theengineeringmaths.com/wp-content/uploads/2017/11/interpolation-web.pdf

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF COMPUTER APPLICATIONS
UG Programme – Bachelor of Computer Applications
SEMESTER – II
SKILL ENHANCEMENT COURSE – III: OFFICE AUTOMATION LAB (23UCAS2P)
(From 2023–2024 Batch onwards)

HOURS/WEEK: 2	**INT. MARKS : 25**
CREDITS : 2	**EXT. MARKS : 75**
DURATION : 30 hrs	**MAX. MARKS: 100**

Course Objectives
- To understand the basics of computer systems and its components.
- To understand and apply the basic concepts of a word processing package.
- To understand and apply the basic concepts of electronic spreadsheet software.
- To understand and apply the basic concepts of database management system.
- To understand and create a presentation using PowerPoint tool.

Course Outcomes (CO)
On successful completion of the course, the learners will be able to

CO1[K1]: recall the fundamentals of computer, office automation packages and Internet

CO2[K2]: develop organizational structure for the hardware devices and software packages

CO3[K3]: apply the concept of storing, manipulating and presenting the data

CO4[K4]: analyze the database concepts to manipulate the real time data

CO5[K5]: evaluate the various methodologies to present the data

CO–PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	2	2	1	2	-	2	-
CO2[K2]	2	2	2	1	1	-	1
CO3[K3]	3	2	2	2	1	1	-
CO4[K4]	1	2	1	1	2	-	1
CO5[K5]	2	1	1	1	1	1	1
Weightage of the course	10	9	7	7	5	4	3
Weighted percentage of Course contribution to POs	2.09	2.26	2.6	2.17	3.23	2.17	1.66

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

WRITER
1. Preparing a Leave Letter.
2. Resume Preparation.
3. Formatting feature of Document.
4. Create the Time Table.
5. Mail merging feature of writer.

CALC
6. Presentation of data using charts.
7. Perform Student's Mark statement.
8. Employee Details using Formulas.
9. Usage of Functions in Excel.

IMPRESS
10. Slide show presentation for your Bio data.
11. Displaying College details.
12. Displaying Advertisement Presentation.

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF COMPUTER APPLICATIONS
UG Programme – Bachelor of Computer Applications
SEMESTER – II
SKILL ENCHANCEMENT COURSE – IV: NON MAJOR ELECTIVE COURSE:
INTRODUCTION TO HTML (23UCAN21)
(From 2023–2024 Batch onwards)

HOURS/WEEK: 2	**INT. MARKS : 25**
CREDITS : 2	**EXT. MARKS : 75**
DURATION : 30 hrs	**MAX. MARKS: 100**

Course Objectives

- To insert a graphic within a web page.
- To create a link within a web page..
- To create a table within a web page.
- To insert heading levels within a web page.
- To insert ordered and unordered lists within a web page. Create a web page.

Course Outcomes (CO)

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

CO1[K1]: remember the basic concept and resources of HTML

CO2[K2]: illustrate the knowledge of HTML tags and attributes to design static web page

CO3[K3]: apply the HTML input elements to design a static web form

CO4[K4]: analyze the concept of creating link to navigate from one page to another page

CO5[K5]: discuss the graphics elements of HTML

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[K5]	1	2	-	2	-	1	1
Weightage of the course	9	5	0	8	0	5	5
Weighted percentage of Course contribution to POs	1.88	1.25	0	2.48	0	2.72	2.76

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

UNIT I (6 hrs)

Introduction: Web Basics: What is Internet – Web Browsers – What is Webpage – HTML Basics –Understanding Tags

UNIT II (6 hrs)

Tags for Document Structure: HTML – Head – Body Tag. **Block Level Text Elements:** Headings Tag – Paragraph Tag. **Font Style Elements:** Bold – Italic – Font – Small – Strong – Strike – Big Tags.

UNIT III (6 hrs)

Lists: Types of lists: Ordered – Unordered – Nesting Lists. **Other Tags:** Marquee – Hr – Br – Using Images – Creating Hyper Links.

UNIT IV (6 hrs)

Tables: Creating Basic Table – Table Elements – Caption – Table and Cell Alignment – Rowspan – Colspan – Cell Padding.

UNIT V (6 hrs)

Frames: Frameset – Targeted Links – No Frame. **Forms:** Input – Text area – Select – Option.

TEXTBOOKS
1. *Mastering HTML5 and CSS3 Made Easy*. Teach U Comp Inc, 2014.
2. Thomas Michaud. *Foundations of Web Design: Introduction to HTML & CSS*. New Riders, 2013.

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Books
1. Ivan Bayross. *Web Enabled Commercial Applications Development Using HTML, DHTML, JavaScript, Perl CGI.* BPB Publicatons, 2nd Revised Edition, 2000.
2. John W.Gosney. *HTML Professional Project*. Thomoson Course Technology, 2004.
3. Eric Freeman & Elisabeth Robson. *A Brain-Friendly Guide Head First HTML5 Programming.* O'Reilly Media, Inc., 1st Edition.

Web Sources
1. https://www.teachucomp.com/samples/html/5/manuals/Mastering-HTML5-CSS3.pdf
2. https://www.w3schools.com/html/default.asp

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF TAMIL
UG PROGRAMME – B.A., B.Sc., B.Com., BBA., BCA.,
SEMESTER – III
பொதுத்தமிழ் – III (23UTAG31)
(From 2023–2024 Batch onwards)

HOURS / WEEK: 6	INT. MARKS : 25
CREDITS : 3	EXT. MARKS : 75
DURATION : 90 hrs	MAX. MARKS: 100

நோக்கங்கள்

- இலக்கியங்களின் சிறப்பினை உணர்த்துதல்.
- காலந்தோறும் எழுந்த காப்பியங்களின் போக்கையும், புதினத்தின் இலக்கிய வடிவத்தையும் யாப்பு, அணி போன்ற இலக்கிய வகைகளையும் மொழிபெயர்ப்புத் திறனையும் மாணவர்கள் உணருமாறு செய்தல்.
- தமிழ் இலக்கியம் சார்ந்த போட்டித் தேர்வுகளுக்கு ஏற்ப கற்பித்தல் நடைமுறைகளை மேற்கொள்ளுதல்.

கற்றலின் பயன்கள்

இத்தாளை வெற்றிகரமாக முடித்தவுடன் மாணவர்கள்,

CO1[K1]: இலக்கியங்களின் வழி வாழ்வியல் சிந்தனைகள் பற்றி அறிவர்.
CO2[K2]: காப்பிய சமயக் கருத்துக்களையும் நோக்கங்களையும் அடையாளம் காண்பர்.
CO3[K3]: தமிழ் புதினங்களின் வழி சமகாலப் படைப்புகளின் வாழ்க்கை முறையின் ஆற்றலைப் பெறுவர்.
CO4[K4]: காப்பியங்கள் மற்றும் புதினங்களின் வரலாற்றினைப் பாகுபடுத்துவர்.
CO5[K5]: இலக்கிய இலக்கணங்களை கற்று அவற்றை மதிப்பீடு 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[K5]	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	2.09	2.01	0.74	2.48	1.29	1.09	1.1

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

கூறு I **(18 hrs)**
பெருங்காப்பியங்கள்: சிலப்பதிகாரம் - வழக்குரை காதை - இளங்கோவடிகள், மணிமேகலை ஆதிரை பிச்சையிட்ட காதை – சீத்தலைச்சாத்தனார், சீவகசிந்தாமணி – பூமகள் இலம்பகம் - திருத்தக்கதேவர், வளையாபதி – நாதகுந்தனார்.

கூறுII **(18 hrs)**
சமயக் காப்பியங்கள்: பெரியபுராணம் - பூசலார் நாயனார் புராணம் - சேக்கிழார், கம்பராமாயணம் - மந்தரை சூழ்ச்சிப் படலம் - கம்பர், வில்லிபாரதம் - மற்போர் சருக்கம் - வில்லிப்புத்தூராழ்வார், சீறாப்புராணம் - புலி வசனித்த படலம் - உமறுப்புலவர்.

கூறு III **(18 hrs)**
புதினம்: வஞ்சிமாநகரம் (வரலாற்றுப் புதினம்) - நா.பார்த்தசாரதி.

கூறு IV **(18 hrs)**
காப்பியத்தின் தோற்றமும் வளர்ச்சியும் - புதினத்தின் தோற்றமும் வளர்ச்சியும்

கூறு V **(18 hrs)**
மொழித்திறன்: நூல் மதிப்புரை, திறனாய்வு செய்தல், கடிதம் வரைதல், விண்ணப்பம் எழுதுதல்.

பாடநூல்கள்
1. தமிழியல் துறையினர், *தொகுப்பு நூல்,* ஸ்ரீ காளீஸ்வரி கல்லூரி (தன்னாட்சி), சிவகாசி.
2. வாசுதேவன், கா. *பன்முக நோக்கில் தமிழ் இலக்கிய வரலாறு,* தேவன் பதிப்பகம், திருச்சிராப்பள்ளி, 2017.
3. நா.பார்த்தசாரதி, வஞ்சி மாநகரம், கவிதா வெளியீடு, சென்னை, 600017

பார்வை நூல்கள்
1. சிற்பி. பாலசுப்பிரமணியன், *தமிழ் இலக்கிய வரலாறு,* கவிதா வெளியீடு, சென்னை.
2. தமிழண்ணல், *புதிய நோக்கில் தமிழ் இலக்கிய வரலாறு,* சோலை பதிப்பகம், மதுரை
3. பாக்கியமேரி, *வகைமை நோக்கில் தமிழ் இலக்கிய வரலாறு,* பாரி நிலையம், சென்னை.

வலைப்பதிவுகள் (Web Sources)
1. Tamil Heritage Foundation- www.tamilheritage.org
   http://www.tamilheritage.org
2. Tamil virtual University Library- www.tamilvu.org/ library
   http://www.virtualvu.org/library
3. Project Madurai - www.projectmadurai.org.
4. Chennai Library- www.chennailibrary.com http://www.chennailibrary.com
5. Tamil Universal Digital Library- www.ulib.prg http://www.ulib.prg
6. Tamil E-Books Downloads- tamilebooksdownloads. blogspot.com
7. Tamil Books on line- books.tamil cube.com
8. Catalogue of the Tamil books in the Library of British Congress archive.org
   Tamil novels on line - books.tamilcube.com

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF ENGLISH
UG Programme – B.A./ B.COM/B.B.A./ B.SC./BCA
SEMESTER – III
GENERAL ENGLISH – III (23UENL31)
(From 2023–2024 Batch onwards)

HOURS/WEEK: 6 (L- 5, T-1)   **INT. MARKS : 25**
CREDITS   : 3   **EXT. MARKS : 75**
DURATION   : 90 hrs   **MAX. MARKS: 100**

Course Objectives
- To enhance the level of literary and aesthetic experience of students and to help them respond creatively.
- To sensitize them to the major issues in the society and the world.
- To provide them with an ability to build and enrich their communication skills.
- To equip them to utilize the digital knowledge resources effectively for their chosen fields of study.
- To help them think and write imaginatively and critically.

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 scenes from shakespearean plays.
CO2 [K2]: demonstrate effective speaking skills by listening to speeches of famous personalities and express it in day-to-day life.
CO3 [K3]: apply the knowledge of language competency in writing letters, emails and display social etiquettes in everyday life.
CO4 [K4]: analyse data interpretation, meeting etiquettes, organizing and participating in a meeting.
CO5 [K5]: develop language skills through literature and assess the knowledge of English in the workplace.

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[K5]	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	2.09	2.01	1.12	2.79	1.94	1.63	1.1

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

UNIT I - SPEECHES OF FAMOUS PERSONALITIES (18 hrs)

Jawaharlal Nehru	-	Tryst with Destiny
Steve Jobs	-	You've got to Find What You Love
Barack Obama	-	Yes, We Can

UNIT II- POETRY (18 hrs)

Christina Rossetti	-	In an Artist's Studio
Toru Dutt	-	Sita
Oodgeroo Noonuccal	-	A Song of Hope
Mamang Dai	-	The Voice of the Mountains

UNIT III - SCENES FROM SHAKESPEARE (18 hrs)

Romeo & Juliet	-	The Balcony Scene
Macbeth	-	Banquet Scene
Julius Caesar	-	Murder Scene

UNIT IV - LANGUAGE COMPETENCY (18 hrs)

Writing letters and emails
Writing and messaging in social media platforms [blogs, twitter, Instagram, facebook]
Learning netiquette, email etiquette

UNIT V - ENGLISH FOR WORK PLACE (18 hrs)

Data Interpretation and Reporting
Data Presentation and analysis
Meeting Etiquettes - language, dress code, voice modulation
Online Meetings   - Terms and expressions used
Conducting and participating in a meeting

TEXTBOOK
1. Arden Shakespeare*: Complete works of William Shakespeare.* Bloomsbury, 2011.

REFERENCES
 Books
1. Wells, Stanley. *The Shakespeare Book: Big Ideas Simply Explained*, et al. DK Publishing, 2015.
2. Gandhi, Mahatma. *Famous Speeches by Mahatma Gandhi*, Create space Independent Publishing Platform, 2016.
3. Bernish, Jeanne Kelly. *How to Build a Professional Digital Profile* Kindle Edition, Bernish Communications Associates, LLC; 1st edition (May 29, 2012).

4. Folse, Keith.S. *Keys to Teaching Grammar to English Language Learners*, Second Ed.: A Practical Handbook, Michigan Teacher Training, 2016.
5. Yardley, Krysia.M. *Role Play- Theory and Practice*. Matwiejczuk, SAGE publications ltd, 1997.

Web Sources

1. https://www.scribd.com/document/558838656/
2. http://www.wordslikethis.com.au/
3. https://www.poetryfoundation.org/poems/146804/in-an-artist39s-studio
4. https://www.poetrynook.com/poem/s%E2%94%9C%C2%ABta
5. https://www.cam.ac.uk/files/a-tryst-with-destiny/index.html#:~:text=Jawaharlal%20Nehru%2C%20delivering%20his%20Tryst%20with%20Destiny%20speech.&text=%22Long%20years%20ago%20we%20made,awake%20to%20life%20and%20freedom

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF COMPUTER APPLICATIONS
UG Programme – Bachelor of Computer Applications
SEMESTER – III
CORE COURSE – V: JAVA PROGRAMMING (23UCAC31)
(From 2023–2024 Batch onwards)

HOURS/WEEK: 5	**INT. MARKS : 25**
CREDITS : 5	**EXT. MARKS : 75**
DURATION : 75 hrs	**MAX. MARKS: 100**

Course Objectives
- To provide fundamental knowledge of object–oriented programming.
- To equip the student with programming knowledge in Core Java from the basics up.
- To enable the students to use AWT controls, Event Handling and Swing for GUI.
- To provide fundamental knowledge of object–oriented programming.
- To equip the student with programming knowledge in Core Java from the basics up.

