

**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 Information Technology**

**UG Programme**

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

**Curriculum Design and Development Cell**

**Annexure I**

**SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI**  
(AFFILIATED TO MADURAI KAMARAJ UNIVERSITY, MADURAI)  
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**Programme Scheme, Scheme of Examination and Syllabi**  
(From 2023-2024 Batch onwards)

# **Department of Information Technology**

**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 INFORMATION TECHNOLOGY**  
**MEMBERS OF BOARD OF STUDIES**

<b>S.No.</b>	<b>Board Members</b>	<b>Name and Designation</b>
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2.	University Nominee	<b>Dr.M.Sumathi,M.Sc.,Ph.D</b> Head & Associate Professor Department of Computer Applications, Sri Meenakshi Govt. College for Women, Madurai – 625 002 Mail id: sumathivasagam@gmail.com Mobile: 9976906189
3.	Academic Expert 1.	<b>Dr.T.Balaji , M.C.A., M.Phil., D.C.H., M.Tech., Ph.D.,</b> Assistant Professor, Department of Computer Science, Govt.Arts College , Melur, Madurai – 625 106. Mail id: bkmdgacm1976@gmail.com Mobile: 9626942211
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5.	Industrialist	<b>Mr.R.Rajkumar, M.S (IT &amp; M).,</b> Project & Program Management Specialist Accenture Solutions, Chennai. Mail id: rajuu.ms@gmail.com Mobile: 9842232930
6.	Alumna	<b>Ms.S.Lakshmi Priya., B.Sc(IT).,</b> Software Tester & System Associate, Infosys Pvt Ltd, Chennai
<b>Members</b>		
7.	Mr. S.Muthukumar	Assistant Professor in Information Technology
8.	Mrs.I.Santhiya	Assistant Professor in Information Technology
9.	Mr.B.Munees Deepan	Assistant Professor in Information Technology
10.	Mrs.K.Pandeeswari	Assistant Professor in Information Technology

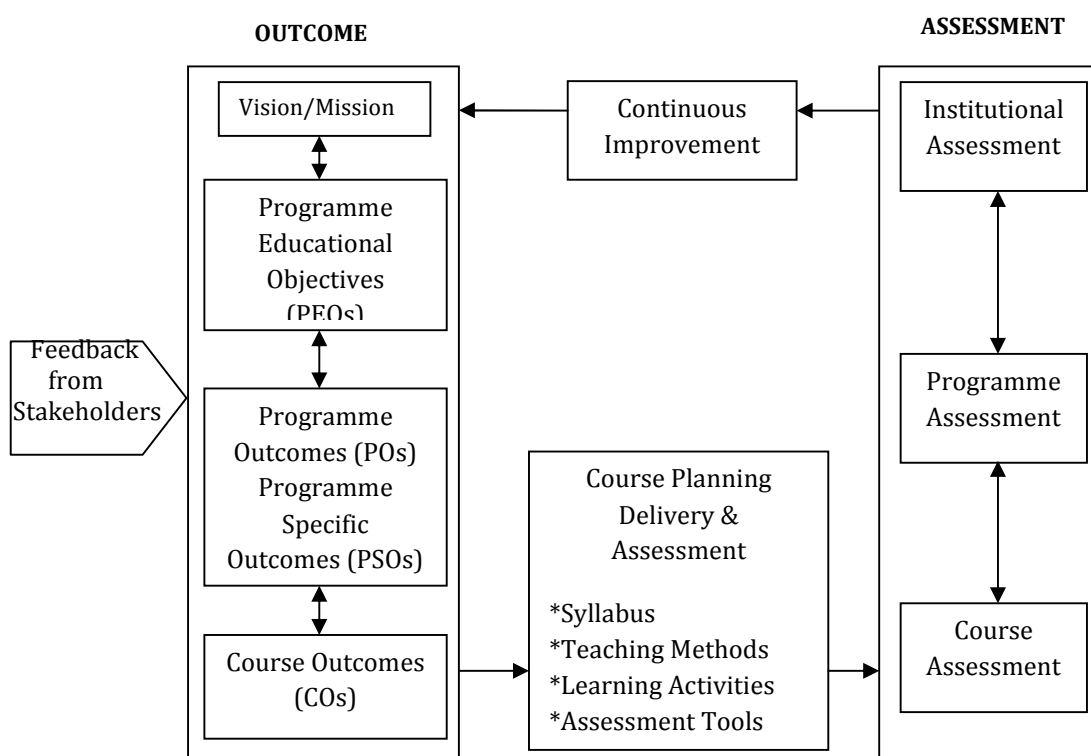
**SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI**  
 (Affiliated to Madurai Kamaraj University, Re-accredited with A Grade (CGPA 3.11) by NAAC)  
**DEPARTMENT OF INFORMATION TECHNOLOGY**  
**UG Programme – B.Sc. Information Technology**  
**GUIDELINES FOR OUTCOME-BASED EDUCATION WITH CHOICE BASED CREDIT SYSTEM**  
**(From 2023-2024 Batch onwards)**

**INTRODUCTION**

Sri Kaliswari College in its pursuit of imparting quality education has 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 focussed 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 instil courage and confidence
- Nurturing the entrepreneurial skills of the rural youth
- Creating competency to meet global challenges
- Imbibing social awareness and social responsibilities

## IV. VISION OF THE DEPARTMENT

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

## V. MISSION OF THE DEPARTMENT

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

## VI. PROGRAMME EDUCATIONAL OBJECTIVES (PEOs)

The Graduates will

**PEO1:** appraise the innate structure of English language; understand various genres and forms and appreciate, analyze, and use different literary-critical concepts and theories in literature.

**PEO2:** demonstrate academic and disciplinary learning through different forms of communication such as essays, dissertations, reports and findings etc and exhibit the ability to read any unfamiliar literary texts.

**PEO3:** exhibit the ability to think and write critically and clearly about one's role as a located Indian citizen of the world by reading English literatures and literatures in translation and use digital resources.

**PEO4:** demonstrate the ability to lead groups, respect and transcend differences and apply subject-specific skills in language and literature to foster a larger sense of ethical and moral responsibility

**PEO5:** recognize the scope of English studies in terms of career opportunities, employment and life-long engagement in teaching, publishing, translating, communication, media, soft skills and other allied fields.

## **VII. PROGRAMME OUTCOMES (POs)**

### **PO1: Disciplinary Knowledge**

Acquire comprehensive knowledge related to their academic disciplines that form a part of an undergraduate programme of study.

### **PO2: Critical Thinking, Problem Solving and Analytical Reasoning**

Develop students' ability of critical observation and capacity to apply their competencies and skills to identify, analyse, evaluate and solve problems in order to draw valid conclusions.

### **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 concepts in their discipline in written and oral form and make use of ICT skills to disseminate knowledge.

### **PO5: Ethics, Values and Multicultural Competence**

Embrace moral and ethical values and apply it with a sense of responsibility in the workplace and community and acquire knowledge on multiple cultures and practise tolerance and respect differences.

### **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 Lifelong Learning**

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

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

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

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

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

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

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

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

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

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

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

PSO \ PO	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
P01	✓						
P02		✓					
P03			✓				
P04				✓			
P05					✓		
P06						✓	
P07							✓

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

PEO \ PO	PEO1	PEO2	PEO3	PEO4	PEO5
P01	✓				
P02		✓			✓
P03			✓		
P04				✓	
P05					✓
P06					✓
P07			✓	✓	

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

**REGULATIONS**

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

**Eligibility**

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

**Medium of Instruction** : English

**Age Limit**

Maximum age limit : 21 Years

**Age Relaxation**

SC/ SCA/ST/BC/BCM/MBC/DNC & Women : 3 years age relaxation

Differently-Abled Students : 5 years age relaxation

**Transitory Permission**

Students joined from 2023 - 2024 may be permitted to write their examinations in this pattern up to April 2031.



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

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

For all Theory Courses : Internal Marks: 25;  
 External Marks: 75

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

**Internal Mark Distribution for Theory Courses**

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

**Internal Mark Distribution for Practical Courses**

<b>Assessment Type</b>	<b>Marks</b>	<b>Scheme of Assessment</b>
<b>Lab work /Program Execution</b>	15 marks	Two Internal Tests will be conducted and the average of the two will be considered
<b>Observation/Record Notebook</b>	5 marks	Assessment will be done during every practical class
<b>Viva -Voce / Lab Quiz</b>	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**

<b>Assessment Type</b>	<b>Marks</b>	<b>Scheme of Assessment</b>
<b>Lab work/Program Execution</b>	65 marks	End result of the Practical
<b>Viva -Voce</b>	10 marks	Oral Mode Test

### Internal Mark Distribution for Courses with both Theory and Practical

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

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

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

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

**Internal Test - 30 Marks - 1 hr Duration**

<b>S.No</b>	<b>Type of Questions</b>	<b>Marks</b>
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 - 75 Marks -3 hrs Duration**

<b>S.No</b>	<b>Type of Questions</b>	<b>Marks</b>
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

**SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI**  
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**UG Programme - B.Sc. Information Technology**

**Attainment of Course outcomes**

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

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

**Direct Assessment of Course outcome attainment**

**i) Rubrics:**

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

**ii) Setting of Target:**

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

**Formula for calculating percentage attainment of each course outcome**

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

**For each Internal Assessment Tools,**

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

$$\begin{array}{l} \text{Percentage attainment of each Course} \\ \text{outcome for Internal} \\ \text{Assessment tools} \end{array} = \begin{array}{l} \text{Average of percentage attainment of all} \\ \text{Internal Assessment tools} \end{array}$$

**For Summative Examinations,**

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

## Formula for calculating Attainment Percentage of Course outcome of a course

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

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

## Final Direct Assessment of Course Outcome Attainment

### For Theory Courses

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

### For Practical Courses

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

## Indirect Assessment of CO Attainment

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

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

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

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

## Final Assessment of CO attainment

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

## Expected Level of Attainment for each of the Course Outcomes

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.

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

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

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**

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

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**DEPARTMENT OF INFORMATION TECHNOLOGY**  
**UG Programme - B.Sc. Information Technology**  
**CURRICULUM STRUCTURE**  
**OUTCOME-BASED EDUCATION WITH CHOICE BASED CREDIT SYSTEM**

**(From 2023-2024 Batch onwards)**

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

<b>Self-paced Learning (Swayam Course)</b>	-	-	-	-	-	<b>1 Credit</b>	<b>1 Credit</b>
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**DEPARTMENT OF INFORMATION TECHNOLOGY**  
**UG Programme - B.Sc. Information Technology**  
**CURRICULUM PATTERN**  
**OUTCOME-BASED EDUCATION WITH CHOICE BASED CREDIT SYSTEM**  
**(From 2023-2024 Batch onwards)**  
**PROGRAMME CODE - UIT**

Semester	Part	Course Code	Course Name	Hours	Credits	Internal Marks	Internal Marks
I	I	23UTAG11	Podhu Tamil / Hindi - I	6	3	25	75
	II	23UENL11	General English - I	6	3	25	75
	III	23UITC11	<b>Core Course -I : Programming in C</b>	5	5	25	75
		23UITC1P	<b>Core Course -II : Practical: C Programming</b>	5	5	25	75
		23UITA11	<b>Elective Course Generic/ Discipline Specific - I: Discrete Mathematics - I</b>	4	3	25	75
	IV	23UITS11	<b>Skill Enhancement Course I: Foundation Fundamentals of Computers</b>	2	2	25	75
		23UITN11	<b>Skill Enhancement Course II: Non Major Elective Course : Office Automation</b>	2	2	25	75
<b>Total</b>				<b>30</b>	<b>23</b>		
II	I	23UTAG21	Podhu Tamil / Hindi - II	6	3	25	75
	II	23UENL21	General English - II	6	3	25	75
	III	23UITC21	<b>Core Course III : Java Programming</b>	5	5	25	75
		23UITC2P	<b>Core Course IV : Practical: Java Programming and Data Structures</b>	5	5	25	75
		23UITA21	<b>Elective Course Generic/ Discipline Specific - II: Discrete Mathematics - II</b>	4	3	25	75
	IV	23UITS2P	<b>Skill Enhancement Course- III: : Advanced Excel</b>	2	2	25	75
		23UITN21	<b>Skill Enhancement Course IV: Non Major Elective Course :Basics of Internet</b>	2	2	25	75
<b>Total</b>				<b>30</b>	<b>23</b>		
III	I	23UTAG31	Podhu Tamil/Hindi- III	6	3	25	75
	II	23UENL31	General English - III	6	3	25	75
	III	23UITC31	<b>Core Course V - : Relational Database Management System</b>	5	5	25	75
		23UITC3P	<b>Core Course - VI : Practical: Relational Database Management System</b>	5	5	25	75
		23UITA31	<b>Elective Course Generic/ Discipline Specific - III: Data Structures</b>	4	3	25	75
	IV	23UITS3P	<b>Skill Enhancement Course- V: (Entrepreneurial Skill)- : Introduction to HTML</b>	1	1	25	75
		23UITS3Q	<b>Skill Enhancement Course - VI: : Web Designing</b>	2	2	25	75
	-	Environmental Studies	1	-	25	75	
<b>Total</b>				<b>30</b>	<b>22</b>		

IV	I	23UTAG41	Podhu Tamil / Hindi – IV	6	3	25	75
	II	23UENL41	General English – IV	6	3	25	75
	III	23UITC41	<b>Core Course –VII : . Net Programming</b>	5	5	25	75
		23UITC4P	<b>Core Course – VIII : Practical: . Net Programming</b>	5	5	25	75
		23UITA41	<b>Elective Course Generic/ Discipline Specific - IV: Software Engineering</b>	3	3	25	75
	IV	23UITS4P	<b>Skill Enhancement Course – VII: : PHP Scripting</b>	2	2	25	75
		23UITS4Q	<b>Skill Enhancement Course – VIII: : Multimedia</b>	2	2	25	75
	23UESR41	Environmental Studies	1	2	25	75	
<b>Total</b>				<b>30</b>	<b>25</b>		
V	III	23UITC51	<b>Core Course – IX : Python Programming</b>	5	4	25	75
		23UITC5P	<b>Core Course – X : Practical: Python Programming</b>	5	4	25	75
		23UITC52	<b>Core Course – XI : Operating System</b>	5	4	25	75
		23UITJ51	<b>Core Course – XII: Project &amp; Viva Voce</b>	5	4	25	75
		23UITO51 23UITO52	<b>Elective Courses Generic/ Discipline Specific - V:</b> 1. Big Data Analytics 2. Computational Intelligence	4	3	25	75
		23UITO53 23UITO54	<b>Elective Courses Generic/ Discipline Specific - VI:</b> 1. Mobile Application Development 2. Cryptography	4	3	25	75
	IV	23UVED51	Value Education	2	2	25	75
		23UITJ52	Internship/Industrial Training	-	2	25	75
	<b>Total</b>				<b>30</b>	<b>26</b>	
VI	III	23UITC61	<b>Core Course – XIII : Data Mining</b>	6	4	25	75
		23UITC6P	<b>Core Course – XIV : Practical: Data Mining</b>	6	4	25	75
		23UITC62	<b>Core Course – XV: Data Communication and Networking</b>	6	4	25	75
		23UITO61 23UITO62	<b>Elective Courses Generic/ Discipline Specific - VII:</b> 1. IOT and its Applications 2. Robotics and its Applications	5	3	25	75
		23UITO63 23UITO64	<b>Elective Courses Generic/ Discipline Specific - VIII:</b> 1. Trends in Computing 2. Artificial Neural Network	5	3	25	75
	IV	23UITS6P	<b>Skill Enhancement Course – IX: Professional Competency Skill: : Mobile Application Development</b>	2	2	25	75
	V	-	Extension Activity	-	1	-	100
<b>Total</b>				<b>30</b>	<b>21</b>		

**DEPARTMENT OF INFORMATION TECHNOLOGY**  
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**CURRICULUM PATTERN**  
**OUTCOME-BASED EDUCATION WITH CHOICE BASED CREDIT SYSTEM**  
**(From 2023-2024 Batch onwards)**  
**PROGRAMME ARTICULATION MATRIX (PAM)**

Semester	Part	Course Code	Course Name	PO1	PO2	PO3	PO4	PO5	PO6	PO7
I	I	23UTAG11	Podhu Tamil / Hindi – I	10	7	2	8	2	2	3
	II	23UENL11	General English – I	10	7	2	8	2	2	3
	III	23UITC11	<b>Core Course –I :</b> Programming in C	10	13	13	5	5	8	8
		23UITC1P	<b>Core Course –II :</b> Practical: C Programming	7	13	12	4	4	9	8
		23UITA11	<b>Elective Course Generic/ Discipline Specific - I:</b> Discrete Mathematics – I	10	13	7	4	0	4	3
	IV	23UITS11	<b>Skill Enhancement Course I: Foundation</b> Fundamentals of Computers	8	13	9	1	2	10	4
		23UITN11	<b>Skill Enhancement Course II: Non Major Elective Course :</b> Office Automation	9	13	8	3	5	6	8
II	I	23UTAG21	Podhu Tamil / Hindi – II	10	8	2	8	2	2	3
	II	23UENL21	General English – II	10	8	2	8	2	2	3
	III	23UITC21	<b>Core Course III :</b> Java Programming	12	13	12	5	3	4	5
		23UITC2P	<b>Core Course IV :</b> Practical: Java Programming and Data Structures	10	13	4	4	8	11	6
		23UITA21	<b>Elective Course Generic/ Discipline Specific - II:</b> Discrete Mathematics – II	10	11	8	6	0	7	5
	IV	23UITS2P	<b>Skill Enhancement Course– III: :</b> Advanced Excel	8	12	13	3	6	5	6
		23UITN21	<b>Skill Enhancement Course IV: Non Major Elective Course :</b> Basics of Internet	13	11	4	5	5	5	6
III	I	23UTAG31	Podhu Tamil/Hindi– III	10	8	2	8	2	2	2
	II	23UENL31	General English – III	10	8	3	9	3	3	2
	III	23UITC31	<b>Core Course V – :</b> Relational Database Management	15	14	10	3	4	5	4

			System								
		23UITC3P	<b>Core Course – VI :</b> Practical: Relational Database Management System	15	14	10	5	6	5	6	
		23UITA31	<b>Elective Course Generic/ Discipline Specific - III:</b> Data Structures	15	15	15	3	8	5	6	
	IV	23UITS3P	<b>Skill Enhancement Course– V: (Entrepreneurial Skill)- :</b> Introduction to HTML	9	9	5	8	7	5	6	
		23UITS3Q	<b>Skill Enhancement Course – VI: :</b> Web Designing	9	9	6	8	6	5	5	
IV	I	23UTAG41	Podhu Tamil / Hindi – IV	10	8	2	9	2	2	2	
	II	23UENL41	General English – IV	10	9	3	8	2	3	3	
	III	23UITC41	<b>Core Course –VII :</b> . Net Programming	15	15	12	5	3	5	6	
		23UITC4P	<b>Core Course – VIII :</b> Practical: . Net Programming	15	14	12	3	6	2	6	
		23UITA41	<b>Elective Course Generic/ Discipline Specific - IV:</b> Software Engineering	13	12	14	3	9	3	6	
	IV	23UITS4P	<b>Skill Enhancement Course – VII: :</b> PHP Scripting	13	12	14	3	9	3	8	
		23UITS4Q	<b>Skill Enhancement Course – VIII: :</b> Multimedia	15	13	13	3	5	3	8	
		23UESR41	Environmental Studies	8	5	1	7	8	5	5	
	V	III	23UITC51	<b>Core Course – IX :</b> Python Programming	13	11	5	8	4	5	4
			23UITC5P	<b>Core Course – X :</b> Practical: Python Programming	14	12	4	8	4	6	2
23UITC52			<b>Core Course – XI :</b> Operating System	12	10	7	10	2	7	2	
23UITJ51			<b>Core Course – XII:</b> Project & Viva Voce	9	12	4	8	2	8	5	
23UITO51 23UITO52			<b>Elective Courses Generic/ Discipline Specific - V:</b> 1. Big Data Analytics 2. Computational Intelligence	11	10	3	10	4	4	4	
23UITO53 23UITO54			<b>Elective Courses Generic/ Discipline Specific - VI:</b> 1. Mobile Application Development 2. Cryptography	13	12	4	10	2	6	3	
IV		23UVED51	Value Education	8	5	1	5	9	4	7	
		23UITJ52	Internship/Industrial Training	8	12	4	7	1	5	8	

