CURRICULUM AND SYLLABUS

BCA (BACHELOR IN COMPUTER APPLICATIONS)

DEPARTMENT OF COMPUTER SCIENCE AND APPLICATIONS

(Applicable for students admitted from 2025-2026 onwards)

SRI CHANDRASEKHARENDRA SARASWATHI VISWA MAHA VIDYALAYA
DEPARTMENT OF COMPUTER SCIENCE and APPLICATIONS
Bachelor in Computer Applications
REGULATIONS
(Effective from the Academic Year2025-2026)

The Department of Computer Science and Applications was established during 1996 with the vision of Empower every student to be innovative, creative and productive in the field of Computer Science by imparting quality education, developing skills and inculcating human values. The Department of Computer Science offers the following Programmes.

- ❖ B.Sc. in Computer Science
- ❖ BCA
- ❖ MCA

As per the NEP 2020 Policy, The Department offers the following UG 4-Year Honours Programmes with an exit option at the end of the 3rd year, 2nd year and 1st year from the year 2023-2024.

- ❖ B.Sc. in Computer Science
- ❖ BCA

As per the NEP 2020 Policy, The Department offers the following UG 4-Year Honours Programmes with an exit option at the end of the 3rd year, 2nd year and 1st year from the year 2024-2025.

- ❖ B.Sc. in Data Science
- ❖ B.Sc. in Cyber Security

SALIENT FEATURES OF FOUR YEARS UNDER GRADUATE PROGRAMMES

1. It is a Choice Based Credit System under Semester Scheme.
2. The Programmes comprise of about 50% Discipline Specific Core Courses as Major subjects, 20% Discipline Specific Core Courses / Multi-Discipline Specific Courses as Minor courses, and remaining 30% Ability Enhancement Compulsory Courses, Skill Enhancement Courses along with Open Elective Courses.
3. The relative importance of Courses of the study is measured in terms of credits.
4. The declaration of result is based on Aggregate Percentage of marks obtained and Cumulative Grade Point Average (CGPA) earned.
5. The candidate has an option to exit after TWO, FOUR and SIX semesters of the Programme and shall be awarded Certificate, Diploma, and General Degree, respectively with a provision to reenter and complete the degree.

I. PROGRAMME EDUCATIONAL OBJECTIVES (PEOs)

Graduates from the Bachelor of Computer Science and Applications are expected to achieve the following PEOs

PEO1: To develop skilled manpower in the various areas of Information Technology like Software Development, Database Management, Computer Languages and Web Based applications etc.

PEO2: To prepare the students to start the career as an Application Developer, Network Administrator, Software Tester, Web Developer etc.

PEO3: To encourage the students for research activities and entrepreneurial skills by inculcating interactive quality teaching and organizing symposiums, conferences, seminars, workshops, etc.

PEO4: To provide students with an academic environment that fosters excellence, transparency, leadership and promote awareness of life-long learning.

II. PROGRAMME LEARNING OUTCOMES (PLOs)

The graduates of Bachelor of Computer Science and Applications will be able to:

PLO1: Knowledge: (Cognitive)

Identify the programming and technical knowledge acquired in the current industrial demands

PLO2: Critical Thinking Skills (Cognitive)

Analyze the complex problems and identify solutions through critical thinking skills

PLO3: Practical Skills: (Psychomotor)

Adapt to the latest tools and techniques used to develop domain based innovative solutions with the acquired technical and operational skills

PLO4: Teamwork Skills: (Affective)

Function and contribute as a team in the diversified environment in taking competitive decision.

PLO5: Communication Skills: (Affective)

Communicate effectively with the computing community as well as society to comprehend effective documentation and presentation

PLO6: Digital Skills: (Affective)

Incorporate advanced digital skills in designing, developing, managing and deploying in media and technical field.

PLO7: Leadership Skills: (Affective)

Articulate leadership skills in motivating the team towards the target in a multidisciplinary environment

PLO8: Lifelong Learning Skills: (Affective)

Recognize the need and ability to involve independent and lifelong learning in the changing era of technology

PLO9: Entrepreneurial Skills: (Affective)

Interpret the impact of professional business solutions on business environment for sustainable environment

PLO10: Ethics and Professional Skills: (Affective)

Follow ethical principles and commit to professional responsibilities for a relevant technical practice.