Course Outcomes (CO)
On successful completion of the course, the learners will be able to
CO1[K1]: recall the basic object oriented concepts and implement the basic constructs of core java
CO2[K2]: illustrate the concept of inheritance, packages, interfaces and exception handling of Core Java
CO3[K3]: apply the techniques multi–threading and I/O streams of core java
CO4[K4]: analyze the methods and event handling of AWT
CO5[K5]: discuss the operations involved in swing to create GUI based applications

CO–PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	2	3	1	1	-	-	-
CO2[K2]	2	2	2	2	-	1	-
CO3[K3]	3	2	3	2	1	1	-
CO4[K4]	3	1	2	2	2	1	2
CO5[K5]	2	2	1	1	2	1	1
Weightage of the course	12	10	9	8	5	4	3
Weighted percentage of Course contribution to POs	2.51	2.51	3.35	2.48	3.23	2.17	1.66

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

UNIT I   (15 hrs)

Introduction: Review of Object Oriented Concepts – History of Java – Java Buzzwords – JVM Architecture – Data Types – Variables – Scope and Life Time of Variables – Arrays – Operators – Control Statements – Type Conversion and Casting – Simple Java Program – Constructors – Methods – Static Block – Static Data – Static Method String and String Buffer Classes.

UNIT II   (15 hrs)

Inheritance: Basic Concepts – Types of Inheritance – Member Access Rules – Usage of This and Super Key Word – Method Overloading – Method Overriding – Abstract Classes – Dynamic Method Dispatch – Usage of Final Keyword. **Packages**: Definition – Access Protection – Importing Packages. **Interfaces**: Definition – Implementation – Extending Interfaces. **Exception Handling**: Try – Catch – Throw – Throws – Finally – Built–in Exceptions – Creating Own Exception Classes.

UNIT III   (15 hrs)

Multithreaded Programming: Thread Class – Runnable Interface – Synchronization – Using Synchronized Methods – Using Synchronized Statement – Inter Thread Communication – Deadlock. **I/O Streams:** Concepts of Streams – Stream Classes – Byte and Character Stream – Reading Console Input and Writing Console Output – File Handling.

UNIT IV   (15 hrs)

AWT Controls: The AWT Class Hierarchy – User Interface Components – Labels – Button – Text Components – Check Box – Check Box Group – Choice – List Box – Panels – Scroll Pane – Menu – Scroll Bar. Working with Frame Class – Colour – Fonts and Layout Managers. **Event Handling:** Events – Event Sources – Event Listeners – Event Delegation Model (EDM) – Handling Mouse and Keyboard Events – Adapter Classes – Inner Classes.

UNIT V   (15 hrs)

Swing: Introduction to Swing – Hierarchy of Swing Components – Containers – Top Level Containers – Jframe – Jwindow – Jdialog – Jpanel – Jbutton – Jtogglebutton – Jcheckbox – Jradiobutton – Jlabel – Jtextfield – Jtextarea – Jlist – Jcombobox – Jscrollpane.

TEXTBOOKS
1. Herbert Schildt. *The Complete Reference.* Tata McGraw Hill, New Delhi, 7th Edition, 2010.
2. Gary Cornell. *Core Java 2 Volume I – Fundamentals*. Addison Wesley, 1999.

REFERENCES
Books

1. Kathy Sierra and Bert Bates. *Head First Java*. O'Rielly Publications, 2nd Edition, 2005.
2. Y. Daniel Liang. *Introduction to Java Programming*. Pearson Education India, 7th Edition, 2010.

Web Sources

1. https://javabeginnerstutorial.com/core–java–tutorial
2. http://docs.oracle.com/javase/tutorial/
3. https://www.coursera.org/

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF COMPUTER APPLICATIONS
UG Programme – Bachelor of Computer Applications
SEMESTER – III
CORE COURSE – VI: PRACTICAL: PROGRAMMING IN JAVA (23UCAC3P)
(From 2023–2024 Batch onwards)

HOURS/WEEK : 5	**INT. MARKS : 25**
CREDITS : 5	**EXT. MARKS : 75**
DURATION : 75 hrs	**MAX. MARKS: 100**

Course Objectives
- To provide fundamental knowledge of object-oriented programming.
- To equip the student with programming knowledge in Core Java from the basics up.
- To enable the students to use Event Handling, String Concepts.
- To equip the student with programming knowledge in to create GUI using AWT controls.

Course Outcomes (CO)
On successful completion of the course, the learners will be able to

CO1[K1]: define the use of OOPs concepts and solve the simple problems
CO2[K2]: explain the concept of class and object with access control
CO3[K3]: develop programming constructs on overloading methodology on functions and constructors to develop application programs
CO4[K4]: compute the multi threading concepts to develop inter process communication
CO5[K5]: evaluate the impact of exception handling to avoid abnormal termination of program

CO-PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	3	3	2	1	-	-	-
CO2[K2]	3	2	2	2	-	-	-
CO3[K3]	3	1	2	2	1	2	1
CO4[K4]	2	2	-	-	1	2	2
CO5[K5]	3	2	1	1	2	1	3
Weightage of the course	14	10	7	6	4	5	6
Weighted percentage of Course contribution to POs	2.92	2.51	2.6	1.86	2.58	2.72	3.31

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

1. Write a Java program that prompts the user for an integer and then prints out all the prime numbers up to that Integer
2. Write a Java program to multiply two given matrices.
3. Write a Java program that displays the number of characters, lines and words in a text
4. Generate random numbers between two given limits using Random class and print messages according to the range of the value generated.
5. Write a program to do String Manipulation using Character Array and perform the following string operations:
    a. String length
    b. Finding a character at a particular position
    c. Concatenating two strings
6. Write a program to perform the following string operations using String class:
    a. String Concatenation
    b. Search a substring
    c. To extract substring from given string
7. Write a program to perform string operations using String Buffer class:
    a. Length of a string
    b. Reverse a string
    c. Delete a substring from the given string
8. Write a java program that implements a multi-thread application that has three threads. First thread generates random integer every 1 second and if the value is even, second thread computes the square of the number and prints. If the value is odd, the third thread will print the value of cube of the number.
9. Write a threading program which uses the same method asynchronously to print the numbers 1 to 10 using Thread1 and to print 90 to100 using Thread2.
10. Write a program to demonstrate the use of following exceptions.
    a. Arithmetic Exception   b. Number Format Exception
    c. Array Index Out of Bound Exception   d. Negative Array Size Exception
11. Write a Java program that reads on file name from the user, and then displays information about whether the file exists, whether the file is readable, whether the file is writable, the type of file and the length of the file in bytes.
12. Write a program to accept a text and change its size and font. Include bold italic options. Use frames and controls.
13. Write a Java program that handles all mouse events and shows the event name at the center of the window when a mouse event is fired. (Use adapter classes).
14. Write a Java program that works as a simple calculator. Use a grid layout to arrange buttons for the digits and for the +, -,*, % operations. Add a text field to display the result. Handle any possible exceptions like divide by zero.
15. Write a Java program that simulates a traffic light. The program lets the user select one of three lights: red, yellow, or green with radio buttons. On selecting a button, an appropriate message with "stop" or "ready" or "go" should appear above the buttons in a selected color. Initially there is no message shown.

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF COMPUTER APPLICATIONS
UG Programme – Bachelor of Computer Applications
SEMESTER – III
ELECTIVE COURSE GENERIC / DISCIPLINE SPECIFIC – III: FINANCIAL
ACCOUNTING (23UCAA31)
(From 2023–2024 Batch onwards)

HOURS/ WEEK : 4	**INT. MARKS : 25**
CREDITS : 3	**EXT. MARKS : 75**
DURATION : 60 hrs	**MAX. MARKS: 100**

Course Objectives
- To equip the learners with fundamental principles of accountancy for sole trading and non-profit organizations
- To develop the importance of accounting in organization financial statements
- To provide the students to analyze specific characteristics of Logistics Management Accounting

Course Outcomes (CO)
On successful completion of the course, the learners will be able to
CO1[K1]: recall the knowledge in accounting, maintenance, journal & ledgers
CO2[K2]: generalize the basic accounting concepts, preparation of subsidiary books
and final accounts
CO3[K3]: develop the application skills to create adjusting journal entries in
rectifying errors, preparation of entries in bill of exchange
CO4[K4]: examine the analytical skills in accounting equation and cash book
transactions in the bank reconciliation statement
CO5[K5]: evaluate the financial position of sole proprietor through final accounts

CO–PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	3	2	2	1	-	-	2
CO2[K2]	3	2	2	-	2	2	1
CO3[K3]	2	3	2	2	1	-	-
CO4[K4]	2	2	1	1	-	1	1
CO5[K5]	2	2	3	2	1	1	1
Weightage of the course	12	11	10	6	4	4	5
Weighted percentage of Course contribution to POs	2.51	2.76	3.72	1.86	2.58	2.17	2.76

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

UNIT I (12 hrs)

Introduction: Transaction – Definition of Book – Keeping – Objectives – Definition of Accounting – Functions of Accounting – Advantages – Limitations– System of Accounting – Book Keeping vs Accounting – Double Entry System – Advantages – Disadvantages of Double Entry System – Single Entry System – Meaning – Advantages – Defects – Double Entry System vs Single Entry System – Types of Accounts.

UNIT II (12 hrs)

Principles of Double Entry System – Accounting Rules – Accounting Principles – Accounting Concepts – Accounting Conventions – Meaning of Basic Terms – Journal – Compound Journal Entries – Ledger – Journal vs Ledger – Trial Balance – Objectives – Limitations – Subsidiary Books – Types of Subsidiary Books.

UNIT III (12 hrs)

Errors – Meaning of Error – Types of Errors – Suspense Account (Simple Problems Only).

UNIT IV (12 hrs)

Bank Reconciliation Statement – Meaning of Bank Reconciliation Statement – Reasons for Differences – Cash Book vs Pass Book – Steps to be Followed for Preparing Bank Reconciliation Statement – Cash Book Favourable Model – Cash Book Overdraft Model – Pass Book Favourable Balance Model – Pass Book Overdraft Model (Simple Problems Only).

UNIT V (12 hrs)

Final Accounts – Meaning – Trading Account – Profit and Loss Account – Trading Account vs Profit or Loss Account – Differences Between Gross Profit and Net Profit – Balance Sheet – Trial Balance vs Balance Sheet – Treatment of Some Simple Adjustments (Simple Problems Only). **(Note: Problems 60% Theory 40%)**

TEXTBOOK
1. V.Sudhakar, M.Anbalagan and K.Jeyalakshmi. *Fundamentals of Financial Accounting.* S.Chand & Sons, 1st Edition, 2009.

REFERENCES
Books
1. R. L. Gupta and M. Radhasamy. *Advanced Accountancy.* Sultan Chand & Sons, 10th Edition, 2001.
2. M. Arulanantham & Raman, *Advanced Accountancy*, Himalaya Publishing House, 5th Edition, 1999.

Web Sources
1. https://nptel.ac.in/courses/110/101/110101131/
2. https://onlinecourses.swayam2.ac.in/nce20_sc45/preview
3. https://onlinecourses.swayam2.ac.in/cec20_mg23/preview
4. https://onlinecourses.nptel.ac.in/noc19_mg37/preview
5. https://www.classcentral.com/course/swayam–secondary–accountancy–224–17765

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF COMPUTER Applications
UG Programme – Bachelor of Computer Applications
SEMESTER – III
SKILL ENHANCEMENT COURSE – V: (Entrepreneurial Skill) – UNDERSTANDING INTERNET (23UCAS31)
(From 2023–2024 Batch onwards)

HOURS/WEEK: 1	**INT. MARKS : 25**
CREDIT : 1	**EXT. MARKS : 75**
DURATION : 15 hrs	**MAX. MARKS: 100**

Course Objectives
- To understand the knowledge of Internet medium.
- To understand internet as a mass medium.
- To know the features of internet technology.
- To discuss the internet as source of infotainment.
- To study the internet audiences and about cyber crime.

Course Outcomes (CO)
On successful completion of the course, the learners will be able to

CO1[K1]: recall the basic concept in internet Concept of mass medium and world wide web

CO2[K2]: discuss the concept of internet as a technology

CO3[K3]: develop the concept of infotainment and classification based on content and style

CO4[K4]: analyse the demographic and psychographic description of internet

CO5[K5]: discuss the concept of cyber crime and future possibilities

CO–PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	3	2	3	2	-	-	-
CO2[K2]	3	2	2	3	-	1	-
CO3[K3]	3	1	2	2	-	3	-
CO4[K4]	3	2	-	-	1	2	1
CO5[K5]	2	2	1	-	1	2	2
Weightage of the course	14	9	8	7	2	8	3
Weighted percentage of Course contribution to POs	2.92	2.26	2.97	2.17	1.29	4.35	1.66

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

UNIT I   **(3 hrs)**

The Emergence of Internet as a Mass Medium – The World of World Wide Web.

UNIT II   **(3hrs)**

Features of Internet as a Technology.

UNIT III   **(3hrs)**

Internet as a Source of Infotainment – Classification Based on Content and Style.

UNIT IV   **(3hrs)**

Demographic and Psychographic Descriptions of Internet Audiences – Effect of Internet on the Values and Life – Styles.

UNIT V   **(3hrs)**

Present Issues Such as Cyber Crime and Future Possibilities.

TEXTBOOKS
1. Barnouw E and Krishnaswamy S. *Indian Film*. New York, 1990.
2. Kumar, Keval. *Mass Communication in India*. Mumbai, 1999.
3. Srivastava, K M. *Media Issues*. Sterling Publishers Pvt Ltd.

REFERENCES
Books
1. Acharya, R N.*Television in India*. Manas Publications, New Delhi, 1987.
2. Barnouw, E. *Documentary – A History of Nonfiction.*Oxford, OUP, 1974.
3. Luthra, H R.*Indian Broadcasting*. Ministry of I & B, New Delhi, 1986.
4. Vasudev, Aruna.*The New Indian Cinema*. Macmillan India, New Delhi, 1986.

Web Sources
1. https://www.teachucomp.com/samples/html/5/manuals/Mastering–HTML5–CSS3.pdf
2. https://www.w3schools.com/html/default.asp

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF COMPUTER APPLICATIONS
UG Programme – Bachelor of Computer Applications
SEMESTER – III
SKILL ENHANCEMENT COURSE – VI: WEB DESIGNING LAB (23UCAS3P)
(From 2023–2024 Batch onwards)

HOURS/WEEK: 2	**INT. MARKS : 25**
CREDITS : 2	**EXT. MARKS : 75**
DURATION : 30 hrs	**MAX. MARKS: 100**

Course Objectives
- To Acquire and understand the basic concepts in Java, application of OOPs.
- To know about operators and decision–making statements.
- To identify the significance and application of Classes, arrays.
- Can create window–based programming using applet and graphics programming.