VI	III	23UITC61	<b>Core Course – XIII : Data Mining</b>	13	11	5	8	4	5	4
		23UITC6P	<b>Core Course – XIV : Practical: Data Mining</b>	14	12	4	8	4	6	2
		23UITC62	<b>Core Course – XV: Data Communication and Networking</b>	13	11	5	8	4	5	4
		23UITO61 23UITO62	<b>Elective Courses Generic/ Discipline Specific - VII:</b> 1. IOT and its Applications 2. Robotics and its Applications	13	12	4	10	2	6	3
		23UITO63 23UITO64	<b>Elective Courses Generic/ Discipline Specific - VIII:</b> 1. Trends in Computing 2. Artificial Neural Network	13	12	4	10	2	6	3
	IV	23UITS6P	<b>Skill Enhancement Course – IX: Professional Competency Skill: : Mobile Application Development</b>	12	9	3	10	3	8	5
V	-	Extension Activity	8	2	1	7	9	8	5	
<b>Total Weightage of all courses contributing to PO</b>				<b>493</b>	<b>473</b>	<b>278</b>	<b>284</b>	<b>182</b>	<b>222</b>	<b>207</b>

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**(From 2023-2024 Batch onwards)**  
**PROGRAMME ARTICULATION MATRIX (PAM)**

Semester	Part	Course Code	Course Name	P01	P02	P03	P04	P05	P06	P07
I	I	23UTAG11	Podhu Tamil / Hindi – I	2.03	1.48	0.72	2.82	1.1	0.9	1.45
	II	23UENL11	General English – I	2.03	1.48	0.72	2.82	1.1	0.9	1.45
	III	23UITC11	<b>Core Course –I :</b> Programing in C	2.03	2.75	4.68	1.76	2.75	3.6	3.86
		23UITC1P	<b>Core Course –II :</b> Practical: C Programming	1.42	2.75	4.32	1.41	2.2	4.05	3.86
		23UITA11	<b>Elective Course Generic/ Discipline Specific - I:</b> Discrete Mathematics – I	2.03	2.75	2.52	1.41	0	1.8	1.45
	IV	23UITS11	<b>Skill Enhancement Course I: Foundation</b> Fundamentals of Computers	1.62	2.75	3.24	0.35	1.1	4.5	1.93
		23UITN11	<b>Skill Enhancement Course II: Non Major Elective Course :</b> Office Automation	1.83	2.75	2.88	1.06	2.75	2.7	3.86
	II	I	23UTAG21	Podhu Tamil / Hindi – II	2.03	1.69	0.72	2.82	1.1	0.9
II		23UENL21	General English – II	2.03	1.69	0.72	2.82	1.1	0.9	1.45
III		23UITC21	<b>Core Course III :</b> Java Programing	2.43	2.75	4.32	1.76	1.65	1.8	2.42
		23UITC2P	<b>Core Course IV :</b> Practical: Java Programming and Data Structures	2.03	2.75	1.44	1.41	4.4	4.95	2.9
		23UITA21	<b>Elective Course Generic/ Discipline Specific - II:</b> Discrete Mathematics – II	2.03	2.33	2.88	2.11	0	3.15	2.42
IV		23UITS2P	<b>Skill Enhancement Course– III: :</b> Advanced Excel	1.62	2.54	4.68	1.06	3.3	2.25	2.9
		23UITN21	<b>Skill Enhancement Course IV: Non Major Elective Course :</b> Basics of Internet	2.64	2.33	1.44	1.76	2.75	2.25	2.9
III		I	23UTAG31	Podhu Tamil/Hindi– III	2.03	1.69	0.72	2.82	1.1	0.9
	II	23UENL31	General English – III	2.03	1.69	1.08	3.17	1.65	1.35	0.97

	III	23UITC31	<b>Core Course V – : Relational Database Management System</b>	3.04	2.96	3.6	1.06	2.2	2.25	1.93
		23UITC3P	<b>Core Course – VI : Practical: Relational Database Management System</b>	3.04	2.96	3.6	1.76	3.3	2.25	2.9
		23UITA31	<b>Elective Course Generic/ Discipline Specific - III: Data Structures</b>	3.04	3.17	5.4	1.06	4.4	2.25	2.9
	IV	23UITS3P	<b>Skill Enhancement Course– V: (Entrepreneurial Skill)- : Introduction to HTML</b>	1.83	1.9	1.8	2.82	3.85	2.25	2.9
		23UITS3Q	<b>Skill Enhancement Course – VI: : Web Designing</b>	1.83	1.9	2.16	2.82	3.3	2.25	2.42
IV	I	23UTAG41	Podhu Tamil / Hindi – IV	2.03	1.69	0.72	3.17	1.1	0.9	0.97
	II	23UENL41	General English – IV	2.03	1.9	1.08	2.82	1.1	1.35	1.45
	III	23UITC41	<b>Core Course –VII : . Net Programming</b>	3.04	3.17	4.32	1.76	1.65	2.25	2.9
		23UITC4P	<b>Core Course – VIII : Practical: . Net Programming</b>	3.04	2.96	4.32	1.06	3.3	0.9	2.9
		23UITA41	<b>Elective Course Generic/ Discipline Specific - IV: Software Engineering</b>	2.64	2.54	5.04	1.06	4.95	1.35	2.9
	IV	23UITS4P	<b>Skill Enhancement Course – VII: : PHP Scripting</b>	2.64	2.54	5.04	1.06	4.95	1.35	3.86
		23UITS4Q	<b>Skill Enhancement Course – VIII: : Multimedia</b>	3.04	2.75	4.68	1.06	2.75	1.35	3.86
		23UESR41	Environmental Studies	1.62	1.06	0.36	2.46	4.4	2.25	2.42
V	III	23UITC51	<b>Core Course – IX : Python Programming</b>	2.64	2.33	1.8	2.82	2.2	2.25	1.93
		23UITC5P	<b>Core Course – X : Practical: Python Programming</b>	2.84	2.54	1.44	2.82	2.2	2.7	0.97
		23UITC52	<b>Core Course – XI : Operating System</b>	2.43	2.11	2.52	3.52	1.1	3.15	0.97
		23UITJ51	<b>Core Course – XII: Project &amp; Viva Voce</b>	1.83	2.54	1.44	2.82	1.1	3.6	2.42
		23UITO51 23UITO52	<b>Elective Courses Generic/ Discipline Specific - V:</b> 1. Big Data Analytics 2. Computational Intelligence	2.23	2.11	1.08	3.52	2.2	1.8	1.93
		23UITO53 23UITO54	<b>Elective Courses Generic/ Discipline Specific - VI:</b> 1. Mobile Application Development 2. Cryptography	2.64	2.54	1.44	3.52	1.1	2.7	1.45
	IV	23UVED51	Value Education	1.62	1.06	0.36	1.76	4.95	1.8	3.38
		23UITJ52	Internship/Industrial	1.62	2.54	1.44	2.46	0.55	2.25	3.86

			Training							
VI	III	23UITC61	<b>Core Course – XIII : Data Mining</b>	2.64	2.33	1.8	2.82	2.2	2.25	1.93
		23UITC6P	<b>Core Course – XIV : Practical: Data Mining</b>	2.84	2.54	1.44	2.82	2.2	2.7	0.97
		23UITC62	<b>Core Course – XV: Data Communication and Networking</b>	2.64	2.33	1.8	2.82	2.2	2.25	1.93
		23UITO61 23UITO62	<b>Elective Courses Generic/ Discipline Specific - VII:</b> 1. IOT and its Applications 2. Robotics and its Applications	2.64	2.54	1.44	3.52	1.1	2.7	1.45
	23UITO63 23UITO64	<b>Elective Courses Generic/ Discipline Specific - VIII:</b> 1. Trends in Computing 2. Artificial Neural Network	2.64	2.54	1.44	3.52	1.1	2.7	1.45	
	IV	23UITS6P	<b>Skill Enhancement Course – IX: Professional Competency Skill: : Mobile Application Development</b>	2.43	1.9	1.08	3.52	1.65	3.6	2.42
	V	-	Extension Activity	1.62	0.42	0.36	2.46	4.95	3.6	2.42
<b>Total Weighted percentage of Course contribution to POs</b>				<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>



**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**  
**CREDITS : 3**  
**DURATION : 90 hrs**

**INT. MARKS : 25**  
**EXT. MARKS : 75**  
**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**

இத்தானை வெற்றிகரமாக முடித்தவுடன் மாணவர்கள்,

**C01[K1]:** பாரதியார் காலந்தொட்டு தற்காலக் கவிதைகள் வரை கவிதை இலக்கியம் அறிமுகப்படுத்தப்படுவதால் அவற்றை அடையாளம் காண்பர்.

**C02[K2]:** கவிதை வரலாற்றினை புரிந்து கொண்டு பிழை இல்லாமல் எழுதும் திறன் பெறுவர்.

**C03[K3]:** இக்கால இலக்கிய வகைகள் மற்றும் இலக்கணம் கற்பதன் மூலம் அவற்றை தம் வாழ்நிலையோடு பொருத்திப் பார்ப்பர்.

**C04[K4]:** மொழியறிவோடு சிந்தனைத்திறன் பெற்று இலக்கியம் மற்றும் இலக்கணங்களைப் பகுப்பாய்வர்.

**C05[K5]:** உலகளாவிய இலக்கியங்களைக் கற்று மதிப்பீடு செய்வர்.

**CO/PO Mapping Table (Course Articulation Matrix)**

CO \ PO	PO						
	P01	P02	P03	P04	P05	P06	P07
<b>C01[K1]</b>	2	2	-	2	-	-	-
<b>C02[K2]</b>	2	2	-	2	-	-	-
<b>C03[K3]</b>	2	1	-	2	1	-	1
<b>C04[K4]</b>	2	1	1	1	1	1	1
<b>C05[K5]</b>	2	1	1	1	-	1	1
<b>Weightage of the Course</b>	10	7	2	8	2	2	3
<b>Weighted percentage of Course Contribution to POs</b>	2.03	1.48	0.72	2.82	1.1	0.9	1.45

**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

**கூறு II****(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 - நாயக்காரச் சீமாட்டி, சந்தியா பதிப்பகம்.

**கூறு IV****(18hrs)**

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

**கூறு V****(18 hrs)**

**மொழித்திறன் போட்டிதேர்வு:** பொருள் பொதிந்த சொற்றொடர் அமைத்தல், ஓர் 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. சிற்.பி. 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)  
<<http://www.tamilheritage.org>>
2. Tamil virtual University Library- [www.tamilvu.org/library](http://www.tamilvu.org/library)  
<http://www.virtualvu.org/library>
3. Project Madurai - [www.projectmadurai.org](http://www.projectmadurai.org).
4. Chennai Library- [www.chennaiLibrary.com](http://www.chennaiLibrary.com) <<http://www.chennaiLibrary.com>>.
5. Tamil Universal Digital Library- [www.ulib.prg](http://www.ulib.prg) <<http://www.ulib.prg>>.
6. Tamil E-Books Downloads- [tamilebooksdownloads.blogspot.com](http://tamilebooksdownloads.blogspot.com)
7. Tamil Books on line- [books.tamilcube.com](http://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)**

**CREDITS : 3**

**DURATION : 90 hrs**

**INT. MARKS : 25**

**EXT. MARKS : 75**

**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)**

CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
<b>CO1[K1]</b>	2	2	-	2	-	-	-
<b>CO2[K2]</b>	2	2	-	2	-	-	-
<b>CO3[K3]</b>	2	1	-	2	1	-	1
<b>CO4[K4]</b>	2	1	1	1	1	1	1
<b>CO5[K5]</b>	2	1	1	1	-	1	1
<b>Weightage of the course</b>	10	7	2	8	2	2	3
<b>Weighted percentage of Course contribution to POs</b>	2.03	1.48	0.72	2.82	1.1	0.9	1.45

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

<b>UNIT I - PROSE</b>		<b>(18 hrs)</b>
Jerome K Jerome	-	Uncle Podger Hangs a Picture
David Sedaris	-	Us and Them -From Dress Your Family in Corduroy and Denim
Harish Bhat	-	JRD

<b>UNIT II - POETRY</b>		<b>(18 hrs)</b>
William Ralph Emerson	-	A Nation's Strength
Paul Laurence Dunbar	-	The Sparrow
Subramania Bharati	-	A Patch of Land
Chinua Achebe	-	Love Cycle

<b>UNIT III - SHORT STORIES</b>		<b>(18 hrs)</b>
Bhabani Bhattacharya	-	The Faltering Pendulum
R.K. Laxman	-	The Gold Frame
Sudha Murthy	-	How I Taught My Grandmother to Read

<b>UNIT IV - LANGUAGE COMPETENCY</b>		<b>(18 hrs)</b>
Vocabulary: Synonyms, Antonyms, Word Formation		
Appropriate use of Articles and Parts of speech		
Error Correction		

<b>UNIT V - ENGLISH FOR WORKPLACE</b>		<b>(18 hrs)</b>
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.

### REFERENCES

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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.

#### Web Sources

1. [https://books.google.co.in/books?id=iSHvOmXuvLMC&printsec=frontcover&dq=subramania+bharati+poems&hl=en&newbks=1&newbks\\_redir=0&source=gb\\_mobile\\_search&sa=X&redir\\_esc=y#v=onepage&q=subramania%20bharati%20poems&f=false](https://books.google.co.in/books?id=iSHvOmXuvLMC&printsec=frontcover&dq=subramania+bharati+poems&hl=en&newbks=1&newbks_redir=0&source=gb_mobile_search&sa=X&redir_esc=y#v=onepage&q=subramania%20bharati%20poems&f=false)
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>
8. <https://fybaenglish.blogspot.com/2018/12/the-gold-frame-r-k-laxman.html>

**SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI**  
**DEPARTMENT OF INFORMATION TECHNOLOGY**  
**UG Programme- B.Sc. Information Technology**  
**SEMESTER- I**  
**CORE COURSE –I: PROGRAMMING IN C(23UITC11)**  
**(From 2023-2024 Batch onwards)**

**HOURS/WEEK: 5**  
**CREDITS : 5**  
**DURATION : 75 hrs**

**INT. MARKS : 25**  
**EXT. MARKS : 75**  
**MAX. MARKS: 100**

**Course Objectives**

- To familiarize the students with the understanding of code organization.
- To improve the programming skills.
- To learning the basic programming constructs.

**Course Outcomes (CO)**

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

**CO1[K1]:** outline the fundamental concepts of C programming languages, and its features

**CO2[K2]:** examine the programming methodology

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

**CO4[K4]:** select the appropriate data representation, control structures, functions and concepts based on the problem requirement

**CO5[K5]:** evaluate the program performance by fixing the errors

**CO-PO Mapping table (Course Articulation Matrix)**

<b>CO \ PO</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>
<b>CO1[K1]</b>	3	2	2	-	-	1	2
<b>CO2[K2]</b>	2	3	3	1	1	2	1
<b>CO3[K3]</b>	1	3	3	1	2	2	1
<b>CO4[K4]</b>	2	2	3	2	2	1	2
<b>CO5[K5]</b>	2	3	2	1	-	2	2
<b>Weightage of the course</b>	10	13	13	5	5	8	8
<b>Weighted percentage of Course contribution to POs</b>	2.03	2.75	4.68	1.76	2.75	3.6	3.86

**Based on the level of contribution ('3'-High, '2'-Medium, '1'-Low '-' NoCorrelation)**

## UNIT I

(15 hrs)

**Studying Concepts of Programming Languages:** Language Evaluation Criteria - Language design - Language Categories - Implementation Methods - Programming Environments - **Overview of C:** History of C- Importance of C- Basic Structure of C Programs- Executing a C Program- Constants, Variables and Data types - Operators and Expressions - Managing Input and Output Operations.

## UNIT II

(15 hrs)

Decision Making and Branching - Decision Making and Looping - Arrays - Character Arrays and Strings

## UNIT III

(15 hrs)

**User Defined Functions:** Elements of User Defined Functions- Definition of Functions - Return Values and their Types - Function Call- Function Declaration - Categories of Functions - Nesting of Functions - Recursion

## UNIT IV

(15 hrs)

**Structures and Unions:** Introduction- Defining a Structure- Declaring Structure Variables Accessing Structure Members- Structure Initialization- Arrays of Structures- Arrays within Structures- Unions- Size of Structures.

## UNIT V

(15hrs)

**Pointers:** Understanding Pointers- Accessing the Address of a Variable- Declaring Pointer Variables- Initializing of Pointer Variables- Accessing a Variable through its Pointer- Chain of Pointers- Pointer Expressions- Pointer and Scale Factor- Pointer and Arrays- Pointers and Character Strings- Array of Pointers- Pointer as Function Arguments- Functions Returning Pointers- Pointers to Functions.

## TEXTBOOKS

1. A Robert W. Sebesta. *Concepts of Programming Languages*. Fourth Edition: Addison Wesley, 2012.
2. E. Balaguruswamy. *Programming in ANSI C*. Tata McGraw Hill Publications, 2010.

## REFERENCES

### Books

1. Ashok Kamthane. *Programming with ANSI & Turbo C*. Pearson Education, 2009.
2. Byron Gottfried. *Programming with C*. Schaums Outline Series, Tata McGraw Hill Publications, 2010.

### Web Sources

1. <http://www.tutorialspoint.com/cprogramming/>
2. <http://www.cprogramming.com/>
3. <http://www.programmingsimplified.com/c-program-examples>
4. <http://www.programiz.com/c-programming>
5. <http://www.cs.cf.ac.uk/Dave/C/CE.html>
6. <http://fresh2refresh.com/c-programming/c-function/>

**SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI**  
**DEPARTMENT OF INFORMATION TECHNOLOGY**  
**UG Programme- B.Sc. Information Technology**  
**SEMESTER- I**  
**CORE COURSE -II: PRACTICAL: C PROGRAMMING (23UITC1P)**  
**(From 2023-2024 Batch onwards)**

**HOURS/WEEK: 5**  
**CREDITS : 5**  
**DURATION : 75 hrs**

**INT. MARKS : 25**  
**EXT. MARKS : 75**  
**MAX. MARKS: 100**

**Course Objectives**

- To provide exposure to problem-solving through C programming.
- To train the student to the basic concepts of the C -Programming language.
- To apply different concepts of C language to solve the problem.