Course Outcomes (CO)
On successful completion of the course, the learners will be able to
CO1[K1]: describe the basic concept of open source, proprietary software licensing, and familiarize with the linux environment
CO2[K2]: illustrate the importance of linux architecture and various techniques of web development
CO3[K3]: identify the significance and application of apache server, understand the file system of linux
CO4[K4]: analyze the concepts and manipulation of database using MySql
CO5[K5]: interpret the concepts of PHP scripts and apache server to create a dynamic web content

CO–PO Mapping table (Course Articulation Matrix)

PO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	2	2	2	2	-	1	1
CO2[K2]	2	2	2	1	1	1	1
CO3[K3]	2	1	2	1	1	1	1
CO4[K4]	2	3	2	2	1	1	1
CO5[K5]	2	-	1	2	-	1	1
Weightage of the course	10	8	9	8	3	5	5
Weighted percentage of Course contribution to POs	2.09	2.01	3.35	2.48	1.94	2.72	2.76

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

1. Create a application form using HTML input elements.
2. Design a static web page using HTML formatting elements.
3. Create your home page using HTML. The page should contain images, tables, frames, ordered and unordered lists, links, other text formatting elements.
4. Create web page/s showing the working of three different types of CSS.
5. Create a web page using the class and properties of CSS.
6. Design a media player using HTML and CSS.
7. Design a web page to import CSS file into XML file
8. Create a user data validation form using JavaScript.
9. Write a user defined function in JavaScript to check if a string is palindrome or not. Do not use predefined function for the same.
10. Design a web page to change a color of text using DHTML and Javascript.

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF TAMIL
UG PROGRAMME – B.A., B.Sc., B.Com., BBA., BCA.,
SEMESTER – IV
பொதுத்தமிழ் – IV (23UTAG41)
(From 2023–2024 Batch onwards)

HOURS / WEEK: 6	**INT. MARKS : 25**
CREDITS : 3	**EXT. MARKS : 75**
DURATION : 90 hrs	**MAX. MARKS: 100**

நோக்கங்கள்

- இலக்கியங்களின் சிறப்பினை உணர்த்துதல்.
- சங்க இலக்கியத்தின் சிறப்பையும், நாடகம் என்னும் இலக்கிய வகையின் தன்மையையும் அகபுற இலக்கணங்களையும் மாணவர்களுக்கு அறிமுகப்படுத்துதல்.
- தமிழ் இலக்கியம் சார்ந்த போட்டித் தேர்வுகளுக்கு ஏற்ப கற்பித்தல் நடைமுறைகளை மேற்கொள்ளுதல்.

கற்றலின் பயன்கள்

இத்தாளை வெற்றிகரமாக முடித்தவுடன் மாணவர்கள்,

CO1[K1]: சங்க இலக்கியத்தில் காணப்பெறும் அறக்கருத்துக்களை அறிந்து கொள்வர்.
CO2[K2]: சங்க இலக்கியங்கள் மற்றும் நாடக இலக்கியம் வாயிலாக மக்களின் வாழ்க்கை முறையினை எடுத்துரைப்பர்.
CO3[K3]: நாடக இலக்கியம் மூலம் நடிப்பாற்றலையும், கலைத்தன்மையையும், படைப்பாற்றலையும் கற்பர். மேலும் மொழிபெயர்ப்பு ஆற்றலையும் பெறுவர்.
CO4[K4]: கலைச்சொற்களைக் கண்டறிந்து அவற்றோடு தொடர்புடைய சொல்லைப் பகுப்பர்.
CO5[K5]: சங்க இலக்கியம் மற்றும் நாடக இலக்கியங்களை மதிப்பீடு 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	-	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	08	02	09	02	02	02
Weighted percentage of Course Contribution to POs	2.09	2.01	0.74	2.79	1.29	1.09	1.1

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

கூறு I **(18 hrs)**

எட்டுத்தொகை: நற்றிணை (10,14,16பாடல்கள்), குறுந்தொகை (16,17,19,20,25,29,38,440), கலித்தொகை (38,51), அகநானூறு (15,33,55), புறநானூறு (37,86,112), பரிபாடல் (55)

கூறு II **(18 hrs)**

பத்துப்பாட்டு: நெடுநல்வாடை - நக்கீரர்

கூறு III **(18 hrs)**

நாடகம்: சபாபதி - பம்மல் சம்பந்த முதலியார்

கூறு IV **(18 hrs)**

சங்க இலக்கியம் தோற்றம் வளர்ச்சி - நாடகத்தின் தோற்றம் வளர்ச்சி

கூறு V **(18 hrs)**

மொழித்திறன்: மொழிபெயர்ப்பு - கலைச்சொற்கள், கொடுக்கப்பட்டுள்ள ஆங்கிலப் பகுதியைத் தமிழில் மொழிபெயர்தல், அலுவலகக் கடிதம் - தமிழில் மொழிபெயர்த்தல்.

பாடநூல்கள்
1. தமிழியல் துறையினர், *தொகுப்பு நூல்*, ஸ்ரீ காளீஸ்வரி கல்லூரி (தன்னாட்சி), சிவகாசி.
2. வாசுதேவன், கா. *பன்முக நோக்கில் தமிழ் இலக்கிய வரலாறு*, தேவன் பதிப்பகம், திருச்சிராப்பள்ளி, 2017.
3. சபாபதி, *பம்மல் சம்பந்த முதலியார்*, கௌரா பதிப்பகக் குழுமம், சென்னை

பார்வை நூல்கள்
1. சிற்பி. பாலசுப்பிரமணியன், *தமிழ் இலக்கிய வரலாறு*, கவிதா வெளியீடு, சென்னை.
2. தமிழண்ணல், *புதிய நோக்கில் தமிழ் இலக்கிய வரலாறு*, சோலை பதிப்பகம், மதுரை
3. பாக்கியமேரி, *வகைமை நோக்கில் தமிழ் இலக்கிய வரலாறு*, பாரி நிலையம், சென்னை.

வலைப்பதிவுகள் (Web Sources)
1. Tamil Heritage Foundation- www.tamilheritage.org
   http://www.tamilheritage.org
2. Tamil virtual University Library- www.tamilvu.org/ library
   http://www.virtualvu.org/library
3. Project Madurai - www.projectmadurai.org.
4. Chennai Library- www.chennailibrary.com http://www.chennailibrary.com
5. Tamil Universal Digital Library- www.ulib.prg http://www.ulib.prg
6. Tamil E-Books Downloads- tamilebooksdownloads. blogspot.com
7. Tamil Books on line- books.tamil cube.com
8. Catalogue of the Tamil books in the Library of British Congress archive.org
   Tamil novels on line - books.tamilcube.com

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF ENGLISH
UG Programme – B.A./ B.COM/B.B.A./ B.SC./BCA
SEMESTER – IV
GENERAL ENGLISH – IV (23UENL41)
(From 2023-2024 Batch onwards)

HOURS/WEEK: 6 (L-5, T-1)	**INT. MARKS : 25**
CREDITS : 3	**EXT. MARKS : 75**
DURATION : 90 hrs	**MAX. MARKS: 100**

Course Objectives
- To help learners imbibe the rules of language unconsciously and tune to deduce language structure and usage.
- To use receptive skills through reading and listening to acquire good exposure to language and literature.
- To develop language skill for effective communication.
- To provide exposure to plays, autobiographies and expose them to value based ideas.
- To enhance the learner's language skills especially in the areas of grammar and pronunciation.

Course Outcomes (CO)
On successful completion of the course, the learners will be able to
CO1 [K1]: state ideas effectively and appropriately in real life situations.
CO2 [K2]: demonstrate speaking skills in appreciating literature.
CO3 [K3]: use grammar and pronunciation effectively and appropriately.
CO4 [K4]: examine the literary works to develop language skills.
CO5 [K6]: construct grammatically correct and meaning full sentences.

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	2.09	2.26	1.12	2.48	1.29	1.63	1.66

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

UNIT I - LIFE WRITING (18 hrs)

Malala Yousafzai   -   I am Malala - Chapter 1
Nikola Tesla   -   My Inventions - Chapter 2

UNIT II - ONE ACT PLAYS (18 hrs)

Edward Albee   -   The Zoo Story
Anton Chekhov   -   The Proposal

UNIT III - INTERVIEWS (18 hrs)

Nelson Mandela's Interview with Larry King
Rakesh Sharma's Interview with Indira Gandhi from Space
Lionel Messi with Sid Lowe (Print)

UNIT IV - LANGUAGE COMPETENCY (18 hrs)

Refuting, Arguing & Debating, Making Suggestions & Responding to Suggestions, Asking for and Giving Advice or Help, Interviews (face to face, telephone and video conferencing)

UNIT V - ENGLISH FOR WORKPLACE (18 hrs)

Job Applications: Covering letters, CV and Resume
Creating a digital profile - Linkedin
Filling Forms (Online & Manual): creation of account, railway reservation, ATM, Credit/debit card
Body Language -Practical Skills for Interviews

TEXTBOOKS
1. Yousafzai, Malala, and Christina Lamb. *I Am Malala The Girl Who Stood Up for Education and Was Shot by the Taliban*. New York: Little Brown, 2013.
2. Tesla, Nikola. *My Inventions.* London: Ingram Short Title, 2011.

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Books
1. Taylor, Mary Borg, & Francis,*Writing Your Life: A Guide to Writing Autobiographies.* Routledge, 2021.
2. Bert, A. Norman. *One-act Plays for Acting Students: An Anthology of Short one-Act Plays for one, Two or Three actors*. Christian Publisher LLC, 1987.
3. Dolley, Colin, and Rex Welford.*The One-Act Play Companion: A Guide to plays, Play wrights and Performance*. Bloomsbury Publishing, 2015.
4. Bernis, Jeanne Kelly. Editor. *How to Build a Professional Digital Profile*. Bernish, Bernish Communications Associates, LLC, 2012
5. Yardley, M Yardley - Matwiejczuk, *Role Play-Theory and Practice.* SAGE publications ltd, 1997.

Web Sources
1. For Readers' Theatre:
https://www.youtube.com/watch?v=JaLQJt8orSw&t=469s(the link to the performance; refer scripts by Aaron Sheperd) http://BBC learn English.com
2. https://www.infoplease.com/dictionary/brewers/animals-cries

3. http://onestopenglish.com
4. http://hearn-english-today.com
5. http://talkenglish.com

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF COMPUTER APPLICATIONS
UG Programme – Bachelor of Computer Applications
SEMESTER – IV
CORE COURSE – VII: DATA STRUCTURES AND ALGORITHMS (23UCAC41)
(From 2023–2024 Batch onwards)

HOURS/WEEK: 5	**INT. MARKS : 25**
CREDITS : 5	**EXT. MARKS : 75**
DURATION : 75 hrs	**MAX. MARKS: 100**

Course Objectives
- To understand the concepts of ADTs.
- To learn linear data structures–lists, stacks, queues.
- To learn Tree structures and application of trees.
- To learn graph structures and and application of graphs.
- To understand various sorting and searching.

Course Outcomes (CO)
On successful completion of the course, the learners will be able to
CO1[K1]: remember the features of various data structures and algorithm techniques
CO2[K2]: understand basic data structures such as arrays, linked lists, stacks and queues
CO3[K3]: describe the hash function and concepts of collision and its resolution methods
CO4[K4]: solve problem involving graphs, trees and heaps
CO5[K5]: apply algorithm for solving problems like sorting, searching, insertion and deletion of data

CO–PO Mapping table (Course Articulation Matrix)

PO \ CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	3	2	3	2	-	-	-
CO2[K2]	3	2	2	3	-	1	-
CO3[K3]	3	1	2	2	-	3	-
CO4[K4]	3	2	-	-	1	2	1
CO5[K5]	2	2	1	-	1	2	2
Weightage of the course	14	9	8	7	2	8	3
Weighted percentage of Course contribution to POs	2.92	2.26	2.97	2.17	1.29	4.35	1.66

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

UNIT I   (15 hrs)

Abstract Data Types (ADTs): List ADT – Array Based Implementation –Linked List Implementation – Singly Linked Lists – Circular Linked Lists – Doubly Linked Lists – Applications of Lists – Polynomial Manipulation – All Operations – Insertion – Deletion – Merge – Traversal.

UNIT II   (15 hrs)

Stack ADT: Operations – Applications – Evaluating Arithmetic Expressions – Conversion of Infix to Postfix Expression – Queue ADT – Operations – Circular Queue – Priority Queue – Dequeue – Applications of Queues.

UNIT III   (15 hrs)

Tree ADT: Tree Traversals – Binary Tree ADT – Expression Trees – Applications of Trees – Binary Search Tree ADT – Threaded Binary Trees – AVL Trees – B Tree – B+ Tree – Heap – Applications of Heap.

UNIT IV   (15 hrs)

Definition: Representation of Graph – Types of Graph – Breadth First Traversal – Depth First Traversal – Topological Sort – Biconnectivity – Cut Vertex – Euler Circuits – Applications of Graphs.

UNIT V   (15 hrs)

Searching: Linear Search – Binary Search – Sorting – Bubble Sort – Selection Sort – Insertion Sort – Shell Sort – Radix Sort – Hashing – Hash Functions – Separate Chaining – Open Addressing – Rehashing Extendible Hashing.

TEXTBOOKS
1. Mark Allen Weiss. *Data Structures and Algorithm Analysis in C++.* Pearson Education, 4th Edition, 2014.
2. Reema Thareja. *Data Structures Using C*. Oxford Universities Press, 2nd Edition, 2014.

REFERENCES
Books
1. Thomas H. Cormen, Chales E. Leiserson, Ronald L. Rivest, Clifford Stein. *Introduction to Algorithms*. McGraw Hill, 3rd Edition, 2009.
2. Aho, Hopcroft and Ullman. *Data Structures and Algorithms*. Pearson Education, 2003.

Web Sources
1. NPTEL & MOOC courses titled Data Structures
2. https://nptel.ac.in/courses/106106127/

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF COMPUTER APPLICATIONS
UG Programme – Bachelor of Computer Applications
SEMESTER – IV
CORE COURSE – VIII: PRACTICAL: PL / SQL (23UCAC4P)
(From 2023–2024 Batch onwards)

HOURS/WEEK: 5	**INT. MARKS : 25**
CREDITS : 5	**EXT. MARKS : 75**
DURATION : 75 hrs	**MAX. MARKS: 100**

Course Objectives
- To learn the design of database systems, foundation on the relational model of data and normal forms.
- To understand the concepts of database management system, design simple Database models.
- To learn and understand to write queries using SQL, PL/SQL.
- To enable the students to learn the designing of database systems, foundation on the relational model of data and normal forms.
- To understood the concepts of database management system, design simple database models

Course Outcomes (CO)
On successful completion of the course, the learners will be able to

CO1[K1]: define the basic concepts of database management system

CO2[K2]: express the fundamentals of relational data model, entity-relationship model and integrity constraints   .

CO3[K3]: apply the SQL commands for manipulating the data in database

CO4[K4]: classify the different functions of PL/SQL

CO5[K5]: evaluate the basics of PL/SQL and develop programs using cursors

CO–PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	3	2	2	2	-	1	1
CO2[K2]	3	2	2	3	-	-	1
CO3[K3]	3	2	2	2	-	1	2
CO4[K4]	2	2	1	-	2	2	-
CO5[K5]	2	2	1	-	1	1	2
Weightage of the course	13	10	8	7	3	5	6
Weighted percentage of Course contribution to POs	2.71	2.51	2.97	2.17	1.94	2.72	3.31

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

I. SQL
1. DDL Commands
2. DML Commands
3. TCL Commands

II. PL/SQL
4. Fibonacci Series
5. Factorial
6. String Reverse
7. Sum Of Series
8. Trigger

III. CURSOR
9. Student Mark Analysis Using Cursor

IV. APPLICATION
10. Library Management system
11. Student Mark Analysis

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF COMPUTER APPLICATIONS
UG Programme – Bachelor of Computer Applications
SEMESTER – IV
ELECTIVE COURSE GENERIC/ DISCIPLINE SPECIFIC – IV: DATABASE
MANAGEMENT SYSTEM (23UCAA41)
(From 2023–2024 Batch onwards)

HOURS/WEEK: 3	**INT.MARKS : 25**
CREDITS : 3	**EXT.MARKS : 75**
DURATION : 45 hrs	**MAX. MARKS: 100**

Course Objectives
- To know the basics of database system and its architecture.
- To apply the concepts of relational database models.
- To implement the structure of normalization in relational database.
- To understand the SQL commands and its properties.
- To design programming adherence in PL / SQL.

Course Outcomes (CO)
On successful completion of the course, the learners will be able to
CO1[K1]: define the basic concepts of database system
CO2[K2]: explain the data model and schemas in RDBMS
CO3[K3]: describe the normalization techniques using simple examples
CO4[K4]: analyze functional dependencies for designing robust Database
CO5[K5]: evaluate the transaction processing in PL/SQL, control structures and
triggers

CO-PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	3	2	3	2	-	-	1
CO2[K2]	3	2	2	3	-	1	-
CO3[K3]	3	1	2	2	-	3	-
CO4[K4]	3	2	1	1	1	2	1
CO5[K5]	2	2	1	-	1	2	2
Weightage of the course	14	9	9	8	2	8	4
Weighted percentage of Course contribution to POs	2.92	2.26	3.35	2.48	1.29	4.35	2.21

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

UNIT I   **(9 hrs)**

        Introduction to DBMS – Data and Information – Database – Database Management System – Objectives – Advantages – Components – Architecture**. ER Model:** Building blocks of ER Diagram – Relationship Degree – Classification – ER diagram to Tables – ISA relationship – Constraints – Aggregation and Composition – Advantages.

UNIT II   **(9 hrs)**

     Relational Model: CODD's rule – Relational Data Model – Key – Integrity – Relational Algebra Operations – Advantages and limitations – Relational Calculus – Domain Relational Calculus – QBE.

UNIT III   **(9 hrs)**

       Structure of Relational Database: Introduction to Relational Database Design – Objectives – Tools – Redundancy and Data Anomaly – Functional Dependency – Normalization – 1NF – 2NF – 3NF – BCNF. Transaction Processing – Database Security.

UNIT IV   **(9 hrs)**

        SQL: Commands – Data types – DDL – Selection – Projection – Join and Set Operations – Aggregate Functions – DML – Modification – Truncation – Constraints – Sub Query.

UNIT V   **(9 hrs)**

        PL/SQL: Structure – Elements – Operators Precedence – Control Structure – Iterative Control – Cursors – Procedure – Function – Packages – Exceptional Handling – Triggers.

TEXTBOOK
1. S. Sumathi, S. Esakkirajan. *Fundamentals of Relational Database Management System*. Springer International Edition, 2007.

REFERENCES
Books
1. Abraham Silberchatz, Henry. F. Korth, S. Sudarshan. *Database System Concepts* .McGraw Hill, 7ᵗʰ Edition, 2019.
2. Alexis Leon& Mathews Leon. *Fundamentals of DBMS*. Vijay Nicole Publications, 2ⁿᵈ Edition, 2014.

Web Sources
1. NPTEL & MOOC courses titled Relational Database Management Systems
2. https://nptel.ac.in/courses/106106093/
3. https://nptel.ac.in/courses/106106095/

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF COMPUTER APPLICATIONS
UG Programme – Bachelor of Computer Applications
SEMESTER – IV
SKILL ENHANCEMENT COURSE – VII: SOFTWARE TESTING LAB (23UCAS4P)
(From 2023–2024 Batch onwards)

HOURS/WEEK: 2	**INT. MARKS : 25**
CREDITS : 2	**EXT. MARKS : 75**
DURATION : 30 hrs	**MAX. MARKS: 100**

Course Objectives
- To make students understand the concepts of Software testing.
- To define and highlight importance of software project management.
- To impart knowledge on demand and supply concepts.
- To make the students learn best practices in Software testing.
- To apply software testing techniques in commercial environment.

Course Outcomes (CO)
On successful completion of the course, the learners will be able to

CO1[K1]: describe the principles and concepts of project management.
CO2[K2]: explain the project development to train software project managers
CO3[K3]: apply the software project management methodologies
CO4[K4]: examine the working principles of create comprehensive project plans
CO5[K5]: formulate and mitigate risks associated with software development process

CO–PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	3	2	1	1	1	-	2
CO2[K2]	3	2	2	2	-	1	2
CO3[K3]	2	2	3	1	-	-	-
CO4[K4]	2	2	1	2	-	1	1
CO5[K5]	2	1	1	1	3	-	1
Weightage of the course	12	9	8	7	4	2	6
Weighted percentage of Course contribution to POs	2.51	2.26	2.97	2.17	2.58	1.09	3.31

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

1. Write programs in C Language to demonstrate the working of the following a. constructs:
    I. do...while
    II. while....do
    III. if...else
    IV. switch
    V. for
2. A program written in C language for Matrix Multiplication fails|| Introspect the causes for its failure and write down the possible reasons for its failure.
3. Take any system (e.g. ATM system) and study its system specifications and report the various bugs.
4. Write the test cases for any known application (e.g. Banking application)
5. Create a test plan document for any application (e.g. Library Management System)
6. Study of any testing tool (e.g. Win runner)
7. Study of any web testing tool (e.g. Selenium)
8. Study of any bug tracking tool (e.g. Bugzilla, bugbit)
9. Study of any test management tool (e.g. Test Director)
10. Study of any open source-testing tool (e.g. Test Link)

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF COMPUTER APPLICATIONS
UG Programme – Bachelor of Computer Applications
SEMESTER – IV
SKILL ENHANCEMENT COURSE – VIII: PHP PROGRAMMING LAB (23UCAS4Q)
(From 2023–2024 Batch onwards)

HOURS/WEEK: 2	**INT. MARKS : 25**
CREDITS : 2	**EXT. MARKS : 75**
DURATION : 30 hrs	**MAX. MARKS: 100**

Course Objectives

- To provide the necessary knowledge on basics of PHP.
- To design and develop dynamic, database-driven web applications
- To get an experience on various web application development techniques.
- To learn the necessary concepts for working with the files using PHP.
- To get a knowledge on OOPS with PHP.

Course Outcomes (CO)

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

CO1[K1]: describe the creation of static web pages and handle HTML forms
CO2[K2]: explain the project to develop the PHP variables and data types
CO3[K3]: apply the regular expressions including modifiers, operators, and meta characters
CO4[K4]: examine the working principles of various PHP library functions
CO5[K5]: Formulate the relationship between cookies and sessions

CO–PO Mapping table (Course Articulation Matrix)

PO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	2	2	1	1	1	-	2
CO2[K2]	3	2	2	2	1	1	2
CO3[K3]	2	2	2	1	-	1	2
CO4[K4]	2	2	1	2	-	1	1
CO5[K5]	2	1	1	1	2	-	1
Weightage of the course	11	9	7	7	4	3	8
Weighted percentage of Course contribution to POs	2.3	2.26	2.6	2.17	2.58	1.63	4.42

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

1. Open, read and write a file (File Manipulations) using PHP.
2. Online shopping program with arrays.
3. Form validations using PHP.
4. Calculate date and time using PHP function.
5. Design a age calculator using PHP.
6. Email id creation using PHP.
7. Creation of Cookies using PHP.
8. Creation of Session in PHP.
9. Registration form using PHP and MySQL.
10. Login page design using PHP and MySQL.

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
UG PROGRAMME
SEMESTER – III & IV
ENVIRONMENTAL STUDIES (23UESR41)
(From 2023–2024 Batch onwards)

HOURS/WEEK: 2 (III SEM-1, IV SEM-1)   **INT. MARKS : 25**
CREDITS   : 2   **EXT. MARKS : 75**
DURATION   : 30 hrs   **MAX. MARKS: 100**

Course Objectives
- To provide a comprehensive understanding of various environmental issues, including pollution, deforestation, climate change, loss of biodiversity, water scarcity, and resource depletion
- To encourage sustainable practices in various sectors, such as energy, transportation, agriculture, and waste management.
- To promote the conservation and preservation of natural resources, habitats, and ecosystems
- To foster a sense of environmental ethics and values.
- To encourage individuals to, participate in community initiatives, and contribute to sustainable development at local, national, and global levels

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, biodiversity and climatic change
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[K5]: evaluate 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 [K5]	1	1	-	1	2	1	1
Weightage of the course	08	5	1	7	08	05	05
Weighted percentage of Course contribution to Pos	1.67	1.25	0.37	2.17	5.16	2.72	2.76

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

UNIT I – NATURAL RESOURCES   (6 hrs)

Natural resources: Definition of resource; Classification of natural resources-biotic and abiotic, renewable and non-renewable. **Biotic resources:** Major type of biotic resources- forests, grasslands, wetlands, wildlife and aquatic (fresh water and marine); Microbes as a resource; Status and challenges. **Water resources:** Types of water resources- fresh water and marine resources; Availability and use of water resources; Environmental impact of over-exploitation, issues and challenges; Water scarcity and stress; Conflicts over water.

UNIT II –SUSTAINABLE DEVELOPMENT   (6 hrs)

Soil as a resource and its degradation. **Energy resources:** Sources of energy and their classification, renewable and non-renewable sources of energy; Conventional energy sources- coal, oil, natural gas, nuclear energy; Non-conventional energy sources- solar, wind, tidal, hydro, wave, ocean thermal, geothermal, biomass, hydrogen and fuel cells; Implications of energy use on the environment. **Introduction to sustainable development:** Sustainable Development Goals (SDGs) - targets and indicators, challenges and strategies for SDGs.

UNIT III – ENVIRONMENTAL ISSUES LOCAL, REGIONAL AND GLOBAL   (6 hrs)

Industrial revolution and its impact on the environment; Population growth and natural resource exploitation; Global environmental change. **Pollution:** Impact of sectoral processes on Environment, Types of Pollution- air, noise, water, soil, municipal solid waste, hazardous waste; Trans boundary air pollution; Acid rain; Smog. Land use and Land cover change: land degradation, deforestation, desertification, urbanization. **Biodiversity loss:** past and current trends, impact. Global change: Ozone layer depletion; Climate change.

UNIT IV – CONSERVATION OF BIODIVERSITY AND ECOSYSTEM   (6 hrs)

Biodiversity and its distribution: Biodiversity as a natural resource; Levels and types of biodiversity; Biodiversity in India and the world; Biodiversity hotspots; Species and ecosystem threat categories. **Ecosystems and ecosystem services:** Major ecosystem types in India and their basic characteristics- forests, wetlands, grasslands, agriculture, coastal and marine; Threats to biodiversity and ecosystems. Major conservation policies: in-situ and ex-situ conservation approaches; Major protected areas.

UNIT V – CLIMATE CHANGE: IMPACTS, ADAPTATION AND MITIGATION   (6 hrs)

Climate change: Natural variations in climate; Structure of atmosphere; Anthropogenic climate change from greenhouse gas emissions– past, present and future; Projections of global climate change with special reference to temperature, rainfall, climate variability and extreme events; Importance of 1.5 °C and 2.0 °C limits to global warming; Impacts of climate change on ocean and land systems; Sea level rise, changes in marine and coastal ecosystems; Impacts on forests and natural

ecosystems; **Mitigation of climate change -** Renewable energy sources; Carbon capture and storage, National climate action plan and Intended Nationally Determined Contributions (INDCs)

TEXTBOOKS
1. Chiras D. D and Reganold J. P, *Natural Resource Conservation: Management for a Sustainable Future,* 10th Edition, Pearson, 2010.
2. Harris, Frances, *Global Environmental Issues,* 2nd Edition, Wiley-Blackwell.

REFERENCES
Books
1. Krishnamurthy K. V, *Textbook of Biodiversity,* Science Publishers, Plymouth, UK.
2. Pittock, Barrie, *Climate Change: The Science, Impacts and Solutions,* 2nd Edition, Routledge.

Web Sources
1. https://www.youtube.com/watch?v=QewEi2U1jLs
2. https://www.unep.org/news-and-stories/story/marine-biodiversity-gets-lifeline-high-seas-treaty

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF COMPUTER APPLICATIONS
UG Programme – Bachelor of Computer Applications
SEMESTER – V
CORE COURSE – IX: SOFTWARE ENGINEERING (23UCAC51)
(From 2023–2024 Batch onwards)

HOURS/WEEK: 5	**INT. MARKS : 25**
CREDITS : 4	**EXT. MARKS : 75**
DURATION : 75 hrs	**MAX. MARKS: 100**

Course Objectives
- To gain basic knowledge of analysis and design of systems.
- To apply software engineering principles and techniques.
- To model a reliable and cost-effective software system.
- To design an effective model of the system.
- To perform testing at various levels and produce an efficient system.

Course Outcomes (CO)

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

CO1[K1]: recall the basic knowledge of analysis and design of systems

CO2[K2]: describe the software engineering principles and techniques

CO3[K3]: apply the reliable and cost-effective software system

CO4[K4]: analyze the various effective model of the system

CO5[K5]: evaluate the testing at various levels and produce an efficient system

CO-PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	3	2	3	2	1	-	-
CO2[K2]	3	-	1	-	-	2	-
CO3[K3]	1	2	3	2	2	1	-
CO4[K4]	3	-	2	2	-	1	-
CO5[K5]	1	2	3	3	1	1	-
Weightage of the course	11	6	12	9	4	5	0
Weighted percentage of Course contribution to POs	2.3	1.5	4.46	2.79	2.58	2.72	0

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

UNIT I (15 hrs)

Introduction: The Software Engineering Discipline – Programs Vs. Software Products – Why Study Software Engineering – Emergence of Software Engineering – Notable Changes in Software Development Practices – Computer Systems Engineering.

Software Life Cycle Models: Why use a Life Cycle Model – Classical Waterfall Model – Iterative Waterfall Model – Prototyping Model – Evolutionary Model – Spiral Model – Comparison of Different Life Cycle Models.

UNIT II (15 hrs)

Requirements Analysis and Specification: Requirements Gathering and Analysis – Software Requirements Specification (SRS). **Software Design:** Good Software Design – Cohesion And Coupling – Neat Arrangement – Software Design Approaches – Object Oriented Vs Function-Oriented Design.

UNIT III (15 hrs)

Function Oriented Software Design: Overview Of SA/SD Methodology – Structured Analysis – Data Flow Diagrams (DFD's) – Structured Design – Detailed Design.

Interface Design: Characteristics of a Good Interface – Basic Concepts – Types of User Interfaces – Component Based GUI Development – A User Interface Methodology.

UNIT IV (15 hrs)

Coding And Testing: Coding – Code Review – Testing – Testing in the Large Vs Testing in the Small – Unit Testing – Black-Box Testing – White-Box Testing – Debugging – Program Analysis Tools – Integration Testing – System Testing – Some General Issues Associated with Testing.