**Course Outcomes (CO)**

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

**CO1[K2]:** Demonstrate the understanding of syntax and semantics of C programs

**CO2[K3]:** Identify the problem and solve using C programming techniques

**CO3[K4]:** Identify suitable programming constructs for problem solving

**CO4[K5]:** Analyze various concepts of C language to solve the problem in an efficient way

**CO5[K6]:** Develop a C program for a given problem and test for its correctness

**CO-PO Mapping table (Course Articulation Matrix)**

PO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
<b>CO1[K2]</b>	1	3	2	-	1	2	2
<b>CO2[K3]</b>	2	3	2	-	-	2	2
<b>CO3[K4]</b>	1	3	3	1	1	2	1
<b>CO4[K5]</b>	2	2	3	1	-	2	2
<b>CO5[K6]</b>	1	2	2	2	2	1	1
<b>Weightage of the course</b>	7	13	12	4	4	9	8
<b>Weighted percentage of Course contribution to POs</b>	1.42	2.75	4.32	1.41	2.2	4.05	3.86

Based on the level of contribution ('3'-High, '2'-Medium, '1'-Low '-' NoCorrelation)



**Exercises:**

1. Programs using Input/ Output functions
2. Programs on conditional structures
3. Command Line Arguments
4. Programs using Arrays
5. String Manipulations
6. Programs using Functions
7. Recursive Functions
8. Programs using Pointers
9. Files
10. Programs using Structures & Unions

**SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI**

**DEPARTMENT OF MATHEMATICS**

**UG Programme – B. Sc Information Technology**

**SEMESTER- I**

**ELECTIVE COURSE GENERIC / DISCIPLINE SPECIFIC - I: DISCRETE MATHEMATICS - I  
(23UITA11)**

**(From 2023-2024 Batch onwards)**

**HOURS/WEEK: 4(L-3, T-1)**

**CREDITS : 3**

**DURATION : 60 hrs**

**INT. MARKS : 25**

**EXT.MARKS : 75**

**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, invertibility of functions, tautological implications and equivalence of logic formulae, the method of solving graph optimization problems.

**CO-PO Mapping table (Course Articulation Matrix)**

<b>CO \ PO</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>
<b>CO1[K1]</b>	2	2	-	-	-	-	-
<b>CO2[K2]</b>	2	2	1	1	-	1	-
<b>CO3[K3]</b>	2	3	2	1	-	1	1
<b>CO4[K4]</b>	2	3	2	1	-	1	1
<b>CO5[K5]</b>	2	3	2	1	-	1	1
<b>Weightage of the course</b>	10	13	7	4	0	4	3
<b>Weighted percentage of Course contribution to POs</b>	2.07	2.81	2.59	1.44	0	1.86	1.49

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

## REFERENCES

### Books

1. G.Shanker Rao. *Discrete Mathematical Structures*. New Delhi: New Age International (P) Limited Publishers, 2002.
2. N.G.Goudru. *Discrete Mathematical Structures*. Mumbai: Himalaya Publishing House, 2003.
3. B.S.Vatsa and Suchi Vatsa. *Discrete Mathematics*. New Delhi: New Age International (P) Limited Publishers, Fourth Revised Edition, 2012.

### Web Sources

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2. <https://courses.lumenlearning.com/math4libarts/chapter/cardinality/>
3. [https://www.whitman.edu/mathematics/higher\\_math\\_online/section04.01.html](https://www.whitman.edu/mathematics/higher_math_online/section04.01.html)
4. [https://www.google.co.in/books/edition/Discrete\\_Mathematics/guhzzPyUxggC?hl=en&gbpv=1&dq=discrete+mathematics+with+graph+theory&printsec=frontcover](https://www.google.co.in/books/edition/Discrete_Mathematics/guhzzPyUxggC?hl=en&gbpv=1&dq=discrete+mathematics+with+graph+theory&printsec=frontcover)  
[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](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 INFORMATION TECHNOLOGY**  
**UG Programme- B.Sc. Information Technology**  
**SEMESTER- I**  
**SKILL ENHANCEMENT COURSE – I: FOUNDATION: FUNDAMENTALS OF**  
**COMPUTERS (23UITS11)**  
**(From 2023-2024 Batch onwards)**

**HOURS/WEEK: 2**  
**CREDITS : 2**  
**DURATION : 30 hrs**

**INT. MARKS : 25**  
**EXT. MARKS : 75**  
**MAX. MARKS: 100**

**Course Objectives**

- To analyze a problem with appropriate problem solving techniques
- To understand the main principles of imperative, functional and logic oriented programming languages and

**Course Outcomes (CO)**

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

**CO1[K1]:** Outline the Computer fundamentals and various problem solving concepts in Computers

**CO2[K2]:** Describe the basic computer organization, software, computer languages, software development life cycle and the need of structured programming

**CO3[K3]:** Identify the types of computer languages, software, computer problems and examine how to set up expressions and equations to solve the problem.

**CO4[K4]:** Inspect most appropriate programming languages, constructs and features to solve the problems in diversified domains.

**CO5[K5]:** Discuss the design of modules and functions in structuring the solution and various Organizing tools in problem solving.

**CO-PO Mapping table (Course Articulation Matrix)**

<b>CO \ PO</b>	<b>P01</b>	<b>P02</b>	<b>P03</b>	<b>P04</b>	<b>P05</b>	<b>P06</b>	<b>P07</b>
<b>CO1[K1]</b>	2	3	2	-	1	2	-
<b>CO2[K2]</b>	2	3	2	1	-	2	-
<b>CO3[K3]</b>	1	2	2	-	-	2	1
<b>CO4[K4]</b>	1	2	1	-	1	2	1
<b>CO5[K5]</b>	2	3	2	-	-	2	2
<b>Weightage of the course</b>	8	13	9	1	2	10	4
<b>Weighted percentage of Course contribution to POs</b>	1.62	2.75	3.24	0.35	1.1	4.5	1.93

**Based on the level of contribution ('3'-High, '2'-Medium, '1'-Low '-' NoCorrelation)**

**UNIT I (6 hrs)**

**Introduction:** Characteristics of Computers - Evolution of Computers **Basic Computer Organization:** I/O Unit - Storage Unit - Arithmetic Logic Unit - Control Unit - Central Processing Unit

**UNIT II (6 hrs)**

**Computer Software:** Types of Software - System Architecture **Computer Languages:** Machine Language - Assembly Language - High Level Language - Object Oriented Languages

**UNIT III (6 hrs)**

**Problem Solving Concepts:** Problem Solving in Everyday life - Types of Problems - Problem solving with computers - Difficulties with Problem Solving

**UNIT IV (6 hrs)**

**Problem solving concepts for the computer:** Constant Variables - Data Types - Functions - Operators - Expressions and Equations - **Organizing the Solution:** Analyzing the problem - Algorithm - Flowchart - Pseudo code

**UNIT V (6 hrs)**

**Programming Structure:** Structuring a solution - Modules and their function - Local and Global variables - Parameters - Return values - Sequential Logic Structure - Problem solving with Decision - Problem Solving with Loops

**TEXTBOOKS**

1. Pradeep K.Sinha and Priti Sinha. *Computer Fundamentals*. Sixth Edition: BPB Publications, 2004.
2. E Maureen Sprankle and Jim Hubbard. *Problem Solving and Programming Concept*. Ninth Edition, Prentice Hall, 2009.

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1. R.G. Dromey. *How to solve it by Computer*. Prentice Hall International Series in Computer Science, 2007.
2. C. S. V. Murthy. *Fundamentals of Computers*. Third Edition, Himalaya Publishing House, 2009.

**Web Sources**

1. [http://www.tutorialspoint.com/computer\\_fundamentals/](http://www.tutorialspoint.com/computer_fundamentals/)
2. <http://www.comptechdoc.org/basic/basiclut/>
3. <http://www.homeandlearn.co.uk/>
4. <http://www.top-windows-tutorials.com/computer-basics/>

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

**SKILL ENHANCEMENT COURSE – II: NON MAJOR ELECTIVE COURSE: OFFICE  
AUTOMATION (23UITN11)**  
**(From 2023-2024 Batch onwards)**

**HOURS/WEEK:2**  
**CREDITS : 2**  
**DURATION : 30 hrs**

**INT. MARKS : 25**  
**EXT. MARKS : 75**  
**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]:** possess the knowledge on the basics of computers and its components.

**CO2[K2]:** gain knowledge on Creating Documents, spreadsheet and presentation.

**CO3[K3]:** learn the concepts of Database and implement the Query in Database.

**CO4[K4]:** demonstrate the understanding of different automation tools.

**CO5[K5]:** utilize the automation tools for documentation, calculation and presentation purpose.

**CO-PO Mapping table (Course Articulation Matrix)**

<b>CO \ PO</b>	<b>P01</b>	<b>P02</b>	<b>P03</b>	<b>P04</b>	<b>P05</b>	<b>P06</b>	<b>P07</b>
<b>CO1[K1]</b>	2	3	2	-	1	2	2
<b>CO2[K2]</b>	2	3	1	1	1	2	2
<b>CO3[K3]</b>	2	3	2	1	1	1	2
<b>CO4[K4]</b>	1	2	2	-	1	-	1
<b>CO5[K5]</b>	2	2	1	1	1	1	1
<b>Weightage of the course</b>	9	13	8	3	5	6	8
<b>Weighted percentage of Course contribution to POs</b>	1.83	2.75	2.88	1.06	2.75	2.7	3.86

**Based on the level of contribution ('3'-High, '2'-Medium, '1'-Low '-' NoCorrelation)**

**UNIT I (6 hrs)**

**Introductory concepts:** Memory unit– CPU-Input Devices: Key board, Mouse and Scanner. Output devices: Monitor, Printer. Introduction to Operating systems & its features: DOS– UNIX–Windows. Introduction to Programming Languages.

**UNIT II (6 hrs)**

**Word Processing:** Open, Save and close word document; Editing text – tools, formatting, bullets; Spell Checker - Document formatting – Paragraph alignment, indentation, headers and footers, numbering; printing–Preview, options, merge.

**UNIT III (6 hrs)**

**Spreadsheets :** Excel–opening, entering text and data, formatting, navigating; Formulas–entering, handling and copying; Charts–creating, formatting and printing, analysis tables, preparation of financial statements, introduction to data analytics.

**UNIT IV (6 hrs)**

**Database Concepts:** The concept of data base management system; Data field, records, and files, Sorting and indexing data; Searching records. Designing queries, and reports; Linking of data files; Understanding Programming environment in DBMS; Developing menu drive applications in query language (MS–Access).

**UNIT V (6 hrs)**

**Power point:** Introduction to Power point - Features – Understanding slide typecasting & viewing slides – creating slide shows. Applying special object – including objects & pictures – Slide transition–Animation effects, audio inclusion, timers.

**TEXTBOOK**

1. Peter Norton. *Introduction to Computers*. Tata Mc Graw-Hill.

**REFERENCES**

**Book**

1. Jennifer Ackerman Kettel, Guy Hat-Davis and Curt Simmons. *How Microsoft 2003*. Tata Mc Graw-Hill.

**Web Sources**

1. <https://www.udemy.com/course/office-automation-certificate-course/>
2. <https://www.javatpoint.com/automation-tools>



**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**  
**CREDITS : 3**  
**DURATION : 90 hrs**

**INT. MARKS : 25**  
**EXT. MARKS : 75**  
**MAX. MARKS: 100**

**நோக்கங்கள்**

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

**கற்றலின் பயன்கள்**

இத்தானை 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 அறிந் 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	P01	P02	P03	P04	P05	P06	P07
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	8	2	8	2	2	3
Weighted percentage of Course Contribution to POs	2.03	1.69	0.72	2.82	1.1	0.9	1.45

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)**

**சிறுநிலக்கியங்கள்:** 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, வழச்சொற்கள் 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)  
<<http://www.tamilheritage.org>>
2. Tamil virtual University Library- [www.tamilvu.org/library](http://www.tamilvu.org/library)  
<http://www.virtualvu.org/library>
3. Project Madurai - [www.projectmadurai.org](http://www.projectmadurai.org).
4. Chennai Library- [www.chennailibrary.com](http://www.chennailibrary.com)  
<<http://www.chennailibrary.com>>.
5. Tamil Universal Digital Library- [www.ulib.prg](http://www.ulib.prg) <<http://www.ulib.prg>>.
6. Tamil E-Books Downloads- [tamilebooksdownloads.blogspot.com](http://tamilebooksdownloads.blogspot.com)
7. Tamil Books on line- [books.tamilcube.com](http://books.tamilcube.com)
8. Catalogue of the Tamil books in the Library of British Congress [archive.org](http://archive.org)
9. Tamil novels on line - [books.tamilcube.com](http://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)**

**CREDITS : 3**

**DURATION : 90 hrs**

**INT. MARKS : 25**

**EXT. MARKS : 75**

**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)**

CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
<b>CO1[K1]</b>	2	1	-	1	-	-	-
<b>CO2[K2]</b>	2	2	-	1	1	-	1
<b>CO3[K3]</b>	2	2	-	2	-	1	-
<b>CO4[K4]</b>	2	2	1	2	1	-	1
<b>CO5[K6]</b>	2	1	1	2	-	1	1
<b>Weightage of the course</b>	10	08	02	08	02	02	03
<b>Weighted percentage of Course contribution to POs</b>	<b>3.0</b>	<b>3.0</b>	<b>3.0</b>	<b>3.0</b>	<b>3.0</b>	<b>2.4</b>	<b>1.97</b>

**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
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**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\\_%202020103001102714.pdf](http://econtent.in/pacc.in/admin/contents/40_%202020103001102714.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/>

**SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI**  
**DEPARTMENT OF INFORMATION TECHNOLOGY**  
**UG Programme- B.Sc. Information Technology**  
**SEMESTER- II**  
**CORE COURSE -III: JAVA PROGRAMMING (23UITC21)**  
**(From 2023-2024 Batch onwards)**

**HOURS/WEEK: 5**  
**CREDITS : 5**  
**DURATION : 75 hrs**

**INT. MARKS : 25**  
**EXT. MARKS: 75**  
**MAX. MARKS: 100**

**Course Objectives**

- To provide knowledge on fundamentals of object-oriented programming.
- To have the ability to use the SDK environment to create, debug and run servlet programs

**Course Outcomes (CO)**

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

**CO1[K1]:** Understand the concepts of Data Structures and simple linear data, outline the basic terminologies of OOP, programming language techniques, JDBC and Internet programming concepts

**CO2[K2]:** solve problems using basic constructs, mechanisms, techniques and technologies of Java

**CO3[K3]:** analyze and explain the behavior of simple programs involving different techniques such as Inheritance, Packages, Interfaces, Exception Handling and Thread and technologies such as JDBC and Servlets

**CO4[K4]:** assess various problem-solving strategies involved in Java to develop a high- level application.

**CO5[K5]:** design GUI based JDBC applications and able to develop Servlets using suitable OOP concepts and techniques

**CO-PO Mapping table (Course Articulation Matrix)**

<b>CO \ PO</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>
<b>CO1[K1]</b>	2	3	2	1	-	2	1
<b>CO2[K2]</b>	2	3	3	1	1	1	1
<b>CO3[K3]</b>	3	2	2	1	-	-	1
<b>CO4[K4]</b>	2	2	3	-	1	-	1
<b>CO5[K5]</b>	3	3	2	2	1	1	1
<b>Weightage of the course</b>	12	13	12	5	3	4	5
<b>Weighted percentage of Course contribution to POs</b>	2.43	2.75	4.32	1.76	1.65	1.8	2.42

**Based on the level of contribution ('3'-High, '2'-Medium, '1'-Low '-' NoCorrelation)**

**UNIT I (15 hrs)**

Fundamentals of Object- Oriented Programming: Introduction – Object Oriented Paradigm – Concepts of Object – Oriented Programming – Benefits of OOP – Evolution: Java History- Java Features - Differs from C and C++ - Overview of Java Language: Java Program- Structure – Tokens – Java Statements – Java Virtual Machine – Command Line Arguments

**UNIT II (15 hrs)**

Constants, Variables and Data Types – Operators and Expressions – Decision making and Branching – Looping – Arrays - Strings – Collection Interfaces and classes

**UNIT III (15 hrs)**

Classes objects and methods: Introduction – Defining a class – Method Declaration – Constructors - Method Overloading – Static Members – Nesting of methods – Inheritance – Overriding – Final variables and methods – Abstract methods and classes

**UNIT IV (15 hrs)**

Multiple Inheritance: Defining Interfaces – Extending Interfaces – Implementing Interfaces – Packages: Creating Packages – Accessing Packages – Using a Package – Managing Errors and Exceptions - Multithreaded Programming

**UNIT V (15 hrs)**

Layout Managers - JDBC – Java Servlet: - Servlet Environment Role – Servlet API – Servlet Life Cycle – Servlet Context – HTTP Support – HTML to Servlet Communication

**TEXTBOOKS**

1. Ellis Horowitz , Sartaj Sahni. *Fundamentals of Data Structures*. University Press, 2<sup>nd</sup> Edition.
2. E Balagurusamy. *Programming with Java*. Tata McGraw Hill Edition India Private Ltd, 4th Edition, 2010.
3. C Xavier. *Java Programming – A Practical Approach*. Tata McGraw Hill Edition Private Ltd, 2011

**REFERENCES**

**Books**

1. P. Naughton and H. Schildt. *Java 2 The Complete Reference*. TMH, 3rd Edition, 1999.
2. Jason Hunder and William Crawford. *Java Servlet Programming*. O'Reilly, 2002.
3. Jim Keogh. *J2EE: The Complete Reference*. Tata McGraw Hill Edition. 2002

## **Web Sources**

1. <http://javabeginnerstutorial.com/core-java/>
2. <http://www.tutorialspoint.com/java/>
3. <http://beginnersbook.com/java-tutorial-for-beginners-with-examples>
4. <http://www.homeandlearn.co.uk/java/java.html>
5. <http://www.journaldev.com/1877/servlet-tutorial-java> (Unit V : Servlet API)

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

**CORE COURSE –IV: PRACTICAL: JAVA PROGRAMMING AND DATA STRUCTURES**  
**(23UITC2P)**  
**(From 2023-2024 Batch onwards)**

**HOURS/WEEK: 5**  
**CREDITS : 5**  
**DURATION : 75 hrs**

**INT. MARKS : 25**  
**EXT. MARKS: 75**  
**MAX. MARKS: 100**

**Course Objectives**

- To design and develop applications using different Java programming language techniques, JDBC & Servlets
- To organize and manipulate the data with the help of fundamental data structures

**Course Outcomes (CO)**

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

**CO1[K2]:** identify and explain the way of solving the simple problems

**CO2[K3]:** use appropriate software development environment to write, compile and execute object-oriented Java programs

**CO3[K4]:** analyze and identify necessary mechanisms of Java needed to solve real-world problem

**CO4[K5]:** test for defects and validate a Java program with different inputs

**CO5[K6]:** design, develop and compile Core Java , GUI , JDBC and servlet applications that utilize OOP and data structure concepts

**CO-PO Mapping table (Course Articulation Matrix)**

PO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
<b>CO1[K2]</b>	2	3	1	1	2	2	1
<b>CO2[K3]</b>	1	3	1	1	2	3	2
<b>CO3[K4]</b>	2	3	1	-	1	2	1
<b>CO4[K5]</b>	2	2	-	1	2	2	1
<b>CO5[K6]</b>	3	2	1	1	1	2	1
<b>Weightage of the course</b>	10	13	4	4	8	11	6
<b>Weighted percentage of Course contribution to POs</b>	2.03	2.75	1.44	1.41	4.4	4.95	2.9

**Based on the level of contribution ('3'-High, '2'-Medium, '1'-Low '-' NoCorrelation)**



**Exercises:**

1. Basic Programs
2. Arrays
3. Strings
4. ArrayList, HashSet and Vector collection classes
5. Classes and Objects
6. Interfaces
7. Inheritance
8. Packages
9. Exception Handling
10. Threads
11. Linked List
12. Stacks
13. Queue
14. Sorting
15. Binary Tree Representation
16. Working with Database using JDBC
17. Web application using Servlet

**KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI**  
**DEPARTMENT OF INFORMATION TECHNOLOGY**  
**UG Programme- B.Sc. Information Technology**  
**SEMESTER- II**  
**SKILL ENHANCEMENT COURSE – III: ADVANCED EXCEL (23UITS2P)**  
**(From 2023-2024 Batch onwards)**

**HOURS/WEEK: 2**  
**CREDITS : 2**  
**DURATION : 30 hrs**

**INT. MARKS : 25**  
**EXT. MARKS : 75**  
**MAX. MARKS: 100**

**Course Objectives**

- Aggregate numeric data and summarize into categories and subcategories
- Filtering, sorting, and grouping data or subsets of data.
- Create pivot tables to consolidate data from multiple files.
- Presenting data in the form of charts and graphs.

**Course Outcomes (CO)**

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

**CO1[K2]:** work with big data tools and its analysis techniques

**CO2[K3]:** analyze data by utilizing clustering and classification algorithms

**CO3[K4]:** learn and apply different mining algorithms and recommendation systems for large volumes of data

**CO4[K5]:** perform analytics on data streams

**CO5[K6]:** learn NoSQL databases and management

**CO-PO Mapping table (Course Articulation Matrix)**

PO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
<b>CO1[K2]</b>	2	2	3	1	2	1	1
<b>CO2[K3]</b>	1	3	2	-	1	1	1
<b>CO3[K4]</b>	2	2	3	1	-	1	1
<b>CO4[K5]</b>	2	2	2	-	1	1	2
<b>CO5[K6]</b>	1	3	3	1	2	1	1
<b>Weightage of the course</b>	8	12	13	3	6	5	6
<b>Weighted percentage of Course contribution to POs</b>	1.62	2.54	4.68	1.06	3.3	2.25	2.9

**Based on the level of contribution ('3'-High, '2'-Medium, '1'-Low '-' NoCorrelation)**

**Exercises:**

1. Working with Basic Formulas( Add ,Subtract, Multiply, Divide, Sum, Average)
2. Working with Functions
3. Working with Conditional Expressions
4. Working with Lookup Functions
5. Working with Logical Functions (If, Nested If, AND, OR, NOT)
6. Working with Statistical Functions (SUM IF, COUNTIF, LARGER, SMALLER)
7. Working with Pivot Tables
8. Working with Charts
9. Working with Date and Time Functions
10. Working with Sorting, Validating and Filters

**SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI**  
**DEPARTMENT OF MATHEMATICS**  
**UG Programme - B.Sc. Information Technology**  
**SEMESTER - II**  
**ELECTIVE COURSE GENERIC / DISCIPLINE SPECIFIC - II: DISCRETE**  
**MATHEMATICS - II (23UITA21)**  
**(From 2023-2024 Batch onwards)**

**HOURS/WEEK: 4 (L-3, T-1)**  
**CREDITS : 3**  
**DURATION : 60 hrs**

**INT. MARKS : 25**  
**EXT. MARKS : 75**  
**MAX. MARKS: 100**

**Course Objectives**

- To study about the formulation of Linear Programming problem and finding its solution using graphical method.
- To study about Assignment and Transportation problem.
- To find numerical solutions to problems where the exact solutions are not known

**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, curve fitting, numerical solutions of polynomial equations
- CO2[K2]:** explain the methods of solving linear programming problem, transportation problem, assignment problem, fitting curve for given data, solving polynomial equations numerically
- CO3[K3]:** find optimal solution of linear programming problem, transportation problem, assignment problem, numerical solution of polynomial equations and a curve that best fit the given data
- CO4[K4]:** examine the optimality of solutions of linear programming problem, transportation problem, assignment problem and the empirical relation of given data
- CO5[K5]:** determine the appropriate method of finding the optimal solution of linear programming problem, transportation problem, assignment problem, the curve that best fit the given data, the numerical solution of polynomial equations

**CO-PO Mapping table (Course Articulation Matrix)**

PO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
<b>CO1[K1]</b>	2	1	1	1	-	1	1
<b>CO2[K2]</b>	2	2	1	2	-	1	1
<b>CO3[K3]</b>	2	3	2	1	-	1	1
<b>CO4[K4]</b>	2	3	2	1	-	2	1

<b>C05[K5]</b>	2	2	2	1	-	2	1
<b>Weightage of the course</b>	10	11	8	6	0	7	5
<b>Weighted percentage of Course contribution to POs</b>	2.03	2.33	2.88	2.11	0	3.15	2.42

**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)**

**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 III (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**

**UNIT IV (12 hrs)**

**Empirical Relations and Curve Fitting:** Introduction – Equations Reducible to Linear Form – Method of Least Squares-Fitting a Straight Line – Method of Least Square-Fitting a Second Degree Parabola.

**Chapter 2: Page 2.1 – 2.4, 2.5 – 2.6, 2.8 – 2.24**

## UNIT V

(12 hrs)

### Numerical Solutions of Algebraic and Transcendental Equation:

Introduction – Bolzano’s Bisection Method – Simple Iteration Method – Method of False Position(Regula Falsi Method) – Newton-Raphson Method.

**Chapter 3: Page 3.1 – 3.5, 3.16 – 3.21**

## TEXTBOOKS

1. Kanti Swarup, Gupta P.K. and Man Mohan. *Operations Research*. New Delhi: Sultan Chand and Sons, Sixteenth Edition, 2012. **(UNITS I, II & III)**
2. T. Veerarajan, T. Ramachandran. *Numerical Methods with Programs in C*. New Delhi: Tata McGraw-Hill Publishing Company Limited, Second Edition, 2007.**(Units IV &V)**

## 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\\_Operations\\_Research\\_Theory\\_and\\_Applications/link/5a7931ff0f7e9b41dbd44db2/download](https://www.researchgate.net/publication/313880623_Introduction_to_Operations_Research_Theory_and_Applications/link/5a7931ff0f7e9b41dbd44db2/download)
2. <https://www.youtube.com/watch?v=a2QgdDk4Xjw>
3. <https://theengineeringmaths.com/wp-content/uploads/2017/11/numerical-solutions.pdf>
4. [https://www.lkouniv.ac.in/site/writereaddata/siteContent/202004032250571912siddharth\\_bhatt\\_engg\\_Interpolation.pdf](https://www.lkouniv.ac.in/site/writereaddata/siteContent/202004032250571912siddharth_bhatt_engg_Interpolation.pdf)
5. <https://theengineeringmaths.com/wp-content/uploads/2017/11/interpolation-web.pdf>

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

**SKILL ENHANCEMENT COURSE – IV: NON MAJOR ELECTIVE COURSE: BASICS OF  
INTERNET (23UITN21)**  
**(From 2023-2024 Batch onwards)**

**HOURS/WEEK: 2**  
**CREDITS : 2**  
**DURATION : 30 hrs**

**INT. MARKS : 25**  
**EXT. MARKS : 75**  
**MAX. MARKS: 100**

**Course Objectives**

- To gain knowledge of Internet medium
- To know internet as a mass medium
- To know features of Internet Technology,
- To Know internet as source of infotainment

**Course Outcomes (CO)**

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

**CO1[K1]:** knows the basic concept in HTML and Concept of resources in HTML

**CO2[K2]:** knows Design concept, Concept of Meta Data and Understand the concept of save the files

**CO3[K3]:** understand the page formatting and Concept of list

**CO4[K4]:** creating Links and Know the concept of creating link to email address

**CO5[K5]:** concept of adding images and Understand the table creation

**CO-PO Mapping table (Course Articulation Matrix)**

PO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
<b>CO1[K1]</b>	2	2	1	1	2	1	1
<b>CO2[K2]</b>	3	2	1	1	1	1	2
<b>CO3[K3]</b>	3	2	1	1	1	1	1
<b>CO4[K4]</b>	3	2	1	1	-	1	1
<b>CO5[K5]</b>	2	3	-	1	1	1	1
<b>Weightage of the course</b>	13	11	4	5	5	5	6
<b>Weighted percentage of Course contribution to POs</b>	2.64	2.33	1.44	1.76	2.75	2.25	2.9

**Based on the level of contribution ('3'-High, '2'-Medium, '1'-Low '-' NoCorrelation)**

- UNIT I** (6 hrs)  
The emergence of internet as a mass medium – the world of ‘world wide web’.
- UNIT II** (6 hrs)  
Features of internet as a technology.
- UNIT III** (6 hrs)  
Internet as a source of infotainment – classification based on content and style.
- UNIT IV** (6 hrs)  
Demographic and psychographic descriptions of internet ‘audiences’ – effect of internet on the values and life-styles.
- UNIT V** (6 hrs)  
Present issues such as cyber crime and future possibilities.

#### **TEXTBOOKS**

1. *Mastering HTML5 and CSS3 Made Easy*. TeachUComp Inc, 2014.
2. Thomas Michaud. *Foundations of Web Design: Introduction to HTML & CSS*

#### **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**  
**CREDITS : 3**  
**DURATION : 90 hrs**

**INT. MARKS : 25**  
**EXT. MARKS : 75**  
**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	2.03	1.69	0.72	2.82	1.1	0.9	0.97

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 - பூமுகள் இலம்பகம் - திருத்தக்கதேவர், வளையாபதி - நாதகுந்தனார்.

**கூறு II****(18 hrs)**

**சமயக் காப்பியங்கள்:** பெரியபுராணம் - பூசலார் நாயனார் புராணம் - சேக்கிழார், கம்பராமாயணம் - மந்தரை சூழ்ச்சிப் படலம் - கம்பர், வில்லிபாரதம் - மற்போர் சருக்கம் - வில்லிபுத்தூராழ்வார், 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)  
<http://www.tamilheritage.org>
2. Tamil virtual University Library- [www.tamilvu.org/library](http://www.tamilvu.org/library)  
<http://www.virtualvu.org/library>
3. Project Madurai - [www.projectmadurai.org](http://www.projectmadurai.org).
4. Chennai Library- [www.chennailibrary.com](http://www.chennailibrary.com) <http://www.chennailibrary.com>
5. Tamil Universal Digital Library- [www.ulib.prg](http://www.ulib.prg) <http://www.ulib.prg>
6. Tamil E-Books Downloads- [tamilebooksdownloads.blogspot.com](http://tamilebooksdownloads.blogspot.com)
7. Tamil Books on line- [books.tamilcube.com](http://books.tamilcube.com)
8. Catalogue of the Tamil books in the Library of British Congress [archive.org](http://archive.org)
9. Tamil novels on line - [books.tamilcube.com](http://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)**

**CREDITS : 3**

**DURATION : 90 hrs**

**INT. MARKS : 25**

**EXT. MARKS : 75**

**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
<b>CO1[K1]</b>	2	1	-	2	-	-	-
<b>CO2[K2]</b>	2	2	-	2	1	1	-
<b>CO3[K3]</b>	2	2	1	2	1	1	-
<b>CO4[K4]</b>	2	2	1	2	-	-	1
<b>CO5[K5]</b>	2	1	1	1	1	1	1
<b>Weightage of the course</b>	10	08	03	09	03	03	02
<b>Weighted percentage of Course contribution to POs</b>	1.81	2.06	1.55	2.1	1.94	1.44	0.99

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

**TEXTBOOKS**

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 INFORMATION TECHNOLOGY**  
**UG Programme - B.Sc. Information Technology**  
**SEMESTER - III**  
**CORE COURSE – V: RELATIONAL DATABASE MANAGEMENT SYSTEM**  
**(23UITC31)**  
**(From 2023-2024 Batch onwards)**

**HOURS/WEEK: 5**  
**CREDITS : 5**  
**DURATION : 75 hrs**

**INT. MARKS : 25**  
**EXT. MARKS : 75**  
**MAX. MARKS: 100**

**Course Objectives**

- To understand the basic DBMS models and architecture.
- To learn how to query and normalize the database.
- To study the data base design, transaction Processing and Management and Security Issues.

**Course Outcomes (CO)**

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

**CO1[K1]:** outline the fundamental RDBMS concepts and PL/SQL

**CO2[K2]:** discuss database operations, mapping, normalization, SQL and PL/SQL

**CO3[K3]:** classify the database based on various models and normalization

**CO4[K4]:** analyze the requirements to implement database concepts

**CO5[K5]:** estimate and construct normalized tables and manipulate it effectively using SQL and PL/SQL database objects

**CO-PO Mapping table (Course Articulation Matrix)**

<b>CO \ PO</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>
<b>CO1[K1]</b>	3	2	2	1	1	1	1
<b>CO2[K2]</b>	3	3	2	1	-	1	1
<b>CO3[K3]</b>	3	3	2	1	1	1	-
<b>CO4[K4]</b>	3	3	2	-	1	1	1
<b>CO5[K5]</b>	3	3	2	-	1	1	1
<b>Weightage of the course</b>	15	14	10	3	4	5	4
<b>Weighted percentage of Course contribution to Pos</b>	3.04	2.96	3.6	1.06	2.2	2.25	1.93

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

## UNIT I

(15 hrs)

**Introduction to Databases:** Introduction – Characteristics of the Database Approach – Actors on the Scene – Workers behind the scene – Advantages of using DBMS Approach. **Overview of database and Architectures:** Data Models, Schemas, and Instances – Three-schema Architecture and Data Independence – Database languages & Interfaces – Database System Environment– Centralized & Client Server Architecture for DBMS - Classification of DBMS.

## UNIT II

(15 hrs)

**Basic Relational Model:** Relational Model Concepts – Relational Model Constraints and Relational Database Schemas – Update Operations, Tractions, Dealing with Constraint Violations – **Formal Relational Languages: Unary Relational Operations:** SELECT and PROJECT – Relational Algebra Operations from Set Theory – **Binary Relational Operations:** JOIN and DIVISION – Examples of Queries in Relational Algebra.

## UNIT III

(15 hrs)

**Conceptual Data Modeling using the ER Model:** Using High-Level Conceptual Data Models for Database Design – An example DB application – Entity Types, Entity Sets, Attributes, and Keys – Relationship Types, Relationship sets, Roles, and Structural Constraints – Weak entity types – Example- **Mapping a Conceptual Design into Logical Design:** Relational Database Design using ER-Relational Mapping – Mapping EER Model Constructs to Relations

## UNIT IV

(15 hrs)

**Functional Dependencies and Normalization for Relational Database:** Functional Dependencies – Definition of Functional Dependency – Normal Forms based on Primary Keys – Normalization of Relations – First Normal Form – Second Normal Form – Third Normal Form – BCNF- Fourth Normal Form- Fifth Normal Form.

## UNIT V

(15 hrs)

**SQL: The Relational Database Standard:** Data definition, Constraints, and schema changes in SQL – Basic Queries in SQL – More complex SQL Queries – Insert, delete and update statements in SQL – Views in SQL. **PL/SQL:** Introduction to

PL/SQL – More on PL/SQL – Error Handling in PL/SQL – Oracle’s Named Exception Handlers – Stored Procedures and Functions – Execution of Procedures and Functions – Advantages – Procedures Vs. Functions – Syntax for Creating Procedures and Functions – Deleting a Stored Procedure or Function – Oracle Packages – Database Triggers – Types Of Triggers – Deleting a Trigger – Raise-Application Error Procedure

### **TEXTBOOKS**

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

### **REFERENCES**

#### **Book**

1. Abraham Silberschatz, Henry F.Korth, S.Sudarshan. *Database System Concepts*, Tata McGraw Hill Publication, 4<sup>th</sup> Edition, 2001

#### **Web Sources**

1. <http://srikanthtechnologies.com/books/orabook/ch1.pdf>
2. [http://www.tmv.edu.in/pdf/Distance\\_education/BCA%20Books/BCA%20IV%20SEM/BC A-428%20Oracle.pdf](http://www.tmv.edu.in/pdf/Distance_education/BCA%20Books/BCA%20IV%20SEM/BC A-428%20Oracle.pdf)
3. <http://www.tutorialspoint.com/sql/sql-rdbms-concepts.htm>
4. <http://ecomputernotes.com/database-system/rdbms>
5. <http://www.mithunashok.com/2011/04/basics-of-rdbms.html>



**SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI**  
**DEPARTMENT OF INFORMATION TECHNOLOGY**  
**UG Programme - B.Sc. Information Technology**  
**SEMESTER - III**  
**CORE COURSE – VI : PRACTICAL: RELATIONAL DATABASE MANAGEMENT**  
**SYSTEM (23UITC3P)**  
**(From 2023-2024 Batch onwards)**

**HOURS/WEEK: 5**  
**CREDITS : 5**  
**DURATION : 75 hrs**

**INT. MARKS : 25**  
**EXT. MARKS : 75**  
**MAX. MARKS: 100**

**Course Objectives**

- The primary Objective of this paper is to learn and implement SQL & PL/SQL.
- To design and develop database Query applications using SQL.

**Course Outcomes (CO)**

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

**CO1[K2]:** express appropriate SQL queries and PL/SQL blocks for the database

**CO2[K3]:** implement SQL and PL/SQL blocks for the given problem effectively

**CO3[K4]:** analyse the problem and Exceptions using queries and PL/SQL blocks

**CO4[K5]:** evaluate the database for normalization using SQL and PL/SQL blocks

**CO5[K6]:** design Database tables, create Procedures, user-defined functions and triggers

**CO-PO Mapping table (Course Articulation Matrix)**

<b>CO \ PO</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>
<b>CO1[K2]</b>	3	2	2	1	1	1	1
<b>CO2[K3]</b>	3	3	2	1	2	1	2
<b>CO3[K4]</b>	3	3	2	1	1	1	1
<b>CO4[K5]</b>	3	3	2	1	1	1	1
<b>CO5[K6]</b>	3	3	2	1	1	1	1
<b>Weightage of the Course</b>	15	14	10	5	6	5	6
<b>Weighted percentage of Course contribution to Pos</b>	3.04	2.96	3.6	1.76	3.3	2.25	2.9

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

**Exercises:**

**SQL :**

1. DDL Commands
2. DML Commands
3. DCL Commands
4. SQL Built-in functions
5. Using Sub Queries

**PL/SQL:**

6. Simple programs using PL/SQL
7. Procedures
8. User-defined functions
9. Exception Handling
10. Triggers

**SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI**  
**DEPARTMENT OF INFORMATION TECHNOLOGY**  
**UG Programme - B.Sc. Information Technology**  
**SEMESTER - III**  
**ELECTIVE COURSE GENERIC/ DISCIPLINE SPECIFIC – III : DATA STRUCTURES**  
**(23UITA31)**  
**(From 2023-2024 Batch onwards)**

**HOURS/WEEK: 4**  
**CREDITS : 3**  
**DURATION : 60 hrs**

**INT. MARKS : 25**  
**EXT. MARKS : 75**  
**MAX. MARKS: 100**

**Course Objectives**

- To become familiar with the various data structures and their applications
- To increase the understanding of basic concepts of the design and use of algorithms

**Course Outcomes (CO)**

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

**CO1[K1]:** outline the different fundamental concepts of data structures

**CO2[K2]:** classify the different memory representation for data storage and apply various operations

**CO3[K3]:** illustrate an algorithm for different data structure operations.

**CO4[K4]:** analyse the data structures applications

**CO5[K5]:** justify the various data structure techniques

**CO-PO Mapping table (Course Articulation Matrix)**

PO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
<b>CO1[K1]</b>	3	3	3	1	2	1	1
<b>CO2[K2]</b>	3	3	3	-	1	1	2
<b>CO3[K3]</b>	3	3	3	1	1	1	1
<b>CO4[K4]</b>	3	3	3	-	2	1	1
<b>CO5[K5]</b>	3	3	3	1	2	1	1
<b>Weighted percentage of Course contribution to POs</b>	15	15	15	3	8	5	6
<b>percentage of Course contribution to Pos</b>	3.04	3.17	5.4	1.06	4.4	2.25	2.9

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

**UNIT I****(12 hrs)**

Introduction and overview: Basic Terminology – Data Structures – Operations - Algorithms: Complexity – Time Space – Algorithmic Notation – Control Structures – Complexity of Algorithms – Notations Arrays: Representation – Operations - Linear Search – Binary Search

**UNIT II****(12 hrs)**

Stack: Representation – Arithmetic expressions: Polish Notation – **Recursion:** Towers of Hanoi - Queue – Priority Queue - Linked Lists: Introduction – Representation of Linked Lists – Traversing a Linked Lists – Searching a Linked List

**UNIT III****(12 hrs)**

Insertion into a Linked List – Deletion into Linked List – Header Linked Lists – Two-way Lists – Doubly Linked List - Trees : Binary Trees – Representation – Traversal using Recursion – Binary Search Trees

**UNIT IV****(12 hrs)**

Sorting : Bubble Sort Insertion Sort - Selection Sort - Merge Sort - Quick Sort - Heap Sort

**UNIT V****(12 hrs)**

Graph – Graph Theory Terminology – Sequential Representation – Warshalls Algorithm – Shortest Path – Linked Representation - Traversals – Dynamic Programming – All Pairs Shortest Path - Greedy – Knapsack – Back Tracking – 8 Queens

**TEXTBOOK**

1. Seymour Lipschutz. *Theory and Problems of Data Structure*, Tata McGraw- Hill Edition, 1986

**REFERENCES****Books**

1. E.Horowitz, S.Sahni, S.Rajasekaran. *Computer Algorithms*, Galgotia Publications, 1998
2. Robert Kruse, C.L.Tondo, Bruce Leung. *Data Structures and Program Design in C*, Prentice Hall Publications, Second Edition, 1997

## Web Sources

1. <http://www.cs.sunysb.edu/~skiena/214/lectures/>
2. <http://datastructures.itgo.com/graphs/dfsdfs.htm>
3. <http://oopweb.com/Algorithms/Documents/PLDS210/VolumeFrames.html>
4. <http://discuss.codechef.com/questions/48877/data-structures-and-algorithms>
5. <http://code.tutsplus.com/tutorials/algorithms-and-data-structures--cms-20437>
6. [https://www.tutorialspoint.com/data\\_structures\\_algorithms/insertion\\_sort\\_algorithm.htm](https://www.tutorialspoint.com/data_structures_algorithms/insertion_sort_algorithm.htm) (Unit IV : Insertion Sorting)

**SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI**  
**DEPARTMENT OF INFORMATION TECHNOLOGY**  
**UG Programme - B.Sc. Information Technology**  
**SEMESTER - III**  
**SKILL ENHANCEMENT COURSE- V: INTRODUCTION TO HTML (23UITS3P)**  
**(From 2023-2024 Batch onwards)**

**HOURS/WEEK: 1**  
**CREDIT : 1**  
**DURATION : 15 hrs**

**INT. MARKS : 25**  
**EXT. MARKS : 75**  
**MAX. MARKS: 100**

**Course Objectives**

- To insert a graphic within a web page.
- To create a link within a webpage.
- To create a table within a webpage.