Software Reliability and Quality Management: Software Reliability – Statistical Testing – Software Quality – Software Quality Management System – SEI Capability Maturity Model – Personal Software Process.

UNIT V (15 hrs)

Computer Aided Software Engineering: CASE and its Scope – CASE Environment – CASE Support in Software Life Cycle – Other Characteristics of CASE Tools – Towards Second Generation CASE Tool – Architecture of a CASE Environment.

Software Maintenance: Characteristic of Software Maintenance – Software Reverse Engineering – Software Maintenance Process Models – Estimation of Maintenance Cost.

TEXTBOOK

1. Rajib Mall. *Fundamentals of Software Engineering.* Prentice-Hall of India, 5Th Edition, 2018.

REFERENCES
Book

1. Richard Fairley. *Software Engineering Concepts.* Tata McGraw-Hill publishing company Ltd, 1997.
2. Roger S. Pressman. *Software Engineering.* McGraw-Hill, 7th Edition.
3. James A. Senn. *Analysis & Design of Information Systems.* McGraw-Hill International Editions, 2nd Edition.

Web Sources

1. https://nptel.ac.in/courses/106/105/106105182/
2. https://onlinecourses.nptel.ac.in/noc19_cs69/preview
3. https://www.javatpoint.com/software-project-planning
4. https://www.softwaretestingmaterial.com/verification-and-validation/
5. https://www.softwaretestingmaterial.com/software-testing/

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF COMPUTER APPLICATIONS
UG Programme – Bachelor of Computer Applications
SEMESTER – V
CORE COURSE – X: ASP.NET PROGRAMMING (23UCAC52)
(From 2023-2024 Batch onwards)

HOURS/WEEK: 5	**INT. MARKS : 25**
CREDITS : 4	**EXT. MARKS : 75**
DURATION : 75 hrs	**MAX. MARKS: 100**

Course Objectives

- To identify and understand the goals and objectives of the .NET framework and ASP.NET with C# language.
- To develop ASP.NET Web application using standard controls.
- To handles SQL Server Database using ADO.NET.
- To understand the Grid view control and XML classes.

Course Outcomes (CO)

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

CO1[K1]: define the working knowledge of C# programming constructs and the .NET framework

CO2[K2]: discuss the software development to solve real-world problems using ASP.NET

CO3[K3]: identify the various controls and its properties

CO4[K4]: simplify the creation of a web application using Microsoft ADO.NET.

CO5[K5]: evaluate the principles of web application development using XML

CO-PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	2	3	1	1	-	-	-
CO2[K2]	2	2	2	2	-	1	-
CO3[K3]	3	2	3	2	1	1	-
CO4[K4]	3	2	2	2	2	1	2
CO5[K5]	2	1	1	1	2	1	1
Weightage of the course	12	10	9	8	5	4	3
Weighted percentage of Course contribution to POs	2.51	2.51	3.35	2.48	3.23	2.17	1.66

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

UNIT I   (15 hrs)

Overview of .NET framework: Common Language Runtime (CLR), Framework Class Library. **C# Fundamentals:** Primitive Types and Variables – Operators – Conditional statements – Looping statements – Creating and Using Objects – Arrays – String Operations.

UNIT II   (15 hrs)

Introduction to ASP.NET: IDE – Languages Supported Components – Working with Web Forms. **Web Form Standard Controls:** Properties and its Events – HTML Controls. **List Controls:** Properties and its Events.

UNIT III   (15 hrs)

Rich Controls: Properties and its Events. **Validation Controls:** Properties and its Events – File Stream Classes – File Modes – File Share – Reading and Writing to Files – Creating, Moving, Copying and Deleting Files – File Uploading.

UNIT IV   (15 hrs)

ADO.NET Overview: Database Connections – Commands – Data Reader – Data Adapter – Data Sets – Data Controls and its Properties – Data Binding.

UNIT V   (15 hrs)

Grid View Control: Deleting, Editing, Sorting and Paging – XML Classes – Web Form to Manipulate XML Files – Website Security – Authentication – Authorization – Creating a Web Application.

TEXTBOOKS
1. Mathew, Mac Donald. *The Complete Reference ASP.NET*. Tata McGraw-Hill, 2015.
2. Svetlin Nakov, Veselin Kolev & Co. *Fundamentals of Computer Programming with C#*. Faber publication, 2019.

REFERENCES
Books
1. Herbert Schildt. *The Complete Reference C#.NET*. Tata McGraw-Hill, 2017.
2. Kogent Learning Solutions. *C# 2012 Programming Covers .NET 4.5 Black Book*. Dreamtech press, 2013.
3. Anne Boehm, Joel Murach. *Murach's C# 2015*. Mike Murach & Associates Inc. 2016.
4. Denielle Otey, Michael Otey. *ADO.NET: The Complete reference.* McGrawHill, 2008.
5. Matthew Mac Donald. *Beginning ASP.NET 4 in C#* 2010. APRESS, 2010.

Web Sources
1. https://www.geeksforgeeks.org/introduction-to-net-framework/
2. https://www.javatpoint.com/net-framework

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF COMPUTER APPLICATIONS
UG Programme – Bachelor of Computer Applications
SEMESTER – V
CORE COURSE – XI: PRACTICAL: ASP.NET PROGRAMMING (23UCAC5P)
(From 2023–2024 Batch onwards)

HOURS/WEEK: 5	**INT. MARKS : 25**
CREDITS : 4	**EXT. MARKS : 75**
DURATION : 75 hrs	**MAX. MARKS: 100**

Course Objectives
• To develop ASP.NET Web application using standard controls.
• To create rich database applications usingADO.NET.
• To implement file handling operations
• To implement XML classes.
• To utilize ASP.NET security features for authenticating the website

Course Outcomes (CO)
On successful completion of the course, the learners will be able to
CO1[K1]: explain the Microsoft .NET Framework and ASP.NET page structure
CO2[K2]: discuss the development of web application with variety of controls
CO3[K3]: use Microsoft ADO.NET to access data in web application
CO4[K4]: analyze the configuration steps to deploy web application
CO5[K5]: assess the data using inbuilt data access tools

CO-PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	2	3	1	1	-	-	-
CO2[K2]	2	2	2	2	-	1	-
CO3[K3]	3	2	3	2	1	1	-
CO4[K4]	3	3	2	-	2	1	2
CO5[K5]	2	2	1	1	2	1	1
Weightage of the course	12	12	9	6	5	4	3
Weighted percentage of Course contribution to POs	2.51	3.01	3.35	1.86	3.23	2.17	1.66

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

1. Create an exposure of Web applications and tools.
2. Implement the Html Controls.
3. Implement the Server Controls.

4. Web application using Web controls.
5. Web application using List controls.
6. Web Page design using Rich control. Validate user input using Validation controls. Working with File concepts.
7. Web application using Data Controls.
8. Data binding with Web controls.
9. Data binding with Data Controls.
10. Database application to perform insert, update and delete operations.
11. Database application using Data Controls to perform insert, delete, edit, paging and sorting operation.
12. Implement the Xml classes.
13. Implement Authentication – Authorization.
14. Ticket reservation using ASP.NET controls.
15. Online examination using ASP.NET controls.

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF COMPUTER APPLICATIONS
UG Programme – Bachelor of Computer Applications
SEMESTER – V
CORE COURSE – XII: PROJECT WITH VIVA VOCE (23UCAJ51)
(From 2023–2024 Batch onwards)

HOURS/WEEK: 5		**INT. MARKS : 25**
CREDITS	**: 4**	**EXT. MARKS : 75**
DURATION	**: 75 hrs**	**MAX. MARKS: 100**

Course Objectives

- To understand why that knowledge and those skills will be useful to them.
- To focus on the context and potential applications of knowledge and skills.
- To developing independent thinking on the subject and enables to gain practical experience in research methodology
- To apply the theoretical concepts learned in the programme to real-life situations.
- To make logical thinkers and apply the conceptual knowledge in a meaningful way.

Course Outcomes (CO)

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

CO1[K1]: identify the needs of the project
CO2[K2]: illustrate the problem and solutions
CO3[K3]: develop the software to find solutions for complex problems
CO4[K4]: examine the developed components
CO5[K5]: evaluate or integrate with existing project

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 [K4]	-	2	1	3	1	1	1
CO5 [K5]	1	3	3	3	2	2	1
Weightage of the course	09	12	04	10	03	08	05
Weighted percentage of Course contribution to POs	1.88	3.01	1.49	3.1	1.94	4.35	2.76

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 25 marks for Internal Assessment and 75 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 60 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 (25 Marks)
Project Report & Review : 15 Marks
PowerPoint Presentation : 5 Marks
Demo/Performance   : 5 Marks

External Examination (75 Marks)
Project Report : 25 Marks
Viva Voce   : 50 Marks

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF COMPUTER APPLICATIONS
UG Programme – Bachelor of Computer Applications
SEMESTER – V
ELECTIVE COURSES GENERIC/DISCIPLINE SPECIFIC – V: IOT & ITS APPLICATIONS
(23UCAO51)
(From 2023–2024 Batch onwards)

HOURS/WEEK: 4	**INT. MARKS : 25**
CREDITS : 3	**EXT. MARKS : 75**
DURATION : 60 hrs	**MAX. MARKS: 100**

Course Objectives
• To use of Devices, Gateways and Data Management in IoT.
• To design IoT applications in different domain and be able to analyze their performance.
• To implement basic IoT applications on embedded platform.
• To gain knowledge on Industry Internet of Things.
• To learn about the privacy and Security issues in IoT.

Course Outcomes (CO)
On successful completion of the course, the learners will be able to
CO1 [K1]: recall the concepts of Internet of Things
CO2[K2]: discuss the basic IoT applications on embedded platform
CO3[K3]: identify the IoT applications in different domain and be able to analyze their performance
CO4[K4]: analyze basic protocols in wireless sensor network
CO5[K5]: assess the smart objects and the technologies to connect them to network

CO-PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	2	3	1	1	-	-	-
CO2[K2]	2	2	2	2	-	1	-
CO3[K3]	3	3	2	2	1	1	-
CO4[K4]	3	2	-	2	2	1	2
CO5[K5]	3	2	1	2	2	1	1
Weightage of the course	13	12	6	9	5	4	3
Weighted percentage of Course contribution to POs	2.71	3.01	2.23	2.79	3.23	2.17	1.66

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

UNIT I (12 hrs)

IoT & Web Technology: The Internet of Things Today – Time for Convergence – Towards the IoT Universe – Internet of Things Vision – IoT Strategic Research and Innovation Directions – IoT Applications – Future Internet Technologies – Infrastructure – Networks and Communication – Processes – Data Management – Security – Privacy & Trust – Device Level Energy Issues – IoT Related Standardization – Recommendations on Research Topics.

UNIT II (12 hrs)

M2M to IoT: A Basic Perspective – Introduction – Some Definitions – M2M Value Chains – IoT Value Chains – An Emerging Industrial Structure for IoT – The International Driven Global Value Chain and Global Information Monopolies. **M2M to IoT:** An Architectural Overview – Building an Architecture – Main Design Principles and Needed Capabilities – An IoT Architecture Outline – Standards Considerations

UNIT III (12 hrs)

IoT Architecture: State of the Art – Introduction – State of the Art – Architecture. **Reference Model:** Introduction – Reference Model and Architecture – IoT Reference Model – IoT Reference Architecture – Introduction – Functional View – Information View – Deployment and Operational View – Other Relevant Architectural Views

UNIT IV (12 hrs)

IoT Applications for Value Creations: Introduction – IoT applications for industry – Future Factory Concepts – Brownfield IoT – Smart Objects – Smart Applications – Four Aspects in your Business to Master IoT – Value Creation from Big Data and Serialization – IoT for Retailing Industry – IoT For Oil and Gas Industry – Opinions on IoT Application and Value for Industry – Home Management.

UNIT V (12 hrs)

Internet of Things Privacy, Security and Governance Introduction: Overview of Governance – Privacy and Security Issues – Contribution from FP7 Projects – Security, Privacy and Trust in IoT – Data-Platforms for Smart Cities – First Steps Towards a Secure Platform – Smartie Approach – Data Aggregation for the IoT in Smart Cities – Security.

TEXTBOOK
1. Vijay Madisetti and Arshdeep Bahga, *Internet of Things: (A Hands-on Approach)*. Universities Press (INDIA) Private Limited, 1st Edition, 2014.

REFERENCES

Books

1. William Stallings. *Operating System: Internals and Design Principles.* Prentice-Hall of India, 7th Edition, 2012.
2. A. Silberschatz and P.B. Galvin. *Operating Systems Concepts*. John Wiley & Sons (ASIA) Pvt Ltd, 9th Edition, 2012.
3. Michael Miller. *The Internet of Things: How Smart TVs, Smart Cars, Smart Homes, and Smart Cities Are Changing the World*, kindle version.
4. Francis daCosta. *Rethinking the Internet of Things: A Scalable Approach to Connecting Everything*, Apress Publications, 1st Edition, 2013.
5. WaltenegusDargie, ChristianPoellabauer. *Fundamentals of Wireless Sensor Networks: Theory and Practice*.
6. CunoPfister. *Getting Started with the Internet of Things*, O"Reilly Media, 2011.

Web Sources

1. https://www.simplilearn.com
2. https://www.javatpoint.com
3. https://www.w3schools.com

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF COMPUTER APPLICATIONS
UG Programme – Bachelor of Computer Applications
SEMESTER – V
ELECTIVE COURSES GENERIC/DISCIPLINE SPECIFIC – V: ARTIFICIAL
INTELLIGENCE (23UCAO52)
(From 2023–2024 Batch onwards)

HOURS/WEEK : 4		**INT. MARKS : 25**	
CREDITS : 3		**EXT. MARKS : 75**	
DURATION : 60 hrs		**MAX. MARKS: 100**	

Course Objectives
- To learn various concepts of AI Techniques.
- To learn various Search Algorithm in AI.
- To learn probabilistic reasoning and models in AI.
- To learn about Markov Decision Process.
- To learn various type of Reinforcement learning.

Course Outcomes (CO)
On successful completion of the course, the learners will be able to
CO1[K1]: recall the various concepts of AI Techniques.
CO2[K2]: discuss the concept of various Search Algorithm in AI.
CO3[K3]: apply the probabilistic reasoning and models in AI.
CO4[K4]: analyze the Markov Decision Process.
CO5[K5]: assess the various type of Reinforcement learning Techniques.

CO-PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	2	3	1	1	-	-	-
CO2[K2]	2	2	2	2	-	1	-
CO3[K3]	3	3	2	2	1	1	-
CO4[K4]	3	2	-	2	2	1	2
CO5[K5]	3	2	1	2	2	1	1
Weightage of the course	13	12	6	9	5	4	3
Weighted percentage of Course contribution to POs	2.71	3.01	2.23	2.79	3.23	2.17	1.66

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

UNIT I (12 hrs)

Introduction: Concept of AI – History – Current Status – Scope – Agents – Environments – Problem Formulations – Review of Tree and Graph Structures – State Space Representation – Search Graph and Search Tree.

UNIT II (12 hrs)

Search Algorithms: Random Search – Search with Closed and Open List – Depth First and Breadth First Search – Heuristic Search – Best First Search – A* Algorithm – Game Search.