**Course Outcomes (CO)**

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

**CO1[K1]:** state the basic web programming concepts

**CO2[K2]:** illustrate the various types of lists

**CO3[K3]:** apply the mapping concepts with the help of image map

**CO4[K4]:** classify the form tags involved in designing a web page

**CO5[K6]:** create and develop own web site using frames and images

**CO-PO Mapping table (Course Articulation Matrix)**

<b>PO</b> <b>CO</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>
<b>CO1[K1]</b>	2	2	1	2	2	1	2
<b>CO2[K2]</b>	2	2	1	2	1	1	1
<b>CO3[K3]</b>	2	2	1	1	1	1	1
<b>CO4[K4]</b>	2	2	1	2	1	1	1
<b>CO5[K6]</b>	1	1	1	1	2	1	1
<b>Weightage of the course</b>	9	9	5	8	7	5	6
<b>Weighted percentage of Course contribution to POs</b>	1.83	1.9	1.8	2.82	3.85	2.25	2.9

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

**Exercises:**

1. To design the simple web page using HTML tags.
2. To create the Time table using Table tags.
3. To design the web page for displaying student bio data.
4. To design the web page for Menu card using Lists
5. To design the web page for map using Image map tag.
6. To prepare the Advertisement using Marquee Tags
7. To create the simple image gallery using frames tag.
8. To create the any application form using forms tag.
9. To create the college website using HTML tags.
10. To create the tourism website using frames tags.

**SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI**  
**DEPARTMENT OF INFORMATION TECHNOLOGY**  
**UG Programme - B.Sc. Information Technology**  
**SEMESTER - III**  
**SKILL ENHANCEMENT COURSE- VI: PRACTICAL: WEB DESIGNING (23UITS3Q)**  
**(From 2023-2024 Batch onwards)**

**HOURS/WEEK: 2**  
**CREDITS : 2**  
**DURATION : 30 hrs**

**INT. MARKS : 25**  
**EXT. MARKS : 75**  
**MAX. MARKS: 100**

**Course Objectives**

- To gain basic knowledge about web page designing.
- To gain knowledge about different formatting tags.
- To implement tags and elements efficiently for web development.
- To gain knowledge about CSS elements and tags.
- To gain knowledge in JavaScript.

**Course Outcomes (CO)**

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

**CO1[K2]:** illustrate the basic web programming concepts

**CO2[K3]:** apply the various types of lists

**CO3[K4]:** illustrate the mapping concepts with the help of image map, JavaScript and AJAX

**CO4[K5]:** explain the form tags involved in designing a web page

**CO5[K6]:** create and develop own web site using frames and images

**CO-PO Mapping table (Course Articulation Matrix)**

PO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
<b>CO1[K2]</b>	2	2	1	2	1	1	1
<b>CO2[K3]</b>	2	2	1	2	1	1	1
<b>CO3[K4]</b>	2	2	2	1	1	1	1
<b>CO4[K5]</b>	2	2	1	2	1	1	1
<b>CO5[K6]</b>	1	1	1	1	2	1	1
<b>Weightage of the course</b>	9	9	6	8	6	5	5
<b>Weighted percentage of Course contribution to POs</b>	1.83	1.9	2.16	2.82	3.3	2.25	2.42

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



## **Exercises:**

### **HTML**

1. Design a web page using text formatting tags.
2. Create Web page using ordered and unordered lists.
3. Create your home page with images.
4. Create web page using internal and external links for documents.
5. Create web page using image and text hyperlinks within documents.
6. Create web page using tables.
7. Create a web page using 2 or more framesets.
8. Design a web page using forms.

### **CSS**

9. Design a web page using classes and properties of CSS.
10. Design a web page using Layouts of CSS.
11. Design a web page using icons, list and links of CSS.
12. Design a web page using Transitions of CSS.

### **JavaScript**

13. Design a web page using JavaScript Objects.
14. Design a web page using Operators in JavaScript.
15. Design a web page using built-in functions in JavaScript.
16. Design a web page using user-defined functions in JavaScript.
17. Design a web page using loops in 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**

**CREDITS : 3**

**DURATION : 90 hrs**

**INT. MARKS : 25**

**EXT. MARKS : 75**

**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	8	2	9	2	2	2
Weighted percentage of Course Contribution to POs	2.03	1.69	0.72	3.17	1.1	0.9	0.97

**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 மொழிபெயர்த்தல், 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)  
<<http://www.tamilheritage.org>>
2. Tamil virtual University Library- [www.tamilvu.org/library](http://www.tamilvu.org/library)  
<http://www.virtualvu.org/library>
3. Project Madurai - [www.projectmadurai.org](http://www.projectmadurai.org).
4. Chennai Library- [www.chennailibrary.com](http://www.chennailibrary.com)  
<<http://www.chennailibrary.com>>.
5. Tamil Universal Digital Library- [www.ulib.prg](http://www.ulib.prg) <<http://www.ulib.prg>>.
6. Tamil E-Books Downloads- [tamilebooksdownloads.blogspot.com](http://tamilebooksdownloads.blogspot.com)
7. Tamil Books on line- [books.tamilcube.com](http://books.tamilcube.com)
8. Catalogue of the Tamil books in the Library of British Congress [archive.org](http://archive.org)
9. Tamil novels on line - [books.tamilcube.com](http://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)**

**CREDITS : 3**

**DURATION : 90 hrs**

**INT. MARKS : 25**

**EXT. MARKS: 75**

**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	P01	P02	P03	P04	P05	P06	P07
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	1.81	2.32	1.55	1.86	1.29	1.44	1.48

**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.

**REFERENCES**

**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, Playwrights and Performance*. Bloomsbury Publishing, 2015.
4. Bernish, 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 INFORMATION TECHNOLOGY**  
**UG Programme - B.Sc. Information Technology**  
**SEMESTER - IV**  
**CORE COURSE -VII : . NET PROGRAMMING (23UITC41)**  
**(From 2023-2024 Batch onwards)**

**HOURS/WEEK: 5**  
**CREDITS : 5**  
**DURATION : 75 hrs**

**INT. MARKS : 25**  
**EXT. MARKS : 75**  
**MAX. MARKS: 100**

**Course Objectives**

- To provide sufficient knowledge in developing web applications using C# and ASP.NET
- To manipulate data from SQL Server using Microsoft ADO.NET.

**Course Outcomes (CO)**

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

**CO1[K1]:**identify the basic features of C# programming language and ASP.NET applications

**CO2[K2]:**demonstrate the salient properties of C# and ASP.NET applications

**CO3[K3]:**identify the various keywords, controls and classes to developing a web forms

**CO4[K4]:**analyze the appropriate controls to create a web form

**CO5[K5]:**estimate the creation of C# controls and web application

**CO-PO Mapping table (Course Articulation Matrix)**

<b>CO \ PO</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>
<b>CO1[K1]</b>	3	3	3	1	1	1	1
<b>CO2[K2]</b>	3	3	2	1	1	1	1
<b>CO3[K3]</b>	3	3	3	1	-	1	1
<b>CO4[K4]</b>	3	3	2	1	-	1	2
<b>CO5[K5]</b>	3	3	2	1	1	1	1
<b>Weighted of the Course</b>	15	15	12	5	3	5	6
<b>Weighted percentage of Course contribution to POs</b>	3.04	3.17	4.32	1.76	1.65	2.25	2.9

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

**UNIT I (15 hrs)**

**The Creation of C#:** C# Relates to the .Net Framework - Common Language Runtime - Managed vs unmanaged code - **An Overview of C#:** Object-Oriented Programming - First Simple Program-Handling Syntax errors - Using code blocks-semicolon, positioning and Indentation-The C# Keywords-Identifiers-The .Net Framework Class Library-Data Types, Literals and Variables- Operators.

**UNIT II (15 hrs)**

**Program Control Statements:** If Statement- switch Statement-For Loop- While loop do-while loop- foreach loop-using break to exit a loop-using continue-goto- **Introducing Classes and objects:** Class Fundamentals- objects creation- Methods-constructors-Garbage Collection and Destructors-Exception Handling.

**UNIT III (15 hrs)**

**Arrays and Strings:** Arrays-Multidimensional Arrays-Jagged Arrays- for each loop Strings- **Methods and classes:** Method overloading- Main Method- Recursion-static Classes Delegates,Events and Lambda Expressions: Delegates - Lambda Expressions-LINQ

**UNIT IV (15 hrs)**

**Developing ASP.NET Applications: Visual Studio:** Creating Websites- The Anatomy of a Web Form – Web Form Fundamentals: Converting HTML Page to an ASP.Net Page – Page Class – Web Controls. **State Management:** View State - Transferring Information between Pages – Cookies – Session State – Application State.

**UNIT V (15 hrs)**

Validation Controls – AdRotator Control. **Working with Data: ADO.NET Fundamentals:** Direct Data Access – Disconnected Data Access - **Data Binding:** Data Binding with ADO.NET –Data Source Controls - **The Data Controls:** The GridView – Formatting the GridView – Selecting GridView Row – Editing, Sorting and Paging the GridView-Generating Crystal Reports.

**TEXTBOOKS**

1. Herbert Schildt . *C# 4.0 The Complete Reference*, Tata McGraw-Hill Pvt Ltd.,2010
2. Mathew MacDonald. *Beginning ASP.NET 4 in C#*, Apress, Second Edition,2010

**REFERENCES**

**Books**

1. Greg Buczek. *ASP.NET – Developer’s guide*, Tata MaGraw Hill Publication,2002
2. J.Sharp. *Microsoft Visual C# 2008 Step by Step*, PHI Learning Private Ltd,2009
3. Christian Nagel et al.*Professional C# 2005 with .NET 3.0*, Wiley India, 2007



## **Web Sources**

1. <http://ssw.jku.at/Teaching/Lectures/CSharp/Tutorial/>
2. <http://www.csharpkey.com/csharp/>
3. <http://www.w3schools.com/aspnet/default.asp>

**SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI**  
**DEPARTMENT OF INFORMATION TECHNOLOGY**  
**UG Programme - B.Sc. Information Technology**  
**SEMESTER - IV**  
**CORE COURSE – VIII : PRACTICAL: . NET PROGRAMMING (23UITC4P)**  
**(From 2023-2024 Batch onwards)**

**HOURS/WEEK: 5**  
**CREDITS : 5**  
**DURATION : 75 hrs**

**INT. MARKS : 25**  
**EXT. MARKS : 75**  
**MAX. MARKS: 100**

**Course Objectives**

- To provide sufficient knowledge in developing web applications and to manipulate data from SQL Server using Microsoft ADO.NET.
- To design and develop applications using different languages such as C#, VB.

**Course Outcomes (CO)**

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

**CO1[K2]:** estimate MS Visual Studio.NET IDE to Create applications

**CO2[K3]:** apply C# and ASP.NET concepts to design applications

**CO3[K4]:** simplify the functionality of the web application in accordance to the user requirement

**CO4[K5]:** evaluate the web application to fix the errors

**CO5[K6]:** build a web application using C# and ASP.NET concepts to solve the problem

**CO-PO Mapping table (Course Articulation Matrix)**

<b>CO \ PO</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>
<b>CO1[K2]</b>	3	2	2	1	2	-	1
<b>CO2[K3]</b>	3	3	3	-	1	1	1
<b>CO3[K4]</b>	3	3	3	1	1	1	2
<b>CO4[K5]</b>	3	3	2	-	1	-	1
<b>CO5[K6]</b>	3	3	2	1	1	-	1
<b>Weighted of the Course</b>	15	14	12	3	6	2	6
<b>Weighted percentage of Course contribution to POs</b>	3.04	2.96	4.32	1.06	3.3	0.9	2.9

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

## **Exercises**

1. C# Basics
2. Looping Constructs
3. Arrays & Jagged Array
4. Strings
5. Classes and Objects
6. Method overloading
7. Delegates
8. LINQ
9. Lambda Expressions

**SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI**  
**DEPARTMENT OF INFORMATION TECHNOLOGY**  
**UG Programme - B.Sc. Information Technology**  
**SEMESTER - IV**  
**ELECTIVE COURSE GENERIC/ DISCIPLINE SPECIFIC - IV: SOFTWARE**  
**ENGINEERING (23UITA41)**  
**(From 2023-2024 Batch onwards)**

**HOURS/WEEK: 3**  
**CREDITS : 3**  
**DURATION : 45 hrs**

**INT. MARKS : 25**  
**EXT. MARKS : 75**  
**MAX. MARKS: 100**

**Course Objectives**

- This paper familiarizes the students about the processes, forms, tasks, techniques and tools involved in Software Engineering
- To use the necessary for software engineering practice.

**Course Outcomes (CO)**

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

**CO1[K1]:**define the basic terminologies involved in software engineering

**CO2[K2]:**understand the suitable models, techniques and tools for the development of a software product

**CO3[K3]:**apply software engineering perspective through requirements analysis, software design and models, verification, and validation to develop solutions to modern problems

**CO4[K4]:**analyze the software process, Design and testing techniques

**CO5[K5]:**estimate the project cost using suitable cost estimation models, rate the software risks and evaluate management strategies for effective software development

**CO-PO Mapping table (Course Articulation Matrix)**

<b>CO \ PO</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>
<b>CO1[K1]</b>	3	2	3	-	1	-	1
<b>CO2[K2]</b>	2	3	3	1	2	-	1
<b>CO3[K3]</b>	2	2	3	1	2	1	2
<b>CO4[K4]</b>	3	2	2	1	2	1	1
<b>CO5[K5]</b>	3	3	3	-	2	1	1
<b>Weighted of the Course</b>	13	12	14	3	9	3	6
<b>Weighted percentage of Course contribution to POs</b>	2.64	2.54	5.04	1.06	4.95	1.35	2.9

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

**UNIT I** (9 hrs)  
**Introduction to Software Engineering:** Definition - The changing nature of software - Software Myths - Terminologies - Role of Management in Software Development - **Software Life Cycle Models:** The Waterfall Model - Increment Process Model - Evolutionary Process Model - The Unified Process.

**UNIT II** (9 hrs)  
**Software Requirements Analysis and Specifications:** Requirements Engineering - Type of Requirements - Feasibility Studies - Requirements Elicitation - Requirements Analysis - Requirements Documentation - Requirements Validation.

**UNIT III** (9 hrs)  
**Software Project Planning:** Size Estimation - Cost Estimation - The Constructive Cost Model (COCOMO) - COCOMO II - The Putnam Resource Allocation Model - Software Risk Management - **Software Design:** Definition - Modularity - Strategy of Design - Function Oriented Design.

**UNIT IV** (9 hrs)  
**Software Testing:** A Strategic Approach to Software Testing - Terminologies - Functional Testing - Structural Testing - Levels of Testing - Validation Testing - Testing Tools.

**UNIT V** (9 hrs)  
**Software Reliability:** Basic Concepts - Software Quality - McCall Software Quality Model - Boehm Software Quality Model - Capability Maturity Model - **Software Maintenance:** Definition - Process - Models - Configuration Management - Documentation.

### TEXTBOOKS

1. K.K Agarwal and Yogesh Singh. *Software Engineering*, New Age International Publishers, 3<sup>rd</sup> Edition, 2009

### REFERENCES

#### Books

1. Roger S. Pressman, *Software Engineering – A Practitioners Approach*, Tata Mc Graw Hill Publication, 5<sup>th</sup> Edition
2. Panaj Jalote. *An Integrated Approach to Software Engineering*, Narosa Publication, 3<sup>rd</sup> Edition, 2005
3. Thomas T. Baker. *Writing Software Documentation – A task oriented approach*, Pearson Education, Second Edition, 2004.
4. Rajib Mall. *Fundamentals of Software Engineering*, Prentice Hall, Second Edition, 2004

#### Web Sources

1. [http://www.tutorialspoint.com/software\\_engineering](http://www.tutorialspoint.com/software_engineering)
2. <http://www.nada.kth.se/lectures/>

**SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI**  
**DEPARTMENT OF INFORMATION TECHNOLOGY**  
**UG Programme - B.Sc. Information Technology**  
**SEMESTER - IV**  
**SKILL ENHANCEMENT COURSE-VII: PRACTICAL: PHP SCRIPTING (23UITS4P)**  
**(From 2023-2024 Batch onwards)**

**HOURS/WEEK: 2**  
**CREDITS : 2**  
**DURATION : 30 hrs**

**INT. MARKS : 25**  
**EXT. MARKS : 75**  
**MAX. MARKS: 100**

**Course Objectives**

- To enable the students to understand, analyze and build dynamic web pages using PHP and jQuery with MySql database
- This paper familiarizes the students about the website and web application development.

**Course Outcomes (CO)**

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

**CO1[K2]:** demonstrate simple programs using PHP and jQuery

**CO2[K3]:** identify the interface setup, styles & themes for the given application

**CO3[K4]:** predict the problem and add necessary user interface components, multimedia components and web data source into the application

**CO4[K5]:** Evaluate the results by implementing the correct techniques on the web form

**CO5[K6]:** design web applications with the facilitated components in PHP and jQuery

**CO-PO Mapping table (Course Articulation Matrix)**

<b>CO \ PO</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>
<b>CO1[K2]</b>	3	2	3	-	1	-	1
<b>CO2[K3]</b>	2	3	3	1	2	-	2
<b>CO3[K4]</b>	2	2	3	1	2	1	2
<b>CO4[K5]</b>	3	2	2	1	2	1	1
<b>CO5[K6]</b>	3	3	3	-	2	1	2
<b>Weighted of the Course</b>	13	12	14	3	9	3	8
<b>Weighted percentage of Course contribution to POs</b>	2.64	2.54	5.04	1.06	4.95	1.35	3.86

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

## **Exercises:**

1. Control Structures
2. Working with Forms.
3. String Manipulations
4. Arrays
5. Functions
6. Sorting
7. Classes and Objects
8. Cookies and Sessions
9. Graphics
10. Working with single table
11. Working with multiple tables
12. Event Handling
13. Handling HTML Forms with jQuery

**SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI**  
**DEPARTMENT OF INFORMATION TECHNOLOGY**  
**UG Programme - B.Sc. Information Technology**  
**SEMESTER - IV**  
**SKILL ENHANCEMENT COURSE– VIII: PRACTICAL: MULTIMEDIA (23UITS4Q)**  
**(From 2023-2024 Batch onwards)**

**HOURS/WEEK: 2**  
**CREDITS : 2**  
**DURATION : 30 hrs**

**INT. MARKS : 25**  
**EXT. MARKS : 75**  
**MAX. MARKS: 100**

**Course Objectives**

- Understands the basics of multimedia
- Acquire knowledge of image editing and animation techniques.
- Apply multimedia concepts to real world projects

**Course Outcomes (CO)**

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

**CO1[K2]:** understanding and use of multimedia fundamentals

**CO2[K3]:**implement appropriate techniques required for editing images and designing animated system

**CO3[K4]:**solve various design and implementation issues materialize on the Development of multimedia systems

**CO4[K5]:**assess different Photo Editing, Video Editing and animation tools and select the appropriate tool based on the requirements

**CO5[K6]:**design and develop Multimedia Projects

**CO-PO Mapping table (Course Articulation Matrix)**

<b>CO \ PO</b>	<b>P01</b>	<b>P02</b>	<b>P03</b>	<b>P04</b>	<b>P05</b>	<b>P06</b>	<b>P07</b>
<b>CO1[K2]</b>	3	3	2	1	1	1	2
<b>CO2[K3]</b>	3	2	3	-	1	1	2
<b>CO3[K4]</b>	3	3	3	1	1	-	1
<b>CO4[K5]</b>	3	3	3	-	1	-	2
<b>CO5[K6]</b>	3	2	2	1	1	1	1
<b>Weighted of the Course</b>	15	13	13	3	5	3	8
<b>Weighted percentage of Course contribution to POs</b>	3.04	2.75	4.68	1.06	2.75	1.35	3.86

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



## **Exercises:**

1. Enlarge a Logo using path
2. Create an ink drawing using path
3. Replace Background of image using Channels
4. Design Front Cover for a Book.
5. Create a customized logo
6. Use clone tool to remove text from an image
7. Remove Red eye using Filter.
8. Morphing - Create smooth transitions from one image to another.
9. Create a Story board for your project
10. Creating Frame-by-frame Animation
11. Create a Motion Tween for Graphic and Text Object
12. Create a Motion guide Layer
13. Create a Shape Tween for Graphic Object
14. Create a Mask Layer
15. Adding buttons with Action Script

**SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI**  
**DEPARTMENT OF CHEMISTRY**  
**UG PROGRAMME**  
**SEMESTER- III & IV**  
**ENVIRONMENTAL STUDIES (23UESR41)**  
**(From 2023 - 2024 Batch onwards)**

**HOURS/WEEK: 2 (III SEM-1, IV SEM-1)**  
**CREDITS : 2**  
**DURATION : 30 hrs**

**INT. MARKS : 25**  
**EXT. MARKS : 75**  
**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 should 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
<b>CO1 [K1]</b>	2	1	-	2	2	1	1
<b>CO2 [K2]</b>	2	1	-	2	1	1	1
<b>CO3 [K3]</b>	2	1	-	1	1	1	1
<b>CO4 [K4]</b>	1	1	1	1	2	1	1
<b>CO5 [K5]</b>	1	1	-	1	2	1	1

<b>Weightage of the course</b>	8	5	1	7	8	5	5
<b>Weighted percentage of Course contribution to Pos</b>	1.62	1.06	0.36	2.46	4.4	2.25	2.42

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*, 10<sup>th</sup> Edition, Pearson, 2010
2. Harris, Frances, *Global Environmental Issues*, 2<sup>nd</sup> Edition, Wiley-Blackwell

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#### **Books**

1. Krishnamurthy K. V, *Textbook of Biodiversity*, Science Publishers, Plymouth, UK.
2. Pittock, Barrie, *Climate Change: The Science, Impacts and Solutions*, 2<sup>nd</sup> 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 INFORMATION TECHNOLOGY**  
**UG Programme - B.Sc. Information Technology**  
**SEMESTER - V**  
**CORE COURSE – IX: PYTHON PROGRAMMING (23UITC51)**  
**(From 2023-2024 Batch onwards)**

**HOURS/WEEK: 5**  
**CREDITS : 4**  
**DURATION : 75 hrs**

**INT. MARKS : 25**  
**EXT. MARKS : 75**  
**MAX. MARKS: 100**

**Course Objectives**

- Understand the concepts of Python programming.
- To apply the OOPs concept in PYTHON programming.
- To impart knowledge on demand and supply concepts.
- Learn to solve basic programming problems.

**Course Outcomes (CO)**

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

**CO1[K1]:** Outline the basic concepts in python language.

**CO2[K2]:** Interpret different looping and conditional statements in python language

**CO3[K3]:** Apply the various data types and identify the usage of control statements, loops, functions and Modules in python for processing the data,

**CO4[K4]:** Analyze and solve problems using basic constructs and techniques of python.

**CO5[K5]:** Assess the approaches used in the development of interactive application.

**CO-PO Mapping table (Course Articulation Matrix)**

<b>PO CO</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>
<b>CO1[K1]</b>	3	2	-	2	-	1	-
<b>CO2[K2]</b>	3	2	1	2	-	1	-
<b>CO3[K3]</b>	2	3	1	2	1	2	-
<b>CO4[K4]</b>	2	3	1	1	1	-	2
<b>CO5[K5]</b>	3	1	2	1	2	1	2
<b>Weightage of the course</b>	13	11	5	8	4	5	4
<b>Weighted percentage of Course contribution to POs</b>	2.64	2.33	1.8	2.82	2.2	2.25	1.93

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

**UNIT I – Basics of Python Programming (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-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 and 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 and 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”*, First Edition, 2017, Oxford University Press.
2. Dr. R. Nageswara Rao, *“Core Python Programming”*, First Edition, 2017, Dream tech Publishers

**REFERENCES**

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

**Web Sources**

1. <https://www.programiz.com/python-programming>
2. <https://www.guru99.com/python-tutorials.html>

**SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI**  
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**UG Programme - B.Sc. Information Technology**  
**SEMESTER - V**

**CORE COURSE – X: PRACTICAL: PYTHON PROGRAMMING (23UITC52)**  
**(From 2023-2024 Batch onwards)**

**HOURS/WEEK: 5**  
**CREDITS : 4**  
**DURATION : 75 hrs**

**INT. MARKS : 25**  
**EXT. MARKS : 75**  
**MAX. MARKS: 100**

**Course Objectives**

- Understand the fundamentals of programming using Python, such as variables, data types, control structures, and functions.
- Learn how to use Python libraries and modules to solve problems.
- Practice writing Python code to solve real-world problems and build basic applications.
- Gain experience with common programming paradigms, such as object-oriented programming and functional programming.
- Understand best practices for debugging and testing code.

**Course Outcomes (CO)**

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

**CO1[K2]:** Understand the significance of control statements, loops and functions in creating Simple programs.

**CO2[K3]:** Interpret the core data structures available in python to store, process and sort the data

**CO3[K4]:** Develop the real time applications using python programming language.

**CO4[K5]:** Analyze the real time problem using suitable python concepts

**CO5[K6]:** Assess the complex problems using appropriate concepts in python

**CO-PO Mapping table (Course Articulation Matrix)**

CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
<b>CO1[K2]</b>	3	2	-	1	-	1	-
<b>CO2[K2]</b>	3	2	-	1	-	1	-
<b>CO3[K3]</b>	3	3	1	2	1	1	-
<b>CO4[K4]</b>	3	3	1	2	1	1	1
<b>CO5[K6]</b>	2	2	2	2	2	2	1
<b>Weightage of the course</b>	14	12	4	8	4	6	2
<b>Weighted percentage of Course contribution to POs</b>	2.84	2.54	1.44	2.82	2.2	2.7	0.97

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

**Exercises:**

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.



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**DEPARTMENT OF INFORMATION TECHNOLOGY**  
**UG Programme - B.Sc. Information Technology**  
**SEMESTER - V**  
**CORE COURSE – XI: OPERATING SYSTEM (23UITC53)**  
**(From 2023-2024 Batch onwards)**

**HOURS/WEEK: 5**  
**CREDITS : 4**  
**DURATION : 75 hrs**

**INT. MARKS : 25**  
**EXT. MARKS : 75**  
**MAX. MARKS: 100**

**Course Objectives**

- The objective of this course is to provide an introduction to the internal operation of modern operating systems.
- To focus on the core concepts such as processes and threads, mutual exclusion, CPU scheduling, deadlock, memory management, and file systems.

**Course Outcomes (CO)**

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

**CO1[K1]:** Outline the fundamental concepts of an OS and their respective functionality.

**CO2[K2]:** Illustrate the importance of open source operating system commands.

**CO3[K3]:** Identify and stimulate management activities of operating system.

**CO4[K4]:** Analyze the various services provided by the operating system.

**CO5[K5]:** Interpret different problems related to Process, Scheduling, Deadlock, memory and Files

**CO-PO Mapping table (Course Articulation Matrix)**

<b>CO \ PO</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>
<b>CO1[K1]</b>	3	2	-	2	-	1	-
<b>CO2[K2]</b>	2	2	1	2	-	2	-
<b>CO3[K3]</b>	2	2	2	2	1	2	-
<b>CO4[K4]</b>	3	2	2	2	-	1	1
<b>CO5[K5]</b>	2	2	2	2	1	1	1
<b>Weightage of the course</b>	12	10	7	10	2	7	2
<b>Weighted percentage of Course contribution to POs</b>	2.43	2.11	2.52	3.52	1.1	3.15	0.97

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

**UNIT I (15 hrs)**

**Introduction:** Definition of Operating System - OS Structures: OS Services - System Calls - Virtual Machines - Process Management: Process Concept - Process Scheduling - Operation on Processes - Co-operating Processes - Inter-process Communication.

**UNIT II (15 hrs)**

**CPU Scheduling:** Basic Concepts - Scheduling Criteria - Scheduling Algorithms - Process Synchronization: The Critical Section Problem - Semaphores - Classical Problems of Synchronization - Critical Regions.

**UNIT III (15 hrs)**

**Deadlocks:** System Model - Deadlock characterization – Methods for Handling Deadlocks Deadlock Prevention - Deadlock avoidance- Deadlock Detection - Recovery from Deadlock.

**UNIT IV (15 hrs)**

**Storage management:** Memory management - Swapping – Contiguous Memory allocation. Paging – Segmentation –Segmentation with Paging –**Virtual memory:** Demand paging - Page replacement –Thrashing. **Mass-Storage Structure:** Disk Structure- Disk scheduling.

**UNIT V (15 hrs)**

**File-System Interface:** File Concept-File Attributes-File Operations – Access Methods: Sequential Access – Direct Access –**Directory Structure:** Single-Level Directory- Two –Level Directory-Tree-Structured Directories- Introducing Shell Programming – Linux General Purpose Commands-Process Oriented Commands – Communication Oriented Commands.

**TEXTBOOKS**

1. Abraham Silberschatz, Peter Baer Galvin, Greg Gagne (2012), *Operating System Concepts*, 9<sup>th</sup> edition, Wiley Student Edition.
2. B.Mohamed Ibrahim, (2005), –*Linux Practical Approach*, Firewall Media

**REFERENCES**

**Books**

1. Milan Milenkovic (2003), *Operating System Concepts and Design*, McGraw Hill.
2. Andrew S. Tanenbaum, (2001), *Modern Operating Systems*, 2<sup>nd</sup> Edition, Prentice Hall of India.
3. Deital and Deital (1990), *Introduction to Operating System*, Pearson Education
4. William Stallings (1997), *Operating Systems*, Prentice Hall of India.

**Web Sources**

1. [http://www.tutorialspoint.com/operating\\_system/](http://www.tutorialspoint.com/operating_system/)
2. <http://www.reallylinux.com/docs/files.shtml>
3. [http://www.tutorialspoint.com/operating\\_system/os\\_linux.htm](http://www.tutorialspoint.com/operating_system/os_linux.htm)

**SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI**  
**DEPARTMENT OF INFORMATION TECHNOLOGY**  
**UG Programme - B.Sc. Information Technology**  
**SEMESTER - V**  
**CORE COURSE – XII: PROJECT & VIVA VOCE (23UITJ51)**  
**(From 2023-2024 Batch onwards)**

**HOURS/WEEK: 5**  
**CREDITS : 4**  
**DURATION : 75 hrs**

**INT. MARKS : 25**  
**EXT. MARKS : 75**  
**MAX. MARKS: 100**

**Course Objectives**

- This Course provides an Opportunity to apply their acquired knowledge and skill sets in the field of Information Technology to design and develop simple and real time projects.
- To enable the learners to identify the different stages of Research Methodology

**Course Outcomes (CO)**

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

**CO1[K1]:**Identify the problems with the help of programming concepts in current Scenario.

**CO2[K2]:**Explain the working environment such as software applications embedded systems and web services.

**CO3[K3]:**Apply the entire project design based on the requirements of the domain.

**CO4[K4]:**Justify and evaluating the various testing techniques to implement the project.

**CO5[K6]:**Develop skills in report writing through data collection, data analysis, data extraction and presentation.

**CO-PO Mapping table (Course Articulation Matrix)**

PO \ CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
<b>CO1[K1]</b>	3	2	-	1	-	2	1
<b>CO2[K2]</b>	3	3	-	1	-	2	1
<b>CO3[K3]</b>	2	2	-	2	-	1	1
<b>CO4[K5]</b>	-	2	1	2	1	1	1
<b>CO5[K6]</b>	1	3	3	2	1	2	1
<b>Weightage of the course</b>	9	12	4	8	2	8	5
<b>Weighted percentage of Course contribution to POs</b>	<b>1.83</b>	<b>2.54</b>	<b>1.44</b>	<b>2.82</b>	<b>1.1</b>	<b>3.6</b>	<b>2.42</b>

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 40 pages (excluding bibliography & appendices )
8. Two copies of the final project report should be submitted.
9. The Head of the department and the Project Guide will evaluate the final Project Report.
10. The viva-voce board shall consist of the External Examiner, the Head of the Department and the Internal Examiner

The following rubrics will be taken into account for the evaluation of Project work and viva-voce:

### **Internal Assessment (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

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**DEPARTMENT OF INFORMATION TECHNOLOGY**  
**UG Programme - B.Sc. Information Technology**  
**SEMESTER - V**  
**ELECTIVE COURSES GENERIC / DISCIPLINE SPECIFIC - V: BIG DATA**  
**ANALYTICS (23UITO51)**  
**(From 2023-2024 Batch onwards)**

**HOURS/WEEK: 4**  
**CREDITS : 3**  
**DURATION : 60 hrs**

**INT. MARKS : 25**  
**EXT. MARKS : 75**  
**MAX. MARKS: 100**

**Course Objectives**

- Understand the Big Data Platform and its Use cases, Map Reduce Jobs.
- To identify and understand the basics of cluster and decision tree.
- To study about the Association Rules, Recommendation System.
- To learn about the concept of stream.
- Understand the concepts of NoSQL Databases.

**Course Outcomes (CO)**

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

**CO1[K1]:** Work with big data tools and its analysis techniques.

**CO2[K2]:** Analyze data by utilizing clustering and classification algorithms.

**CO3[K3]:** Learn and apply different mining algorithms and recommendation systems for large volumes of data.

**CO4[K4]:** Perform analytics on data streams.

**CO5[K5]:** Learn NoSQL databases and management.

**CO-PO Mapping table (Course Articulation Matrix)**

CO \ PO	P01	P02	P03	P04	P05	P06	P07
<b>CO1[K1]</b>	3	2	-	2	1	-	1
<b>CO2[K2]</b>	2	2	-	2	-	1	-
<b>CO3[K3]</b>	2	2	-	2	1	1	1
<b>CO4[K4]</b>	2	2	1	2	1	1	1
<b>CO5[K5]</b>	2	2	2	2	1	1	1
<b>Weightage of the course</b>	11	10	3	10	4	4	4
<b>Weighted percentage of Course contribution to POs</b>	2.23	2.11	1.08	3.52	2.2	1.8	1.93

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

**UNIT I – Evolution of Big data****(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 – Map Reduce and YARN - Map Reduce Programming Model.

**UNIT II****(12 hrs)**

Advanced Analytical Theory and Methods: Overview of Clustering - K-means - Use Cases - Overview of the Method - Determining the Number of Clusters - Diagnostics - Reasons to Choose and Cautions .- Classification: Decision Trees - Overview of a Decision Tree - The General Algorithm - Decision Tree Algorithms - Evaluating a Decision Tree - Decision Trees in R - Naïve Bayes - Bayes? Theorem - Naïve Bayes Classifier.

**UNIT III****(12 hrs)**

Advanced Analytical Theory and Methods: Association Rules - Overview - Apriori Algorithm - Evaluation of Candidate Rules - Applications of Association Rules - Finding Association& finding similarity - Recommendation System: Collaborative Recommendation- Content Based Recommendation - Knowledge Based Recommendation- Hybrid Recommendation Approaches.

**UNIT IV****(12 hrs)**

Introduction to Streams Concepts - Stream Data Model and Architecture - Stream Computing, Sampling Data in a Stream - Filtering Streams - Counting Distinct Elements in a Stream - Estimating moments - Counting oneness in a Window - Decaying Window - Real time Analytics Platform(RTAP) applications - Case Studies - Real Time Sentiment Analysis, Stock Market Predictions. Using **Graph Analytics for Big Data**: Graph Analytics.

**UNIT V****(12 hrs)**

**Databases** : Schema-less Models?: Increasing Flexibility for Data Manipulation - Key Value Stores - Document Stores - Tabular Stores - Object Data NoSQL Stores - Graph Databases Hive - Sharding -Hbase - Analyzing big data with twitter - Big data for E-Commerce Big data for blogs - Review of Basic Data Analytic Methods using R.

**TEXTBOOK**

1. AnandRajaraman and Jeffrey David Ullman, “*Mining of Massive Datasets*”, Cambridge University Press, 2012.

## REFERENCES

### Books

1. David Loshin, "*Big Data Analytics: From Strategic Planning to Enterprise Integration with Tools, Techniques, NoSQL, and Graph*", Morgan Kaufmann/El sevier Publishers, 2013.
2. EMC Education Services, "*Data*", *Wiley Data Science and Big Data Analytics: Discovering, Analyzing, Visualizing and Presenting* publishers, 2015.

### Web Sources

1. <https://www.simplilearn.com>
2. [https://www.sas.com/en\\_us/insights/analytics/big-data-analytics.html](https://www.sas.com/en_us/insights/analytics/big-data-analytics.html)

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**DEPARTMENT OF INFORMATION TECHNOLOGY**  
**UG Programme - B.Sc. Information Technology**  
**SEMESTER - V**  
**ELECTIVE COURSES / DISCIPLINE SPECIFIC - V: COMPUTATIONAL**  
**INTELLIGENCE (23UITO52)**  
**(From 2023-2024 Batch onwards)**

**HOURS/WEEK: 4**  
**CREDITS : 3**  
**DURATION : 60 hrs**

**INT. MARKS : 25**  
**EXT. MARKS : 75**  
**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.
- Understand the concepts of Artificial Neural Network and study about the Genetic Algorithm.