UNIT III (12 hrs)

Probabilistic Reasoning: Probability – Conditional Probability – Bayes Rule – Bayesian Networks – Representation – Construction and Inference – Temporal Model – Hidden Markov Model.

UNIT IV (12 hrs)

Markov Decision Process: MDP Formulation – Utility Theory – Utility Functions – Value Iteration – Policy Iteration and Partially Observable MDPs.

UNIT V (12 hrs)

Reinforcement Learning: Passive Reinforcement Learning – Direct Utility Estimation – Adaptive Dynamic Programming – Temporal Difference Learning– Active Reinforcement Learning – Q learning.

TEXTBOOKS
1. Stuart Russell and Peter Norvig. *Artificial Intelligence: A Modern Approach*. Prentice Hall, 3rd Edition.
2. Elaine Rich and Kevin Knight. *Artificial Intelligence*. Tata McGraw Hill.

REFERENCES
Books
1. Trivedi, M.C. *A Classical Approach to Artifical Intelligence*. Khanna Publishing House, Delhi.
2. Saroj Kaushik. *Artificial Intelligence*. Cengage Learning India, 2011.
3. David Poole and Alan Mackworth. *Artificial Intelligence: Foundations for Computational Agents*. Cambridge University Press, 2010.

Web Sources
1. NPTEL & MOOC courses titled Artificial Intelligence and Expert Systems
2. https://nptel.ac.in/courses/106106140/
3. https://nptel.ac.in/courses/106106126/

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF COMPUTER APPLICATIONS
UG Programme – Bachelor of Computer Applications
SEMESTER – V
ELECTIVE COURSES GENERIC/DISCIPLINE SPECIFIC – VI: BIG DATA ANALYTICS
(23UCAO53)
(From 2023–2024 Batch onwards)

HOURS/WEEK: 4	INT. MARKS : 25
CREDITS : 3	EXT. MARKS : 75
DURATION : 60 hrs	MAX. MARKS: 100

Course Objectives

• To understand the problem solving approaches.
• To learn the basic programming constructs in R Programming.
• To learn the basic programming constructs in R Programming.
• To use R Programming data structures - lists, tuples, and dictionaries.
• To do input/output with files in R Programming.

Course Outcomes (CO)

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

CO1[K1]: describe the big data tools and its analysis techniques.
CO2[K2]: express the clustering and classification algorithms.
CO3[K3]: apply different mining algorithms and recommendation
          systems for large volumes of data.
CO4[K4]: simplify the data analytics on data streams.
CO5[K5]: discuss the concept of NoSQL databases and management.

CO-PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	2	3	1	1	-	-	-
CO2[K2]	2	2	2	2	-	1	-
CO3[K3]	3	3	2	2	1	1	-
CO4[K4]	3	2	-	2	2	1	2
CO5[K5]	3	2	1	2	2	1	1
Weightage of the course	13	12	6	9	5	4	3
Weighted percentage of Course contribution to POs	2.71	3.01	2.23	2.79	3.23	2.17	1.66

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

UNIT I   (12 hrs)
Evolution of Big Data: Best Practices for Big Data Analytics – Big Data Characteristics – Validating – The Promotion of the Value of Big Data – Big Data Use Cases – Characteristics of Big Data Applications – Perception and Quantification of Value – Understanding Big Data Storage – A General Overview of High – Performance Architecture – HDFS – MapReduce And Yarn – MapReduce Programming Model.

UNIT II   (12 hrs)
Control Structures And Vectors: Control Structures – Functions – Scoping Rules – Dates and Times – Introduction to Functions – Preview of Some Important R Data Structures – Vectors – Character Strings – Matrices – Lists – Data Frames. **Classes Vectors:** Generating Sequences – Vectors and Subscripts – Extracting Elements of a Vector using Subscripts – Working with Logical Subscripts – Scalars – Vectors – Arrays and Matrices – Adding and Deleting Vector Elements – Obtaining the Length of a Vector – Matrices and Arrays as Vectors – Vector Arithmetic and Logical Operations – Vector Indexing – Common Vector Operations.

UNIT III   (12 hrs)
Lists: Creating Lists – General List Operations – List Indexing adding and deleting List Elements – Getting the Size of a List. **Extended Example:** Text Concordance Accessing List Components and Values Applying Functions to Lists – Data Frames – Creating Data Frames – Accessing Data Frames – Other Matrix – Like Operations.

UNIT IV   (12 hrs)
Factors And Tables: Factors and Levels – Common Functions used with Factors – Working with Tables – Matrix/Array – Like Operations on Tables – Extracting a Sub Table – Finding the Largest Cells in a Table – Math Functions – Calculating a Probability – Cumulative Sums and Products – Minima and Maxima – Calculus – Functions for Statistical Distributions R Programming.

UNIT V   (12 hrs)
Object Oriented Programming: S Classes – S Generic Functions – Writing S Classes – Using Inheritance – S Classes – Writing S Classes – Implementing a Generic Function on an S Class – Visualization – Simulation – Code Profiling – Statistical Analysis with R – Data Manipulation.

TEXTBOOKS
1. Roger D. Peng. *R Programming for Data Science.* 2012.
2. Norman Matloff. *The Art of R Programming- A Tour of Statistical Software Design.* 2011.

REFERENCES
Books
1. Garrett Grolemund, Hadley Wickham. *Hands-On Programming with R: Write Your Own Functions and Simulations*. 1st Edition, 2014.
2. Venables , W.N.,and Ripley. *S programming*. Springer, 2000.

Web Sources
1. https://www.simplilearn.com
2. https://nptel.ac.in/courses/106/104/106104189/
3. https://nptel.ac.in/noc/courses/noc19/SEM1/noc19-cs33/
4. https://www.sas.com/en_in/insights/big-data/hadoop.html

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF COMPUTER APPLICATIONS
UG Programme – Bachelor of Computer Applications
SEMESTER – V
ELECTIVE COURSES GENERIC/DISCIPLINE SPECIFIC – VI: COMPUTATIONAL INTELLIGENCE (23UCAO54)
(From 2023–2024 Batch onwards)

HOURS/WEEK: 4	**INT. MARKS : 25**
CREDITS : 3	**EXT. MARKS : 75**
DURATION : 60 hrs	**MAX. MARKS: 100**

Course Objectives

- To identify and understand the basics of AI and its search.
- To study about the fuzzy logic systems.
- Understand and apply the concepts of Neural Network and its functions.
- To study about the Genetic Algorithm.
- To understand the concepts of Artificial Neural Network.

Course Outcomes (CO)

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

CO1[K1]: describe the fundamentals of artificial intelligence & searching techniques
CO2[K2]: explain the fuzzy logic sets, membership function and de-fuzzification techniques
CO3[K3]: apply the concepts of Neural Network & analyze the learning techniques
CO4[K4]: analyze the artificial neural networks and its applications.
CO5[K5]: evaluate the concept of Genetic Algorithm and Analyze the optimization problems using gas.

CO-PO Mapping table (Course Articulation Matrix)

PO⟍CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	2	3	1	1	-	-	-
CO2[K2]	2	2	2	2	-	1	-
CO3[K3]	3	3	2	2	1	1	-
CO4[K4]	3	2	-	2	2	1	2
CO5[K5]	3	2	1	2	2	1	1
Weightage of the course	13	12	6	9	5	4	3
Weighted percentage of Course contribution to POs	2.71	3.01	2.23	2.79	3.23	2.17	1.66

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

UNIT I   (12 hrs)

Introduction to AI: Problem Formulation – AI Applications – Problems – State Space and Search – Production Systems – Breadth First and Depth First – Travelling Salesman Problem – **Heuristic Search techniques:** Generate and Test – Types of Hill Climbing.

UNIT II   (12 hrs)

Fuzzy Logic Systems: Notion of Fuzziness – Operations on Fuzzy Sets – T-norms and Other Aggregation Operators – Basics of Approximate Reasoning – Compositional Rule of Inference – Fuzzy Rule Based Systems – Schemes of Fuzzification – Inferencing – Defuzzification – Fuzzy Clustering – Fuzzy Rule Based Classifier.

UNIT III   (12 hrs)

Neural Networks: What is Neural Network – Learning Rules and Various Activation Functions – Single Layer Perceptions – Back Propagation Networks – Architecture of Back propagation (BP) Networks – Back Propagation Learning – Variation of Standard Back Propagation Neural Network – Introduction to Associative Memory – Adaptive Resonance Theory and Self Organizing Map – Recent Applications.

UNIT IV   (12 hrs)

Artificial Neural Networks: Fundamental Concepts – Basic Models of Artificial Neural Networks – Important Terminologies of ANNs – McCulloch-Pitts Neuron – Linear Separability – Hebb Network.

UNIT V   (12 hrs)

Genetic Algorithm: Introduction – Biological Background – Genetic Algorithm Vs Traditional Algorithm – Basic Terminologies in Genetic Algorithm – Simple GA – General Genetic Algorithm – Operators in Genetic Algorithm.

TEXTBOOKS
 1. S.N. Sivanandam and S.N. Deepa. *Principles of Soft Computing*, Wiley India Pvt. Ltd. 2nd Edition.
 2. Stuart Russell and Peter Norvig. *Artificial Intelligence - A Modern Approach.* Pearson Education in Asia, 2nd Edition.
 3. S. Rajasekaran, G. A. Vijayalakshmi. *Neural Networks, Fuzzy Logic and Genetic Algorithms: Synthesis & Applications.* PHI.

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Books
1. F. Martin, Mc neill, and Ellen Thro. *Fuzzy Logic: A Practical approach.* AP Professional, 2000.
2. Chin Teng Lin, C. S. George Lee. *Neuro-Fuzzy Systems.* PHI.

Web Sources

1. https://www.w3schools.com/ai/
2. https://www.javatpoint.com/artificial-intelligence-tutorial

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
UG PROGRAMME
SEMESTER –V
VALUE EDUCATION (23UVED51)
(From 2023–2024 Batch onwards)

HOURS/WEEK: 2 (L-2, T-)	**INT. MARKS : 25**
CREDIT : 2	**EXT. MARKS : 75**
DURATION : 30 hrs	**MAX. MARKS: 100**

Course Objectives
- To inculcate the values towards personal development.
- To know the social values for the global development.
- To ensure the modern challenges of Adolescent.
- To be aware of human right.
- To enrich the knowledge to control the mind.

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[K5]: assess 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 [K5]	1	1	-	1	2	1	1
Weightage of the course	08	05	01	05	09	04	07
Weighted percentage of Course contribution to POs	1.67	1.25	0.37	1.55	5.81	2.17	3.87

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

UNIT I – CONCEPT OF HUMAN VALUES, VALUE EDUCATION TOWARDS PERSONAL DEVELOPMENT (6 hrs)

Aim of Education and Value Education; Evolution of Value Oriented Education; Concept of Human Values; Types of Values; Components of Value Education. **Personal Development:** Self Analysis and Introspection; Sensitization Towards Gender Equality, Physically Challenged, Intellectually Challenged. Respect to - Age, Experience, Maturity, Family Members, Neighbours, Co-Workers. **Character Formation towards Positive Personality:** Truthfulness, Constructivity, Sacrifice, Sincerity, Self-Control, Altruism, Tolerance, Scientific Vision.

UNIT II – VALUE EDUCATION TOWARDS NATIONAL AND GLOBAL DEVELOPMENT (6 hrs)

National and International Values: Constitutional or national values - Democracy, socialism, secularism, equality, justice, liberty, freedom and fraternity. Social Values - Pity and probity, self-control, universal brotherhood. Professional Values - Knowledge thirst, sincerity in profession, regularity, punctuality and faith. Religious Values - Tolerance, wisdom, character. Aesthetic values - Love and appreciation of literature and fine arts and respect for the same. National Integration and international understanding.

UNIT III – IMPACT OF GLOBAL DEVELOPMENT ON ETHICS AND VALUES (6 hrs)

Conflict of cross-cultural influences, mass media, cross-border education, materialistic values, professional challenges and compromise. Modern Challenges of Adolescent Emotions and behavior; Sex and spirituality: Comparison and competition; positive and negative thoughts. Adolescent Emotions, arrogance, anger, sexual instability, selfishness, defiance

UNIT IV – THERAUPATIC MEASURES (6 hrs)

Control of the mind through
1. Simplified physical exercise
2. Meditation – Objectives, types, effect on body, mind and soul
3. Yoga – Objectives, Types, Asanas
4. Activities: (i) Moralisation of Desires (ii) Neutralisation of Anger (iii)Eradication of Worries (iv)Benefits of Blessings

UNIT V – HUMAN RIGHTS (6 hrs)

Concept of Human Rights – Indian and International Perspectives - Evolution of Human Rights - Definitions under Indian and International documents - **Broad classification of Human Rights and Relevant Constitutional Provisions -** Right to Life, Liberty and Dignity - Right to Equality - Right against Exploitation - Cultural and

Educational Rights - Economic Rights - Political Rights - Social Rights - **Human Rights of Women and Children -** Social Practice and Constitutional Safeguards - Female Foeticide and Infanticide - Physical assault and harassment - Domestic violence - Conditions of Working Women - **Institutions for Implementation -** Human Rights Commission – Judiciary - Violations and Redressel - Violation by State - Violation by Individuals - Nuclear Weapons and terrorism - Safeguards.

REFERENCES
Books
1. Pitchaikani Prabhaharan, A. Babu Franklin, M.Archana Devi, *Value education*, Sri Kaliswari College (Autonomous), Sivakasi, 2017.
2. Subramanyam, K. *Values in Education*, Ramana Publications, 1995
3. Swamy Chidbhavananda, *Indian National Education*, Publication by Ramakirshna Tapovanam.

Web Sources
1. https://www.youtube.com/watch?v=ruKY3GqBvYQ.
2. https://www.republicworld.com/technology-news/science/15-famous-indian-scientists-list-know-what-were-their-innovations.html.
3. https://www.youtube.com/watch?v=M9_l9DDvEsw.

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF COMPUTER APPLICATIONS
UG Programme – Bachelor of Computer Applications
SEMESTER – V
INTERNSHIP/INDUSTRIAL TRAINING (23UCAJ52)
(From 2023–2024 Batch onwards)

HOURS/WEEK: -	**INT. MARKS : 25**
CREDITS : 2	**EXT. MARKS : 75**
DURATION : 25 Days	**MAX. MARKS: 100**

Course Objectives

- To learn and develop new skills relevant to the field of study or career interests.
- To understand different departments, roles, and functions within the organization to broaden knowledge and explore potential career paths.
- To apply the knowledge gained in academic studies to real-world scenarios.
- To bridge the gap between classroom learning and professional life.
- To gain exposure to different tasks, projects, and challenges relevant to the chosen field.