**Course Outcomes (CO)**

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

**CO1[K1]:** Describe the fundamentals of artificial intelligence concepts and searching techniques.

**CO2[K2]:** Develop the fuzzy logic sets and membership function and defuzzification techniques.

**CO3[K3]:** Understand the concepts of Neural Network and analyze and apply the learning techniques.

**CO4[K4]:** Understand the artificial neural networks and its applications.

**CO5[K5]:** Learn 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
<b>CO1[K1]</b>	3	2	-	2	1	-	1
<b>CO2[K2]</b>	2	2	-	2	-	1	-
<b>CO3[K3]</b>	2	2	-	2	1	1	1
<b>CO4[K4]</b>	2	2	1	2	1	1	1
<b>CO5[K5]</b>	2	2	2	2	1	1	1
<b>Weightage of the course</b>	<b>11</b>	<b>10</b>	<b>3</b>	<b>10</b>	<b>4</b>	<b>4</b>	<b>4</b>
<b>Weighted percentage of Course contribution to POs</b>	<b>2.23</b>	<b>2.11</b>	<b>1.08</b>	<b>3.52</b>	<b>2.2</b>	<b>1.8</b>	<b>1.93</b>

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 Backpropagation (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*", 2<sup>nd</sup> Edition, Wiley India Pvt. Ltd.
2. Stuart Russell and Peter Norvig, "*Artificial Intelligence - A Modern Approach*", 2<sup>nd</sup> Edition, Pearson Education in Asia.
3. S. Rajasekaran, G. A. Vijayalakshmi, "*Neural Networks, Fuzzy Logic and Genetic Algorithms: Synthesis & Applications*", PHI.

**REFERENCES**

**Book**

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

**Web Sources**

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

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**UG Programme - B.Sc. Information Technology**  
**SEMESTER - V**  
**ELECTIVE COURSES / DISCIPLINE SPECIFIC - VI: MOBILE APPLICATION**  
**DEVELOPMENT (23UIT053)**  
**(From 2023-2024 Batch onwards)**

**HOURS/WEEK: 4**  
**CREDITS : 3**  
**DURATION : 60 hrs**

**INT. MARKS : 25**  
**EXT. MARKS : 75**  
**MAX. MARKS: 100**

**Course Objectives**

- To provide the students with the basics of Android Software Development tools and development of software on mobile platform.
- To create an application using multiple environments using databases.

**Course Outcomes (CO)**

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

**CO1[K1]:** Chart the requirements needed for developing android application.

**CO2[K2]:** Identify the results by executing the application in emulator or in android device.

**CO3[K3]:** Apply proper interface setup, styles & themes, storing and management.

**CO4[K4]:** Analyze the problem and add necessary user interface components, graphics and multimedia components into the application.

**CO5[K5]:** Evaluate the results by implementing the concept behind the problem with proper code.

**CO-PO Mapping table (Course Articulation Matrix)**

PO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
<b>CO1[K1]</b>	3	2	-	2	-	-	1
<b>CO2[K2]</b>	2	3	-	2	-	1	-
<b>CO3[K3]</b>	3	2	-	2	-	1	-
<b>CO4[K4]</b>	2	3	2	2	1	2	1
<b>CO5[K5]</b>	3	2	2	2	1	2	1
<b>Weightage of the course</b>	13	12	4	10	2	6	3
<b>Weighted percentage of Course contribution to POs</b>	2.64	2.54	1.44	3.52	1.1	2.7	1.45

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

**UNIT I** **(12 hrs)**

Introduction to Android Operating System – Configuration of Android Environment- Create the First Android Application. **Layout:** Vertical, Vertical Scroll, horizontal, horizontal Scroll, Table Layout arrangement. **Designing User Interface:** Label Text - TextView – Password Text Box - Button –ImageButton – CheckBox – Image - RadioButton – Slider – Autocomplete text View.

**UNIT II** **(12 hrs)**

**User Interface:** Spinner – Switch – Side Bar- ListView - List Picker - Image Picker - Notifier - Time and Date Picker - Web Viewer.

**UNIT III** **(12 hrs)**

**Media:** Camcorder - Camera – Player – Speech Recognizer – Text to Speech – Video Player – Canvas.

**UNIT IV** **(12 hrs)**

**Maps:** Maps - Sensor: Location Sensor – Barcode Scanner Social components: Contact Picker – Email Picker – Phone Number Picker – Phone Call - **Social:** Texting

**UNIT V** **(12 hrs)**

**Storage:** Cloud DB – Tiny DB – Experimental – Fire DB .

**TEXTBOOK**

1. Karen Lang and Selim Tezel, (2022), Become an App Inventor The official guide from MIT App Inventor, Miteen Press, Walker Books Limited.

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**Books**

1. Wei – Meng Lee, (2012), Beginning Android 4 Application Development, Wiley India Edition.
2. Deital, Android for Programmers-An App-Driven Approach, Second Edition.

**Web Sources**

1. <http://ai2.appinventor.mit.edu/reference/>
2. <http://appinventor.mit.edu/explore/paint-pot-extended-camera>

**SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI**  
**DEPARTMENT OF INFORMATION TECHNOLOGY**  
**UG Programme - B.Sc. Information Technology**  
**SEMESTER - V**  
**ELECTIVE COURSES / DISCIPLINE SPECIFIC - VI: CRYPTOGRAPHY (23UIT054)**  
**(From 2023-2024 Batch onwards)**

**HOURS/WEEK: 4**  
**CREDITS : 3**  
**DURATION : 60 hrs**

**INT. MARKS : 25**  
**EXT. MARKS : 75**  
**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 secure data in transit across data networks.
- 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 and hence be able to design a security solution.

**CO2[K2]:** Apply the different cryptographic operations of symmetric cryptographic 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)**

CO \ PO	P01	P02	P03	P04	P05	P06	P07
<b>CO1[K1]</b>	3	2	-	2	-	-	1
<b>CO2[K2]</b>	2	3	-	2	-	1	-
<b>CO3[K3]</b>	3	2	-	2	-	1	-
<b>CO4[K4]</b>	2	3	2	2	1	2	1
<b>CO5[K5]</b>	3	2	2	2	1	2	1
<b>Weightage of the course</b>	13	12	4	10	2	6	3

<b>Weighted percentage of Course contribution to POs</b>	<b>2.64</b>	<b>2.54</b>	<b>1.44</b>	<b>3.52</b>	<b>1.1</b>	<b>2.7</b>	<b>1.45</b>
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Based on the level of contribution ('3'-High, '2'-Medium, '1'-Low '-' No Correlation)

**UNIT I (12 hrs)**

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

**UNIT II (12 hrs)**

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

**UNIT III (12 hrs)**

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

**UNIT IV (12 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 (12 hrs)**

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, "*NetworkSecurity*", 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**  
**UG PROGRAMME**  
**SEMESTER -V**

**VALUE EDUCATION (23UVED51)**  
**(From 2023 - 2024 Batch onwards)**

**HOURS/WEEK :2 (T-2, L-)**  
**CREDIT :2**  
**DURATION : 30 hrs**

**INT. MARKS : 25**  
**EXT. MARKS : 75**  
**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)**

CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
<b>CO1 [K1]</b>	2	1	-	1	1	-	2
<b>CO2 [K2]</b>	2	1	-	1	2	1	2
<b>CO3 [K3]</b>	2	1	-	1	2	1	1
<b>CO4 [K4]</b>	1	1	1	1	2	1	1
<b>CO5 [K5]</b>	1	1	-	1	2	1	1
<b>Weightage of the course</b>	08	05	01	05	09	04	07
<b>Weighted percentage of Course contribution to POs</b>	1.62	1.06	0.36	1.76	4.95	1.8	3.38

**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 Redressal - Violation by State - Violation by Individuals - Nuclear Weapons and terrorism - Safeguards.

## REFERENCES

### BOOKS

1. Pitchaikani Prabhakaran, 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 Chidbhananda, *Indian National Education*, Publication by Ramakrishna Tapovanam.

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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](https://www.youtube.com/watch?v=M9_l9DDvEsw).



**SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI**  
**DEPARTMENT OF INFORMATION TECHNOLOGY**  
**UG Programme - B.Sc. Information Technology**  
**SEMESTER - V**  
**SUMMER INTERNSHIP/INDUSTRIAL TRAINING (23UITJ52)**  
**(From 2023-2024 Batch onwards)**

**HOURS/WEEK: -**  
**CREDITS : 1**  
**DURATION : 25 Days**

**INT. MARKS : 25**  
**EXT. MARKS : 75**  
**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.

**Course Outcomes (CO)**

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

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

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

**CO3[K4]:** utilize both software and hardware required for each applications

**CO4[K5]:** classify the development cycles involved in developing a software

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

**CO-PO Mapping table (Course Articulation Matrix)**

PO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
<b>CO1[K2]</b>	3	2	-	1	1	1	2
<b>CO2[K3]</b>	2	3	-	1	-	1	2
<b>CO3[K4]</b>	2	2	-	2	-	1	1
<b>CO4[K5]</b>	-	2	1	-	-	1	1
<b>CO5[K6]</b>	1	3	3	3	-	1	2
<b>Weightage of the course</b>	8	12	4	7	1	5	8
<b>Weighted percentage of Course contribution to POs</b>	1.62	2.54	1.44	2.46	0.55	2.25	3.86

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

### **Guidelines**

1. Each Student has to undergo minimum 25 days institutional/industry based training during the fourth semester summer vacation.
2. Internships could be undertaken in different organizations, industries and agencies approved by the department.
3. Students should keep a detailed record of activities performed and hrs spent in training and reports the same to the Faculty Coordinator every week.
4. The Internship report should be of minimum 20 pages.
5. Attendance certificate from the organization has to be submitted to the HOD.
6. Two copies of the Internship report should be submitted.
7. The Internship carries 100 marks out of which 25 marks for Internal Assessment and 75 marks for External Examination.
8. The student has to appear for Viva-voce.
9. The viva voce board shall consist of the Head of the Department and the Internal Examiner

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

#### **Internal Assessment (25 Marks)**

Training Report & Review : 15 Marks  
Daily Log Report/Attendance : 05 Marks  
PPT Presentation : 05 Marks

#### **External Examination(75 Marks)**

Training Report : 50 Marks  
Viva Voce : 25 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

**SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI**  
**DEPARTMENT OF INFORMATION TECHNOLOGY**  
**UG Programme - B.Sc. Information Technology**  
**SEMESTER - VI**  
**CORE COURSE – XIII: DATA MINING (23UITC61)**  
**(From 2023-2024 Batch onwards)**

**HOURS/WEEK: 6**  
**CREDITS : 4**  
**DURATION : 90 hrs**

**INT. MARKS : 25**  
**EXT. MARKS : 75**  
**MAX. MARKS: 100**

**Course Objectives**

- To identify the underlying concepts and the fundamental data mining methodologies with the ability to formulate and solve problems.
- To understand the various mining algorithms.

**Course Outcomes (CO)**

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

**CO1[K1]:** Outline the fundamentals and the principles of Data Mining

**CO2[K2]:** Apply suitable different preprocessing for data mining

**CO3[K3]:** Classify data-mining techniques based on the different applications

**CO4[K4]:** Analyze the various data mining algorithms with respect to functionality

**CO5[K5]:** Recommend appropriate data models for data mining techniques to solve real world problems

**CO-PO Mapping table (Course Articulation Matrix)**

PO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
<b>CO1[K1]</b>	3	2	-	2	-	1	-
<b>CO2[K2]</b>	3	2	1	2	-	1	-
<b>CO3[K3]</b>	2	3	1	2	1	2	-
<b>CO4[K4]</b>	2	3	1	1	1	-	2
<b>CO5[K5]</b>	3	1	2	1	2	1	2
<b>Weightage of the course</b>	13	11	5	8	4	5	4
<b>Weighted percentage of Course contribution to POs</b>	<b>2.64</b>	<b>2.33</b>	<b>1.8</b>	<b>2.82</b>	<b>2.2</b>	<b>2.25</b>	<b>1.93</b>

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

**UNIT I – Data Mining (18 hrs)**

**Introduction:** Data Mining – Kinds of Data and Patterns to be Mined – Technologies used –Kinds of Applications are Targeted - Major Issues –Data objects and Attribute types – Basic statistical Descriptions of Data- **Data Preprocessing :** Data Cleaning – Data Integration - Data Reduction - Data Transformation.

**UNIT II (18 hrs)**

**Association Rules Mining:** Introduction – Frequent Itemset Mining Methods: Apriori Algorithm-Generating Association Rules from Frequent Itemsets-Improving the efficiency of Apriori-A Pattern –Growth Approach for mining Frequent Itemsets-Pattern Evaluation Methods.

**UNIT III (18 hrs)**

**Classification:** Introduction –Basic concepts – Logistic regression - Decision tree induction–Bayesian classification, Rule–based classification-Model Evaluation and selection.

**UNIT IV (18 hrs)**

**Cluster Analysis:** Introduction-Requirements for Cluster Analysis - **Partitioning Methods:** The K-Means method - **Hierarchical Method:** Agglomerative method - **Density based methods:** DBSCAN-**Evaluation of Clustering:** Determining the Number of Clusters – Measuring Clustering Quality.

**UNIT V (18 hrs)**

**Outlier Detection:** Outliers and Outlier Analysis – Outlier Detection Methods -**Data Visualization:** Pixel-oriented visualization – Geometric Projection visualization technique-Icon-based-Hierarchical visualization-Visualizing complex data and relations.

**TEXTBOOK**

1. Jiawei Han, Micheline Kamber, Jian Pei, “*Data Mining concepts and techniques*”, 3<sup>rd</sup> Edition, Elsevier publication, 2012.

**REFERENCES**

**Books**

1. Ian H. Witten and Eibe Frank, (2005), “*Data Mining: Practical Machine Learning Tools and Techniques*” Second Edition, Morgan Kaufmann.
2. Arun K Pujari, “*Data Mining Techniques*”, 10 impression, University Press, 2008.
3. Daniel T. Larose, Chantal D. Larose, “*Data mining and Predictive analytics*,” Second Ed., Wiley Publication, 2015.
4. G.K. Gupta, “*Introduction to Data mining with case studies*”, 2<sup>nd</sup> Edition, PHI Private limited, New Delhi, 2011.

**Web Sources**

1. <http://csed.sggs.ac.in/csed/sites/default/files/WEKA%20Explorer%20Tutorial.pdf>

**SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI**  
**DEPARTMENT OF INFORMATION TECHNOLOGY**  
**UG Programme - B.Sc. Information Technology**  
**SEMESTER - VI**  
**CORE COURSE – XIV: PRACTICAL: DATA MINING (23UITC62)**  
**(From 2023-2024 Batch onwards)**

**HOURS/WEEK: 6**  
**CREDITS : 4**  
**DURATION : 90 hrs**

**INT. MARKS : 25**  
**EXT. MARKS : 75**  
**MAX. MARKS: 100**

**Course Objectives**

- Understand the data sets, data preprocessing and demonstrate the working of algorithms for data mining tasks such as association rule mining, classification, clustering and regression.
- To understand the various mining algorithms practices.

**Course Outcomes (CO)**

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

**CO1[K1]:** Understand the real time datasets for analysis

**CO2[K2]:** Apply suitable preprocessing for data mining task

**CO3[K3]:** Demonstrate data-mining techniques based on the different applications

**CO4[K4]:** Analyze the performance evaluation of various data mining algorithms

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

**CO-PO Mapping table (Course Articulation Matrix)**

CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
<b>CO1[K1]</b>	3	2	-	1	-	1	-
<b>CO2[K2]</b>	3	2	-	1	-	1	-
<b>CO3[K3]</b>	3	3	1	2	1	1	-
<b>CO4[K4]</b>	3	3	1	2	1	1	1
<b>CO5[K5]</b>	2	2	2	2	2	2	1
<b>Weightage of the course</b>	14	12	4	8	4	6	2
<b>Weighted percentage of Course contribution to POs</b>	2.84	2.54	1.44	2.82	2.2	2.7	0.97

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

## **Exercises:**

1. Understanding the data
2. Visualization Techniques
3. Data Preprocessing
4. Handling Missing Values
5. Data Reduction-Principal Component Analysis
6. Data Normalization-Min-Max, Z-score, Decimal Scaling
7. Association Rule Mining-Apriori Algorithm
8. Classification
9. Logistic Regression
10. Decision Tree
11. Naive Bayesian
12. Clustering
13. K-Means Clustering
14. DBSCAN
15. Agglomerative
16. Case Study

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

**CORE COURSE – XV: DATA COMMUNICATION AND NETWORKING (23UITC63)**  
**(From 2023-2024 Batch onwards)**

**HOURS/WEEK: 6**  
**CREDITS : 4**  
**DURATION : 90 hrs**

**INT. MARKS : 25**  
**EXT. MARKS : 75**  
**MAX. MARKS: 100**

**Course Objectives**

- This course is to provide students with an overview of the concepts and fundamentals of data communication and computer networks.
- To familiarize the student with the basic taxonomy and terminology of the computer.

**Course Outcomes (CO)**

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

**CO1[K1]:** Understand the fundamental concepts of computer networks and its application areas.

**CO2[K2]:** Identify and use various networking techniques and components to establish networking connection and transmission.

**CO3[K3]:** Analyze the services performed by different network layers and recent advancements in networking.

**CO4[K4]:** Compare various networking models, layers, protocols and technologies.

**CO5[K5]:** Select the appropriate networking mechanisms to build a reliable network

**CO-PO Mapping table (Course Articulation Matrix)**

PO \ CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
<b>CO1[K1]</b>	3	2	-	2	-	1	-
<b>CO2[K2]</b>	3	2	1	2	-	1	-
<b>CO3[K3]</b>	2	3	1	2	1	2	-
<b>CO4[K4]</b>	2	3	1	1	1	-	2
<b>CO5[K5]</b>	3	1	2	1	2	1	2
<b>Weightage of the course</b>	13	11	5	8	4	5	4
<b>Weighted percentage of Course contribution to POs</b>	2.64	2.33	1.8	2.82	2.2	2.25	1.93

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

**UNIT I – Data Communication-Networks (18 hrs)**

**Introduction: Data Communication-Networks:** Distributed Processing-Network Criteria Physical Structures –Network Models-Categories of Network-Internetwork - The Internet Protocols and Standards – **Network Models:** Layers in the OSI Model - TCP/IP Protocol Suite.

**UNIT II (18 hrs)**

**Data and Signals:** Analog and Digital Data - Analog and Digital Signals – Performance - Digital Transmission: Transmission Modes – Multiplexing: FDM – WDM - Synchronous TDM -Statistical TDM - Transmission **Media:** Guided media - Unguided Media.

**UNIT III (18 hrs)**

**Switching:** Circuit Switched Networks - Datagram Networks-Virtual Circuit Network - Error Detection and Correction: Introduction - Block Coding - Linear Block Codes - **Cyclic Codes:** Cyclic Redundancy Check - Checksum. Data Link Control: Framing - Flow Control and Error Control - **Noiseless Channel:** Stop-and-wait Protocol.

**UNIT IV (18 hrs)**

**Wired LANs:** Standard Ethernet-GIGABIT Ethernet-Wireless LAN: **Bluetooth Connecting LANs: Connecting Devices:** Passive Hubs-Repeaters-Active Hubs-Bridges-Two Layer Switches-Routers-Three layer Switches-Gateway-Network Layer: Internet Protocol: IPv4 –Ipv6-Transition from IPv4 to IPv6.

**UNIT V (18 hrs)**

**Network Layer:** Delivery, Forwarding and Routing- Unicast Routing Protocols: Distance Vector Routing-Link state routing- **Future & Current Trends in Computer Networks: 5G Network:** Salient Features-Technology-Applications-Advanced Features-**Advantages & Disadvantages-Internet of Things:** key Features -Advantages & Disadvantages-IOT Hardware- IOT Technology and Protocols-IOT Common Uses-Applications-WiFi-WiMax Lifi- Lifi vs Wifi.

**TEXTBOOKS**

1. Behrouz and Forouzan,(2006), “*Data Communication and Networking*”, 4<sup>th</sup> Edition, TMH.
2. Ajit Pal,(2014), “*Data Communication and Computer Networks*”, PHI.

**REFERENCES**

**Book**

1. Jean Walrand (1998), “*Communication Networks*”, Second Edition, TataMcGraw Hill.



## Web Sources

1. [http://www.tutorialspoint.com/data\\_communication\\_computer\\_network/](http://www.tutorialspoint.com/data_communication_computer_network/)
2. [http://www.slideshare.net/zafar\\_ayub/data-communication-and-network-11903853](http://www.slideshare.net/zafar_ayub/data-communication-and-network-11903853)
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**SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI**  
**DEPARTMENT OF INFORMATION TECHNOLOGY**  
**UG Programme - B.Sc. Information Technology**  
**SEMESTER - VI**  
**ELECTIVE COURSES GENERIC / DISCIPLINE SPECIFIC - V: IOT AND ITS**  
**APPLICATIONS (23UITO61)**  
**(From 2023-2024 Batch onwards)**

**HOURS/WEEK: 5 (L-4, T-0)**  
**CREDITS : 3**  
**DURATION : 75 hrs**

**INT. MARKS : 25**  
**EXT. MARKS : 75**  
**MAX. MARKS: 100**

**Course Objectives**

- Use of Devices, Gateways and Data Management in IoT.
- Design IoT applications in different domain and be able to analyze their performance.
- 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]:** Work with big data tools and its analysis techniques.

**CO2[K2]:** Analyze data by utilizing clustering and classification algorithms.

**CO3[K3]:** Learn and apply different mining algorithms and recommendation systems for large volumes of data.

**CO4[K4]:** Perform analytics on data streams.

**CO5[K5]:** Learn NoSQL databases and management.

**CO-PO Mapping table (Course Articulation Matrix)**

PO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
<b>CO1[K1]</b>	3	2	-	2	-	-	1
<b>CO2[K2]</b>	2	3	-	2	-	1	-
<b>CO3[K3]</b>	3	2	-	2	-	1	-
<b>CO4[K4]</b>	2	3	2	2	1	2	1
<b>CO5[K5]</b>	3	2	2	2	1	2	1
<b>Weightage of the course</b>	13	12	4	10	2	6	3
<b>Weighted percentage of Course contribution to POs</b>	2.64	2.54	1.44	3.52	1.1	2.7	1.45

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

**UNIT I – IoT & Web Technology (15 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 (15 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 (15 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 (15 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 (15 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.

**TEXTBOOKS**

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

**REFERENCES**

**Books**

1. Michael Miller, "*The Internet of Things: How Smart TVs, Smart Cars, Smart Homes, and Smart Cities Are Changing the World*", kindle version.
2. Francis daCosta, "*Rethinking the Internet of Things: A Scalable Approach to Connecting*

- Everything*", Apress Publications 2013, 1st Edition,
3. Walteneus Dargie, Christian Poellabauer, "Fundamentals of Wireless Sensor Networks: Theory and Practice"
  4. 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 INFORMATION TECHNOLOGY**  
**UG Programme - B.Sc. Information Technology**  
**SEMESTER - VI**  
**ELECTIVE COURSES GENERIC/ DISCIPLINE SPECIFIC - V: ROBOTICS AND ITS**  
**APPLICATIONS (23UIT062)**  
**(From 2023-2024 Batch onwards)**

**HOURS/WEEK: 5 (L-5, T-0)**  
**CREDITS : 3**  
**DURATION : 75 hrs**

**INT. MARKS : 25**  
**EXT. MARKS : 75**  
**MAX. MARKS: 100**

**Course Objectives**

- To understand the robotics fundamentals.
- Understand the sensors and matrix methods.
- Understand the Localization: Self-localizations and mapping.
- To study about the concept of Path Planning, Vision system.
- To learn about the concept of robot artificial intelligence.

**Course Outcomes (CO)**

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

**CO1[K1]:** Describe the different physical forms of robot architectures.

**CO2[K2]:** Kinematically model simple manipulator and mobile robots.

**CO3[K3]:** Mathematically describe a kinematic robot system.

**CO4[K4]:** Analyze manipulation and navigation problems using knowledge of coordinate frames, kinematics, optimization, control, and uncertainty.

**CO5[K5]:** Program robotics algorithms related to kinematics, control, optimization, and uncertainty.

**CO-PO Mapping table (Course Articulation Matrix)**

PO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
<b>CO1[K1]</b>	3	2	-	2	-	-	1
<b>CO2[K2]</b>	2	3	-	2	-	1	-
<b>CO3[K3]</b>	3	2	-	2	-	1	-
<b>CO4[K4]</b>	2	3	2	2	1	2	1
<b>CO5[K5]</b>	3	2	2	2	1	2	1
<b>Weightage of the course</b>	13	12	4	10	2	6	3
<b>Weighted percentage of Course contribution to POs</b>	2.64	2.54	1.44	3.52	1.1	2.7	1.45

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

**UNIT I (15 hrs)**

**Introduction:** Introduction, brief history, components of robotics, classification, workspace, work-envelop, motion of robotic arm, end-effectors and its types, service robot and its application, Artificial Intelligence in Robotics.

**UNIT II (15 hrs)**

**Actuators and sensors :**Types of actuators, stepper-DC-servo-and brushless motors- model of a DC servo motor-types of transmissions-purpose of sensor-internal and external sensor-common sensors-encoders tachometers-strain gauge based force torque sensor-proximity and distance measuring sensors **Kinematics of robots:** Representation of joints and frames, frames transformation, homogeneous matrix, D-H matrix, **Forward and inverse kinematics:** two link planar (RR) and spherical robot (RRP). **Mobile robot Kinematics:** Differential wheel mobile robot.

**UNIT III (15 hrs)**

**Localization:** Self-localizations and mapping - Challenges in localizations – IR based localizations – vision based localizations – Ultrasonic based localizations - GPS localization systems.

**UNIT IV (15 hrs)**

**Path Planning:** Introduction, path planning-overview-road map path planning-cell decomposition path planning potential field path planning-obstacle avoidance-case studies **Vision system:** Robotic vision systems-image representation-object recognition-and categorization-depth measurement- image data compression-visual inspection-software considerations.

**UNIT V (15 hrs)**

**Application:** Ariel robots-collision avoidance robots for agriculture-mining-exploration-underwater-civilian- and military applications-nuclear applications-space Applications-Industrial robots-artificial intelligence in robots-application of robots in material handling-continuous arc welding-spot welding-spray painting-assembly operation-cleaning-etc.

**TEXTBOOKS**

1. Richard D.Klafter. Thomas Achmielewski and Mickael Negin, "*Robotic Engineering and Integrated Approach*", Prentice Hall India-Newdelhi-2001.
2. SaeedB.Nikku, "*Introduction to robotics, analysis*", control and applications, Wiley-India, 2<sup>nd</sup> edition 2011

**REFERENCES**

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1. M.P.Groover et "*Industrial robotic technology-programming and application*" by.al, McGrawhill 2008.
2. S.R.Deb. "*Robotics technology and flexible automation*", THH-2009.

**Web Sources**

1. [https://www.tutorialspoint.com/artificial\\_intelligence/artificial\\_intelligence\\_robotics.htm](https://www.tutorialspoint.com/artificial_intelligence/artificial_intelligence_robotics.htm)
2. <https://www.geeksforgeeks.org/robotics-introduction/>

**SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI**  
**DEPARTMENT OF INFORMATION TECHNOLOGY**  
**UG Programme - B.Sc. Information Technology**  
**SEMESTER - VI**  
**ELECTIVE COURSES GENERIC/ DISCIPLINE SPECIFIC - VI: TRENDS IN**  
**COMPUTING (23UITO63)**  
**(From 2023-2024 Batch onwards)**

**HOURS/WEEK: 5 (L-0, T-5)**  
**CREDITS : 3**  
**DURATION : 75 hrs**

**INT. MARKS : 25**  
**EXT. MARKS : 75**  
**MAX. MARKS: 100**

**Course Objectives**

- Learning current trends in various computer science and information technology fields.
- Learning various fields of Cloud computing, Green computing ,the Edge and Fog computing technology.
- To learn about Architecture and Application design of Cloud, Edge & fog computing.
- To know computing and to improve security services of computing technologies.
- To learn the various Case Studies in Cloud, Edge & fog Computing.

**Course Outcomes (CO)**

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

**CO1[K1]:** Outline the concepts, applications, benefits and limitations of various computing paradigms.

**CO2[K2]:** Classify the computing technologies based on its architecture and infrastructure and identify its strategies.

**CO3[K3]:** Examine various cloud services, Security threat exposure within a cloudcomputing infrastructure.

**CO4[K4]:** Asses the problems and solutions involved in various stages of different computing environments.

**CO5[K5]:** Discuss the importance of cloud, edge and Fog technology and implement innovative ideas and practices for regulating green IT.

**CO-PO Mapping table (Course Articulation Matrix)**

PO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
<b>CO1[K1]</b>	3	2	-	2	-	-	1
<b>CO2[K2]</b>	2	3	-	2	-	1	-
<b>CO3[K3]</b>	3	2	-	2	-	1	-
<b>CO4[K4]</b>	2	3	2	2	1	2	1
<b>CO5[K5]</b>	3	2	2	2	1	2	1



<b>Weightage of the course</b>	13	12	4	10	2	6	3
<b>Weighted percentage of Course contribution to POs</b>	2.64	2.54	1.44	3.52	1.1	2.7	1.45

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

### **UNIT I - Era of Cloud Computing (15 hrs)**

**Era of Cloud Computing:** Introduction – Components of Cloud Computing – Cloud Types: Private, Public and Hybrid clouds – Limitations of the Cloud - **Virtualization:** Structure and Mechanisms.

### **UNIT II (15 hrs)**

**Cloud computing Services:** Software as a Service(SaaS) – Platform as a Service(PaaS)- Infrastructure as a Service(IaaS)-Database as a Service (DBaaS)- Recent Trends in cloud computing and Standards-**Data Security in Cloud** – Risks and Challenges with Cloud Data- Security as a Service.

### **UNIT III (15 hrs)**

**Edge Computing:** Edge Computing and Its Essentials: Introduction- Edge Computing Architecture- Advantages and Limitations of Edge Computing Systems- Edge Computing Interfaces and Devices - Edge Analytics: Edge Data Analytics – Potential of Edge Analytics – Architecture of Edge Analytics – Case study.

### **UNIT IV (15 hrs)**

**Edge Data storage Security:** Edge-Based Attack Detection and Prevention- Edge Computing Use Cases and Case Studies: Edge Computing High- Potential Use Cases. **Introduction to green computing**–Calculating carbon footprint- **Choosing Green PC path:** A green make over – Buying green computer- Choosing Earth Friendly peripherals

### **UNIT V (15 hrs)**

**Fog Computing:** Introduction to Fog computing – Architecture - Characteristics - Fog Computing Services – Fog Resource Estimation and Its Challenges-Fog computing on 5G networks – Fog computing Use cases and Case studies.

### **TEXTBOOKS**

1. Kailas Jayaswal, Jagannath Kallakurchi, Donald J.Houde, Dr.Devan Shah “ *Cloud Computing –Black Book*” Edition :2020 (**UNIT I & II : CHAPTER 1,2,3,9,11**).
2. K. Anitha Kumari G. Sudha Sadasivam D. Dharani M. Niranjanamurthy, “*EDGE COMPUTING Fundamentals, Advances and Applications*”, First Edition 2022, CRC Press. (**UNIT III & IV : CHAPTER 1, 2 , 3, 4,5,6**).

3. Woody Leonhard and Katherine Murray (2009), *Green Home Computing for Dummies*, Willey Publishing Inc. **(UNIT IV : CHAPTER 2 ,5,6,7)**.
4. Evangelos Markakis, George Mastorakis, Constandinos X.Mavromoutakis and Evangelos pallis “*Cloud and Fog computing in 5G mobile Networks*” ,First edition 2017. **( UNIT V: CHAPTER 2 )**

## REFERENCES

### Books

1. RajKumar Buyya, ChristianVecchiola, S.ThamaraiSelvi, (2013), *Mastering Cloud Computing*,McGraw Hill Education.
2. Michael Miller, (2009), *Cloud Computing*, Pearson Education.
3. Shijun Liu Bedir Tekinerdogan Mikio Aoyama Liang-Jie Zhang” *Edge Computing – EDGE* “2018.
4. Flavio Bonomi, Rodolfo Milito, Jiang Zhu, Sateesh Addepalli, –”*Fog Computing and Its Role in the Internet of Things*, MCC’12, August 17, 2012, Helsinki, Finland. Copyright 2012.
5. Amir M. Rahmani · Pasi Liljeberg Jürgo-Sören Preden “*Fog Computing in the Internet of Things*” Springer, 2018. ( UNIT V: PART/CHAPTER (1.4,2.5)

### Web Sources

1. <https://static.googleusercontent.com/media/www.google.com/en//green-en/pdfs/google-green->
2. <http://whatiscloud.com/basic-concepts-and-terminology/cloud>
3. <http://www.computerweekly.com/guides/Using-green-computing-for-improving-energy->

**SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI**  
**DEPARTMENT OF INFORMATION TECHNOLOGY**  
**UG Programme - B.Sc. Information Technology**  
**SEMESTER - VI**  
**ELECTIVE COURSES GENERIC/ DISCIPLINE SPECIFIC - VI: ARTIFICIAL NEURAL NETWORKS (23UITO64)**  
**(From 2023-2024 Batch onwards)**

**HOURS/WEEK: 5 (L-4, T-0)**  
**CREDITS : 3**  
**DURATION : 75 hrs**

**INT. MARKS : 25**  
**EXT. MARKS : 75**  
**MAX. MARKS: 100**

**Course Objectives**

- Understand the basics of artificial neural networks, learning process, single layer and multi-layer perceptron networks.
- Understand the Error Correction and various learning algorithms and tasks.
- Identify the various Single Layer Perception Learning Algorithm and the various Multi-Layer Perception Network.
- Analyze the Deep Learning of various Neural network and its Applications.

**Course Outcomes (CO)**

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

**CO1[K1]:** Students will learn the basics of artificial neural networks with layer and multi-layer perception networks.

**CO2[K2]:** Learn about the Error Correction and various learning algorithms and tasks.

**CO3[K3]:** Learn the various Perception Learning Algorithm.

**CO4[K4]:** Learn about the various Multi-Layer Perception Network.

**CO5[K5]:** Understand the Deep Learning of various Neural network and its applications.

**CO-PO Mapping table (Course Articulation Matrix)**

PO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
<b>CO1[K1]</b>	3	2	-	2	-	-	1
<b>CO2[K2]</b>	2	3	-	2	-	1	-
<b>CO3[K3]</b>	3	2	-	2	-	1	-
<b>CO4[K4]</b>	2	3	2	2	1	2	1
<b>CO5[K5]</b>	3	2	2	2	1	2	1
<b>Weightage of the course</b>	13	12	4	10	2	6	3

<b>Weighted percentage of Course contribution to POs</b>	<b>2.64</b>	<b>2.54</b>	<b>1.44</b>	<b>3.52</b>	<b>1.1</b>	<b>2.7</b>	<b>1.45</b>
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Based on the level of contribution ('3'-High, '2'-Medium, '1'-Low '-' No Correlation)

#### **UNIT I (15 hrs)**

Artificial Neural Model- Activation functions- Feed forward and Feedback, Convex Sets, Convex Hull and Linear Separability, Non-Linear Separable Problem - Multilayer Networks. Learning Algorithms- Error correction - Gradient Descent Rules, Perception Learning Algorithm, Perception Convergence Theorem.

#### **UNIT II (15 hrs)**

Introduction, Error correction learning, Memory-based learning, Hebbian learning, Competitive learning, Boltzmann learning, credit assignment problem, Learning with and without teacher, learning tasks, Memory and Adaptation.

#### **UNIT III (15 hrs)**

**Single layer Perception:** Introduction, Pattern Recognition, Linear classifier, Simple perception, Perception learning algorithm, Modified Perception learning algorithm, Adaptive linear combiner, Continuous perception, learning in continuous perception. Limitation of Perception.

#### **UNIT IV (15 hrs)**

**Multi-Layer Perception Networks:** Introduction, MLP with 2 hidden layers, Simple layer of a MLP, Delta learning rule of the output layer, Multilayer feed forward neural network with continuous perceptions, Generalized delta learning rule, Back propagation algorithm.

#### **UNIT V (15 hrs)**

Deep learning- Introduction- Neuro architectures building blocks for the DL techniques, Deep Learning and Neocognitron, Deep Convolutional Neural Networks, Recurrent Neural Networks (RNN), feature extraction, Deep Belief Networks, Restricted Boltzman Machines, Training of DNN and Applications

#### **TEXTBOOKS**

1. *Neural Networks A Classroom Approach*- Satish Kumar, McGraw Hill- Second Edition.
2. *Neural Network- A Comprehensive Foundation*"- Simon Haykins, Pearson Prentice Hall, 2nd Edition, 1999.

#### **REFERENCES**

##### **Books**

1. Artificial Neural Networks-B. Yegnanarayana, PHI, New Delhi 1998.

##### **Web Sources**

1. [https://www.w3schools.com/ai/ai\\_neural\\_networks.asp](https://www.w3schools.com/ai/ai_neural_networks.asp)

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

**SKILL ENHANCEMENT COURSE- IX: PROFESSIONAL COMPETENCY SKILL:**  
**PRACTICAL: MOBILE APPLICATION DEVELOPMENT (23UITS6P)**  
**(From 2023-2024 Batch onwards)**

**HOURS/WEEK: 2 (L-0, T-0,P-0)**  
**CREDITS : 2**  
**DURATION : 30 hrs**

**INT. MARKS : 25**  
**EXT. MARKS : 75**  
**MAX. MARKS: 100**

**Course Objectives**

- This course enables the learners to develop Android Apps for Mobile Application Development.
- This course used to develop the various real time applications using database.

**Course Outcomes (CO)**

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

**CO1[K2]:** illustrate the basic components of android

**CO2[K3]:** apply the interactive tools to perform form actions

**CO3[K4]:** analyse the different methodologies to integrate the map

**CO4[K5]:** examine the various protocols to send group mails

**CO5[K6]:** design and create new professional mobile applications

**CO-PO Mapping table (Course Articulation Matrix)**

PO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
<b>CO1[K2]</b>	3	2	-	2	-	-	1
<b>CO2[K3]</b>	3	2	-	2	-	2	1
<b>CO3[K4]</b>	2	2	1	2	1	2	-
<b>CO4[K5]</b>	2	2	1	2	1	2	1
<b>CO5[K6]</b>	2	1	1	2	1	2	2
<b>Weightage of the course</b>	12	9	3	10	3	8	5
<b>Weighted percentage of Course contribution to POs</b>	2.43	1.9	1.08	3.52	1.65	3.6	2.42

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

## **Exercises**

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

**SRI KALISWARI COLLEGE (AUTONOMOUS), SIVAKASI**  
**UG Programme**  
**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
<b>CO1 [K1]</b>	2	-	-	2	2	1	1

<b>CO2 [K2]</b>	2	1	-	2	1	1	1
<b>CO3 [K3]</b>	2	-	-	1	2	2	1
<b>CO4 [K4]</b>	1	1	1	1	2	2	1
<b>CO5 [K6]</b>	1	-	-	1	2	2	1
<b>Weightage of the course</b>	08	02	01	07	09	08	05
<b>Weighted percentage of Course contribution to Pos</b>	<b>1.45</b>	<b>0.52</b>	<b>0.52</b>	<b>1.63</b>	<b>5.81</b>	<b>3.85</b>	<b>2.46</b>

**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