Course Outcomes (CO)

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

CO1 [K1]: identify different career paths within the industry and gain insights into potential future roles

CO2 [K3]: apply theoretical concepts and academic knowledge to real-world situations and challenges encountered during the internship

CO3[K4]: analyse problems, generate innovative solutions, and make informed decisions

CO4[K5]: evaluate how to manage time effectively and prioritize tasks to meet deadlines and deliver quality work

CO5 [K6]: create a portfolio of the work, projects, and achievements during the internship

CO-PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1 [K1]	3	2	-	1	1	1	2
CO2 [K3]	2	3	-	1	-	1	2
CO3 [K4]	2	2	-	2	-	1	1
CO4 [K5]	-	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	1.67	3.01	1.49	2.17	0.65	2.72	4.42

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

Guidelines

1. Each Student has to undergo 25 days institutional/industry based training during the fourth semester summer vacation.
2. Internships could be undertaken in different media organizations, industries and educational institutions which should be approved by the department.
3. Students should keep a detailed record of activities performed and hours spent in training and report the same to the Faculty Coordinator/Mentor/Guide regularly about the progress of internship on weekly basis.
4. At the end of the internship, the student must submit a full-fledged detailed internship report (not exceeding 20 pages) along with attendance certificate.
5. The Internship carries 100 marks out of which 25 marks for Internal and 75 Marks for External.
6. The viva voce board shall consist of the Head of the Department and the Internal Examiner (Senior Faculty member).
7. The training programme shall be evaluated as per the following pattern.

Internal Assessment (25 Marks)   **External Examination(75 Marks)**

Training Report & Review   : 15 Marks   Training Report: 35 Marks
Daily Log Report/Attendance : 5 Marks   Viva Voce   : 40 Marks
PPT Presentation   : 5 Marks

EACH INTERNSHIP REPORT WILL FOLLOW THE FORMAT DESCRIBED
- 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
7. Implementation
8. Conclusion
9. Appendix

Text Format in the Report
- ✓ Times New Roman 12 with 1.5 line
- ✓ Margins 1.5" left and 1" all other

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF COMPUTER APPLICATIONS
UG Programme – Bachelor of Computer Applications
SEMESTER – VI
CORE COURSE – XIII: COMPUTER NETWORKS (23UCAC61)
(From 2023–2024 Batch onwards)

HOURS/WEEK: 6	**INT. MARKS : 25**
CREDITS : 4	**EXT. MARKS : 75**
DURATION : 90 hrs	**MAX. MARKS: 100**

Course Objectives
- To understand the concept of Data communication and Computer network.
- To get a knowledge on routing algorithms.
- To impart knowledge about networking and internetworking devices.
- To study about Network communication.
- To learn the concept of Transport layer.

Course Outcomes (CO)
On successful completion of the course, the learners will be able to

CO1[K1]: recall the basics of Computer Network architecture, OSI and
        TCP/IP reference model

CO2[K2]: explain the knowledge on Telephone systems using wireless network

CO3[K3]: apply the concept of MAC, datalink layer, framing and error control

CO4[K4]: analyze the characteristics of Routing and Congestion control
        algorithms

CO5[K5]: evaluate network security and define various protocols such as FTP,
        HTTP, Telnet, DNS

CO-PO Mapping table (Course Articulation Matrix)

PO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	3	3	2	1	-	1	2
CO2[K2]	2	2	1	1	1	-	2
CO3[K3]	3	3	1	1	-	-	3
CO4[K4]	2	2	2	1	1	-	1
CO5[K5]	2	3	3	1	1	-	3
Weightage of the course	12	13	9	5	3	1	11
Weighted percentage of Course contribution to POs	2.51	3.26	3.35	1.55	1.94	0.54	6.08

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

UNIT I (18 hrs)

Introduction – Network Hardware – Software – Reference Models – OSI and TCP/IP Models – **Example Networks:** Internet, ATM, Ethernet and Wireless LANs – Physical Layer – Theoretical Basis for Data Communication – Guided Transmission Media

UNIT II (18 hrs)

Wireless Transmission – Communication Satellites – Telephone System: Structure, Local Loop, Trunks and Multiplexing and Switching. **Data Link Layer:** Design Issues – Error Detection and Correction.

UNIT III (18 hrs)

Elementary Data Link Protocols – Sliding Window Protocols – Data Link Layer in the Internet – Medium Access Layer – Channel Allocation Problem – Multiple Access Protocols – Bluetooth.

UNIT IV (18 hrs)

Network Layer – Design Issues – Routing Algorithms – Congestion Control Algorithms – IP Protocol – IP Addresses – Internet Control Protocols.

UNIT V (18 hrs)

Transport Layer – Services – Connection Management – Addressing, Establishing and Releasing a Connection – Simple Transport Protocol – Internet Transport Protocols (ITP) – **Network Security:** Cryptography.

TEXTBOOK
 1. A. S. Tanenbaum. *Computer Networks.* Prentice-Hall of India, 4th Edition, 2008.

REFERENCES
Books
1. B.A. Forouzan. *Data Communications and Networking.* Tata McGraw Hill, 4th Edition, 2017.
2. F. Halsall. *Data Communications, Computer Networks and Open Systems*. Pearson Education, 2008.
3. D. Bertsekas and R. Gallagher. *Data Networks*. 2nd Edition, PHI, 2008.
4. Lamarca. *Communication Networks*. Tata McGraw- Hill, 2002.

Web Sources
1. https://en.wikipedia.org/wiki/Computer_network
2. https://citationsy.com/styles/computer-networks

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF COMPUTER APPLICATIONS
UG Programme – Bachelor of Computer Applications
SEMESTER – VI
CORE COURSE – XIV: OPERATING SYSTEM (23UCAC62)
(From 2023–2024 Batch onwards)

HOURS/WEEK: 6	**INT. MARKS : 25**
CREDITS : 4	**EXT. MARKS : 75**
DURATION : 90 hrs	**MAX. MARKS: 100**

Course Objectives
- To understanding the design of the Operating System.
- To imparting knowledge on CPU scheduling, Process and Memory Management.
- To code specialized programs for managing overall resources and operations of the computer.
- To study about the concept of Job and processor scheduling.

Course Outcomes (CO)
On successful completion of the course, the learners will be able to
CO1 [K1]: define the fundamentals of OS and identify the concepts relevant process, process life cycle, Scheduling Algorithms
CO2[K2]: explain the critical analysis of process involving various algorithms, an exposure to threads and semaphores
CO3[K3]: apply the knowledge of handling Deadlock with respective algorithms and measures to retrieve from deadlock
CO4[K4]: analyze the level of Scheduling Algorithms and its types
CO5[K5]: assess the memory organization and management

CO-PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	2	3	1	1	-	-	-
CO2[K2]	2	2	2	2	-	1	-
CO3[K3]	3	2	3	2	1	1	-
CO4[K4]	3	3	2	2	2	1	2
CO5[K5]	2	2	1	1	2	1	2
Weightage of the course	12	12	9	8	5	4	4
Weighted percentage of Course contribution to POs	2.51	3.01	3.35	2.48	3.23	2.17	2.21

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

UNIT I   **(18 hrs)**

        Introduction: Operating System – History (1990s to 2000 and Beyond) – Distributed Computing – Parallel Computation. **Process Concepts:** Definition of Process – Process States – Life Cycle of a Process – Process Management – Process State Transitions – Process Control Block (PCB) – Process Operations – Suspend and Resume – Context Switching – Interrupts – Interrupt Processing – Interrupt Classes – Inter Process Communication – Signals – Message Passing.

UNIT II   **(18 hrs)**

        Asynchronous Concurrent Processes: Mutual Exclusion – Critical Section – Mutual Exclusion Primitives – Implementing Mutual Exclusion Primitives – Peterson's Algorithm – Software Solutions to the Mutual Exclusion Problem – N-Thread Mutual Exclusion – Lamports Bakery Algorithm – Semaphores – Mutual Exclusion with Semaphores – Thread Synchronization with Semaphores – Counting Semaphores – Implementing Semaphores. **Concurrent Programming:** Monitors –Message Passing

UNIT III   **(18 hrs)**

        Deadlock and Indefinite Postponement: Resource Concepts – Four Necessary Conditions for Deadlock – Deadlock Prevention – Deadlock Avoidance and Dijkstra's Banker's Algorithm – Deadlock Detection – Deadlock Recovery.

UNIT IV   **(18 hrs)**

        Job and processor scheduling: Scheduling levels – Scheduling objectives – Scheduling criteria – Preemptive vs non-preemptive scheduling – interval timer or interrupting clock, priorities – scheduling algorithms – FIFO scheduling – RR scheduling, quantum size – SJF scheduling – SRT scheduling – HRN scheduling – multilevel feedback queues – Fair share scheduling.

UNIT V   **(18 hrs)**

        Real Memory Organization and Management: Memory Organization – Memory Management – Memory Hierarchy – Memory Management Strategies – Contiguous vs Non-Contiguous Memory Allocation – Single User Contiguous Memory Allocation – Fixed Partition Multiprogramming – Variable Partition Multiprogramming – Memory Swapping. **Virtual Memory Organization:** Virtual Memory Basic Concepts – Multilevel Storage Organization – Block Mapping – Paging Basic Concepts – Segmentation – Paging/Segmentation Systems. **Virtual Memory Management:** Demand Paging – Page Replacement Strategies

TEXTBOOK
1. H.M. Deitel. *Operating Systems*. Pearson Education Asia, 3rd Edition, 2011.

REFERENCES
Books
1. William Stallings. *Operating System: Internals and Design Principles.* Prentice-Hall of India, 7th Edition, 2012.
2. A. Silberschatz and P.B. Galvin. *Operating Systems Concepts.* John Wiley & Sons (ASIA) Pvt Ltd, 9th Edition, 2012.

Web Sources
1. https://nptel.ac.in/courses/106/102/106102132/
2. https://onlinecourses.nptel.ac.in/noc21_cs88/preview
3. https://onlinecourses.nptel.ac.in/noc21_cs72/preview
4. https://www.youtube.com/watch?v=VG9VopzV_T0
5. https://www.tutorialspoint.com/operating_system/index.htm

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF COMPUTER APPLICATIONS
UG Programme – Bachelor of Computer Applications
SEMESTER – VI
CORE COURSE – XV: PRACTICAL: MOBILE APPLICATION DEVELOPMENT
(23UCAC6P)
(From 2023–2024 Batch onwards)

HOURS/WEEK: 6	INT. MARKS : 25
CREDITS : 4	EXT. MARKS : 75
DURATION : 90 hrs	MAX. MARKS: 100

Course Objectives

- To explain user defined functions and the concepts of class.
- To demonstrate the creation cookies and sessions.
- To facilitate the creation of Database and validate the user inputs.

Course Outcomes (CO)

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

CO1[K1]: recall the concepts of counter, dialogs, intents

CO2[K2]: explain the develop user interfaces for the Android platform.

CO3[K3]: apply Java programming concepts to Android app development.

CO4[K4]: analyze the simple GUI applications, use built-in widgets and components

CO5[K5]: evaluate the work with the database to store data locally in the application

CO-PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	3	1	2	2	2	3	-
CO2[K2]	2	1	3	2	2	-	2
CO3[K3]	2	2	2	-	-	1	1
CO4[K4]	2	1	3	-	1	-	1
CO5[K5]	1	1	1	3	1	1	3
Weightage of the course	10	6	11	7	6	5	7
Weighted percentage of Course contribution to POs	2.09	1.5	4.09	2.17	3.87	2.72	3.87

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

1. Develop an application for Simple Counter.
2. Develop an application to display your personal details using GUI Components.
3. Develop a Simple Calculator that uses radio buttons and text view.
4. Develop an application that uses Intent and Activity.

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5. Develop an application that uses Dialog Boxes.
6. Develop an application to display a Splash Screen.
7. Develop an application that uses Layout Managers.
8. Develop an application that uses different types of Menus.
9. Develop an application that uses to send messages from one mobile to another mobile.
10. Develop an application that uses to send E-mail. Develop an application that plays Audio and Video.
11. Develop an application that uses Local File Storage.
12. Develop an application for Simple Animation.
13. Develop an application for Login Page using Sqlite.
14. Develop an application for Student Mark Sheet processing using Sqlite.

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF COMPUTER APPLICATIONS
UG Programme – Bachelor of Computer Applications
SEMESTER – VI
ELECTIVE COURSES GENERIC/DISCIPLINE SPECIFIC – VII: CLOUD COMPUTING
(23UCAO61)
(From 2023–2024 Batch onwards)

HOURS/WEEK: 5	**INT. MARKS : 25**
CREDITS : 3	**EXT. MARKS : 75**
DURATION : 75 hrs	**MAX. MARKS: 100**

Course Objectives

• Learning fundamental concepts and Technologies of Cloud Computing.
• Learning various cloud service types and their uses and pitfalls.
• To learn about Cloud Architecture and Application design.
• To know the various aspects of application design, benchmarking and security on the Cloud.
• To learn the various Case Studies in Cloud Computing.

Course Outcomes (CO)

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

CO1[K1]: recall the fundamental concepts and Technologies in Cloud computing.
CO2[K2]: explain the various cloud service types and their uses and pitfalls
CO3[K3]: develop the Cloud Architecture and Application design.
CO4[K4]: analyze the various aspects of application design, benchmarking and security in the cloud.
CO5[K5]: justify the various Case Studies in Cloud Computing.

CO-PO Mapping table (Course Articulation Matrix)

PO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	2	2	1	2	1	1	1
CO2[K2]	1	2	1	3	-	1	-
CO3[K3]	3	1	2	1	1	2	1
CO4[K4]	2	2	3	2	-	-	2
CO5[K5]	2	1	-	2	2	-	-
Weightage of the course	10	8	7	10	4	4	4
Weighted percentage of Course contribution to POs	2.09	2.01	2.6	3.1	2.58	2.17	2.21

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

UNIT I   (15 hrs)

Introduction to Cloud Computing: Definition of Cloud Computing – Characteristics of Cloud Computing – Cloud Models – Cloud Service Examples – Cloud-based Services and Applications.

Cloud Concepts and Technologies: Virtualization – Load balancing – Scalability and Elasticity – Deployment – Replication – Monitoring – Software Defined Networking – Network Function Virtualization – Map Reduce – Identity and Access Management – Service Level Agreements – Billing.

UNIT II   (15 hrs)

Cloud Services Compute Services: Amazon Elastic Computer Cloud – Google Compute Engine – Windows Azure Virtual Machines.

Storage Services: Amazon Simple Storage Service – Google Cloud Storage – Windows Azure Storage.

Database Services: Amazon Relational Data Store – Amazon Dynamo DB – Google Cloud SQL – Google Cloud Data Store – Windows Azure SQL Database – Windows Azure Table Service.

Application Services: Application Runtimes and Frameworks – Queuing Services – Email Services – Notification Services – Media Services.

Content Delivery Services: Amazon Cloud Front – Windows Azure Content Delivery Network.

Analytics Services: Amazon Elastic Map Reduce – Google Map Reduce Service – Google Big Query – Windows Azure HD Insight.

Deployment and Management Services: Amazon Elastic Beanstack – Amazon Cloud Formation.

Identity and Access Management Services: Amazon Identity and Access Management – Windows Azure Active Directory.

Open Source Private Cloud Software: Cloud Stack – Eucalyptus – Open Stack.

UNIT III   (15 hrs)

Cloud Application Design: Introduction – Design Consideration for Cloud Applications – Scalability – Reliability and Availability – Security – Maintenance and Upgradation – Performance – Reference Architectures for Cloud Applications

Cloud Application Design Methodologies: Service Oriented Architecture (SOA) – Cloud Component Model – IaaS, PaaS and SaaS Services for Cloud Applications – Model View Controller (MVC) – RESTful Web Services

Data Storage Approaches: Relational Approach (SQL) – Non-Relational Approach (NoSQL).

UNIT IV (15 hrs)

Cloud Application Benchmarking and Tuning: Introduction to Benchmarking – Steps in Benchmarking – Workload Characteristics – Application Performance Metrics – Design Consideration for Benchmarking Methodology – Benchmarking Tools and Types of Tests – Deployment Prototyping.

Cloud Security: Introduction – CSA Cloud Security Architecture – Authentication (SSO) – Authorization – Identity and Access Management – Data **Security :** Securing data at rest, securing data in motion – Key Management – Auditing.

UNIT V (15 hrs)

Case Studies: Cloud Computing for Healthcare – Cloud Computing for Energy Systems – Cloud Computing for Transportation Systems – Cloud Computing for Manufacturing Industry – Cloud Computing for Education.

TEXTBOOK
1. Arshdeep Bahga, Vijay Madisetti. *Cloud Computing – A Hands on Approach*. Universities Press (India) Pvt. Ltd., 2018.

REFERENCES
Books
1. Anthony T Velte, Toby J Velte, Robert Elsenpeter. *Cloud Computing: A Practical Approach*. Tata McGraw-Hill, 2013.
2. Barrie Sosinsky. *Cloud Computing Bible.* Wiley India Pvt. Ltd., 2013.
3. David Crookes. *Cloud Computing in Easy Steps*. Tata McGraw Hill, 2015.
4. Dr. Kumar Saurabh. *Cloud Computing*. Wiley India, Second Edition 2012.

Web Sources
1. https://en.wikipedia.org/wiki/Cloud_computing
2. https://link.springer.com/chapter/10.1007/978-3-030-34957-8_7
3. https://webobjects.cdw.com/webobjects/media/pdf/solutions/cloud-computing/121838-CDW-Cloud-Computing-Reference-Guide.pdf

UG Programme – Bachelor of Computer Applications
SEMESTER – VI
ELECTIVE COURSES GENERIC / DISCIPLINE SPECIFIC – VII: GRID COMPUTING
(23UCAO62)
(From 2023-2024 Batch onwards)

HOURS/WEEK: 5   INT. MARKS : 25
CREDITS   : 3   EXT. MARKS : 75
DURATION   : 75 hrs   MAX. MARKS: 100

Course Objectives
- To learn the basic construction and application of Grid computing.
- To learn grid computing organization and their Role.
- To learn Grid Computing Anatomy.
- To learn Grid Computing road map.
- To learn various type of Grid Architecture.

Course Outcomes (CO)
On successful completion of the course, the learners will be able to
CO1[K1]: identify the front end and back end process of the compiler during compilation
CO2[K2]: draw finite automata from regular expression
CO3[K3]: compare bottom up parsing with top down parsing
CO4[K4]: justify the functionality of each phase involved in compilation
CO5[K5]: construct lexemes, syntax trees, intermediate code for simple language

CO-PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	2	2	1	2	1	1	1
CO2[K2]	1	2	1	3	-	1	-
CO3[K3]	3	1	2	1	1	2	1
CO4[K4]	2	2	3	2	-	-	2
CO5[K5]	2	1	-	2	2	-	-
Weightage of the course	10	8	7	10	4	4	4
Weighted percentage of Course contribution to POs	2.09	2.01	2.6	3.1	2.58	2.17	2.21

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

UNIT I (15 hrs)

Introduction: Early Grid Activity – Current Grid Activity – Overview of Grid Business areas – Grid Applications – Grid Infrastructures.

UNIT II (15 hrs)

Grid Computing organization and their Roles: Organizations Developing Grid Standards and Best Practice Guidelines – Global Grid Forum (GCF) – Organization Developing Grid Computing Toolkits and Framework – Organization and building and using grid based solutions to solve computing – commercial organization building and Grid Based solutions.

UNIT III (15 hrs)

Grid Computing Anatomy: The Grid Problem – The conceptual of virtual organizations – Grid Architecture and relationship to other distributed technology.

UNIT IV (15 hrs)

The Grid Computing Road Map: Autonomic computing – Business on demand and infrastructure virtualization – Service-Oriented Architecture and Grid – Semantic Grids.

UNIT V (15 hrs)

Merging the Grid services Architecture with the Web Services Architecture: Service-Oriented Architecture – Web Service Architecture – XML messages and Enveloping – Service message description Mechanisms – Relationship between Web Services and Grid Services – Web services Interoperability and the role of the WS-I Organization.

TEXTBOOK
 1. Joshy Joseph and Craig Fellenstein. *Grid computing*. Pearson / IBM Press, PTR, 2004.

REFERENCES
Book
1. Ahmer Abbas and Graig computing. *A Practical Guide to technology and applications*. Charles River Media, 2003.

Web Sources
1. https://compilers.iecc.com/crenshaw/tutorfinal.pdf
2. http://www.penguin.cz/~radek/book/lets_build_a_compiler.pdf
3. https://www.geeksforgeeks.org/last-minute-notes-compiler-design-gq/

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF COMPUTER APPLICATIONS
UG Programme – Bachelor of Computer Applications
SEMESTER – VI
ELECTIVE COURSES GENERIC/ DISCIPLINE SPECIFIC – VIII: CRYPTOGRAPHY
(23UCAO63)
(From 2023–2024 Batch onwards)

HOURS/WEEK: 5	**INT. MARKS : 25**
CREDITS : 3	**EXT. MARKS : 75**
DURATION : 75 hrs	**MAX. MARKS: 100**

Course Objectives
- To understand the fundamentals of cryptography.
- To acquire knowledge on standard algorithms used to provide confidentiality, integrity and authenticity.
- To understand the various key distribution and management schemes.
- To understand how to deploy encryption techniques
- To design security applications in the field of Information technology.

Course Outcomes (CO)
On successful completion of the course, the learners will be able to

CO1[K1]: analyze the vulnerabilities in any computing system be able to design a solution

CO2[K2]: apply the different cryptographic operations of symmetric algorithms

CO3[K3]: apply the different cryptographic operations of public key cryptography

CO4[K4]: apply the various Authentication schemes to simulate different applications

CO5[K5]: understand various Security practices and System security standards

CO-PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	3	3	2	1	-	1	2
CO2[K2]	2	2	1	1	1	-	2
CO3[K3]	3	3	1	1	-	-	3
CO4[K4]	2	2	2	1	1	-	1
CO5[K5]	2	3	3	1	1	-	3
Weightage of the course	12	13	9	5	3	1	11
Weighted percentage of Course contribution to POs	2.51	3.26	3.35	1.55	1.94	0.54	6.08

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

UNIT I (15 hrs)

   Introduction: The OSI security Architecture – Security Attacks – Security Mechanisms – Security Services – A model for network Security.

UNIT II (15 hrs)

   Classical Encryption Techniques: Symmetric cipher model – **Substitution Techniques:** Caesar Cipher – Mono Alphabetic cipher – Play fair cipher – Poly Alphabetic Cipher – Transposition techniques – Stenography.

UNIT III (15 hrs)

   Block Cipher and DES: Block Cipher Principles – DES – The Strength of DES – **RSA:** The RSA algorithm.

UNIT IV (15 hrs)

   Network Security Practices: IP Security overview – IP Security architecture – Authentication Header. **Web Security**: Secure Socket Layer and Transport Layer Security – Secure Electronic Transaction.

UNIT V (15 hrs)

   System Security: Intruders – Malicious software – Firewalls.

TEXTBOOK
   1. William Stallings**.** *Cryptography and Network Security Principles and Practices.*

REFERENCES
Books
   1. Behrouz A. Foruzan. *Cryptography and Network Security*. Tata McGraw-Hill, 2007.
   2. AtulKahate. *Cryptography and Network Security*. Second Edition. 2003, TMH.
   3. M.V.Arun Kumar. *Network Security.* 2011, First Edition, USP.

Web Sources
   1. https://www.tutorialspoint.com/cryptography/
   2. https://gpgtools.tenderapp.com/kb/how-to/introduction-to-cryptography

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF COMPUTER APPLICATIONS
UG Programme – Bachelor of Computer Applications
SEMESTER – VI
ELECTIVE COURSES GENERIC / DISCIPLINE SPECIFIC – VIII: IMAGE PROCESSING
(23UCAO64)
(From 2023–2024 Batch onwards)

HOURS/WEEK: 5	**INT. MARKS : 25**
CREDITS : 3	**EXT. MARKS : 75**
DURATION : 75 hrs	**MAX. MARKS: 100**

Course Objectives
- To learn fundamentals of digital image processing.
- To learn about various 2D Image transformations
- To learn about various image enhancement processing methods and filters
- To learn about various classification of Image segmentation techniques
- To learn about various image compression techniques

Course Outcomes (CO)
On successful completion of the course, the learners will be able to
CO1[K1]: recall the fundamental concepts of digital image processing.
CO2[K2]: explain the various 2D Image transformations
CO3[K3]: use the image enhancement processing techniques and filters
CO4[K4]: analyze the classification of Image segmentation techniques
CO5[K5]: justify the principles of various image compression techniques

CO-PO Mapping table (Course Articulation Matrix)

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1[K1]	3	3	2	1	-	1	2
CO2[K2]	2	2	1	1	1	-	2
CO3[K3]	3	3	1	1	-	-	3
CO4[K4]	2	2	2	1	1	-	1
CO5[K5]	2	3	3	1	1	-	3
Weightage of the course	12	13	9	5	3	1	11
Weighted percentage of Course contribution to POs	2.51	3.26	3.35	1.55	1.94	0.54	6.08

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

UNIT I   (15 hrs)

Digital Image Fundamentals: Image Representation – Basic Relationship Between Pixels – Elements of DIP system – Applications of Digital Image Processing – 2D Systems – Classification of 2D Systems – Mathematical Morphology – Structuring Elements – Morphological Image Processing – 2D Convolution – 2D Convolution Through Graphical Method – 2D Convolution Through Matrix Analysis.

UNIT II   (15 hrs)

2D Image transforms: Properties of 2D-DFT – Walsh transform – Hadamard Transform – Haar transform – Discrete Cosine Transform – Karhunen – Loeve Transform – Singular Value Decomposition.

UNIT III   (15 hrs)

Image Enhancement: Spatial Domain Methods – Point Processing – Intensity Transformations – Histogram Processing – Spatial Filtering – Smoothing Filter – Sharpening Filters – **Frequency Domain Methods:** Low Pass Filtering, High Pass Filtering – Homomorphic Filter.

UNIT IV   (15 hrs)

Image Segmentation: Classification of Image Segmentation Techniques – Region Approach – Clustering Techniques – Segmentation Based on Thresholding – Edge Based Segmentation – Classification of Edges – Edge Detection – Hough Transform – Active Contour.

UNIT V   (15 hrs)

Image Compression: Need for Compression – Redundancy – Classification of Image – Compression Schemes – Huffman Coding – Arithmetic Coding – Dictionary Based Compression – Transform Based Compression.

TEXTBOOKS
1. S Jayaraman, S Esakkirajan and T Veerakumar. *Digital Image Processing*. Tata McGraw Hill, 2015.
2. Gonzalez Rafel C. *Digital Image Processing*. Pearson Education, 2009.

REFERENCES
Books
1. Jain Anil K. *Fundamentals of Digital Image Processing*. PHI, 1988.
2. Kenneth R Castleman. *Digital image processing*. Pearson Education, 2/e, 2003.
3. Pratt William K. *Digital image processing*. John Wiley, 4/e, 2007.

Web Sources

1. https://kanchiuniv.ac.in/coursematerials/Digital%20image%20processing%20-Vijaya%20Raghavan.pdf
2. http://sdeuoc.ac.in/sites/default/files/sde_videos/Digital%20Image%20Processing%203rd%20ed.%20-%20R.%20Gonzalez%2C%20R.%20Woods-ilovepdf-compressed.pdf
3. https://dl.acm.org/doi/10.5555/559707
4. https://www.ijert.org/image-processing-using-web-2-0-2

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF COMPUTER APPLICATIONS
UG Programme – Bachelor of Computer Applications
SEMESTER – VI
SKILL ENHANCEMENT COURSE – IX: PROFESSIONAL COMPETENCY SKILL:
ADVANCED EXCEL LAB (23UCAS6P)
(From 2023–2024 Batch onwards)

HOURS/WEEK: 2	**INT. MARKS : 25**
CREDITS : 2	**EXT. MARKS : 75**
DURATION : 30 hrs	**MAX. MARKS: 100**

Course Objectives
- To create worksheets and workbooks with reference to spreadsheets.
- To understand the worksheet editing using advanced enhancements and worksheet features.
- To learn the basic programming constructs in advanced excel.
- To practice various computing strategies for pivot tables.
- To use spreadsheet programming features and to working with lookup tables.

Course Outcomes (CO)
On successful completion of the course, the learners will be able to

CO1[K1]: recall the spreadsheet programming skills in advanced excel

CO2[K2]: explain the lists using pivot tables and pivot table charts

CO3[K3]: develop the skill of designing Use advanced budgeting functions in spreadsheets

CO4[K4]: analyze the data tables and scenario management with Macros

CO5[K5]: justify the smart worksheets to be working with vlookup and hlookup tables

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]	2	2	2	2	2	1	1
CO4[K4]	2	1	2	-	1	1	1
CO5[K5]	2	1	1	1	-	1	1
Weightage of the course	10	8	6	5	4	3	3
Weighted percentage of Course contribution to POs	2.09	2.01	2.23	1.55	2.58	1.63	1.66

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

1. Create/Navigate/Format/Print worksheets and workbooks
2. Format data in cells and ranges; Order & Group Cells/Ranges
3. Create/Modify a table; Filter and sort a table
4. Pivot Table, Pivot Charts, Slicers, Power Pivot
5. Utilize cell ranges and references in formulas and functions
6. Utilize Conditional logic in functions (IF,AND,OR, NESTED IF, etc)
7. Macros (recording macros, assign macro, VBA basics)
8. Format and modify text with functions (Text Formulas)
9. VLOOKUP, HLOOKUP, INDEX, MATCH functions
10. Date/Time Functions
11. Protecting Workbooks

SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI
DEPARTMENT OF COMPUTER APPLICATIONS
UG Programme – Bachelor of Computer Applications
SEMESTER V & VI
PART V – EXTENSION
(From 2023–2024 Batch Onwards)

HOURS/WEEK: -
CREDIT   : 1
DURATION   : -   INT. MARKS: 100

Course Objectives

- To promote community involvement, encourage civic participation, and foster a sense of ownership and responsibility.
- To involve the learners in organizing campaigns, seminars, or public events to educate the public, promote understanding, and advocate for positive change.
- To create platforms for knowledge sharing, partnership development, and collective action.
- To encourage environmental conservation, promote responsible resource management, or foster sustainable livelihoods.
- To raise awareness about social issues, advocate for marginalized groups, or implement programs that promote inclusivity and equal opportunities.

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/nonverbal 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	1.67	0.5	0.37	2.17	5.81	4.35	2.76

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