III. PROGRAMME SPECIFIC OUTCOMES (PSOs)

PSO1: Ability to understand the programming concepts, methodologies and algorithm to solve computational problems

PSO2: Ability to apply emerging software development techniques and tools in providing real-time solutions

MAPPING OF PEOs TO PLOs

	PEO1	PEO2	PEO3	PEO4
PLO1	3	3	2	2
PLO2	3	3	2	2
PLO3	3	3	2	3
PLO4	2	2	3	3
PLO5	2	3	2	2
PLO6	2	3	2	2
PLO7	2	3	3	3
PLO8	3	2	2	3
PLO9	3	3	3	2
PLO10	2	3	2	3

MAPPING OF PEOs TO PSOs

	PSO1	PSO2
PEO1	3	2
PEO2	2	2
PEO3	2	3
PEO4	3	3

3 – Strong,   2 – Medium, 1 – Low

ELIGIBILITY FOR ADMISSION

Candidates for admission to the first year of the Degree of **Bachelor in Computer Applications** shall be required to have passed the Higher Secondary Examination conducted by the Government of Tamil Nadu or an Examination accepted as equivalent thereof by the University authorities, with Mathematics / Business Mathematics / Statistics / Computer Science or Equivalent / Commerce / Accountancy as one of the subjects in XII Std. The upper age limit to join the first year is 19.

For Lateral Entry to II year, Candidates for admission to the Second year of the Degree of **Bachelor in Computer Applications** shall be required to have passed the Diploma in Computer Technology Examination conducted by the Government of Tamil Nadu, or an Examination accepted as equivalent thereof by the University Authorities The upper age limit to join the second year is 21.

DURATION OF THE COURSE

The duration of the UG Programme is 4 years or 8 semesters. Students who desire to undergo a 3-year UG Programme will be allowed to exit after completion of the 3rd year. If a student wants to leave after the completion of the first or second year, the student will be given a UG Certificate or UG Diploma, respectively, provided they secure the prescribed number of credits. Students who exit with a UG certificate or UG diploma are permitted to re-enter within three years and complete the degree Programme.

Students may be permitted to take a break from the study during the period of study but the total duration for completing the Programme shall not exceed 7 years.

REGISTRATION OF COURSE

A newly admitted student will automatically be registered for all the courses prescribed for the first semester without option. Every student shall submit a completed registration form indicating the list of courses intended to be credited during the second to final semester. This registration will be done a week before the last working day of the current semester.

CHOICE BASED CREDIT SYSTEM

The University follows the '**Choice Based Credit System (CBCS)**'for all its Programmes. Each course is normally assigned one credit per lecture per week and one credit for two periods of tutorials or part thereof or laboratory or practical per week.

STRUCTURE OF THE COURSE AND EVALUATION PATTERN

Internal Marks: 40   -   External Marks: 60

The duration of University examination for both theory and practical subjects shall be 3 hours. The maximum marks for each theory and practical course is 100. Continuous Internal Assessment (CIA) will be for 40. The university theory examination will be conducted for 100 marks, which will be then converted to 60 in order to add with continuous internalassessment to make 100 marks for the course. For the conduct of University examinationsin practical, the question paper for the practical examination will be set by both internal and external examiners appointed by the University.

S. No.	L-T-P	Credits	Continuous Assessments (40 marks)			End Semester Examinations (60 marks)	
			Theory	Practical	Assignments & Attendance	Theory	Practical
1	3-1-4	6	20 marks	10 marks	10 marks	40 marks	20 marks
2	3-1-2	5	24 marks	6 marks	10 marks	50 marks	10 marks
3	4-1-0	5	30 marks	--	10 marks	60 marks	--
4	3-1-0	4	30 marks	--	10 marks	60 marks	--
5	2-0-0	2	100 marks	--	--	--	--
6	1-0-0	1	100 marks	--	--	--	--

PROCEDURES FOR AWARDING MARKS FOR INTERNAL ASSESSMENT

The break-up of assessment and examination marks for theory subjects is as follows.

First Assessment (Test)	:	15	Marks
Second Assessment (Test)	:	15	Marks
Assignment & Attendance	:	10	Marks

Internal Assessment	:	40	Marks

University Examination	:	60	Marks

Total	:	100	Marks

The break-up of assessment and examination marks for theory cum practical subjects with 6 Credits (3-1-4) is as follows.

First Assessment (Test for Theory)	:	10	Marks
Second Assessment (Test for Theory)	:	10	Marks
Model Practical Examination	:	10	Marks
Assignment & Attendance	:	10	Marks

Internal Assessment	:	40	Marks

University Examination (Theory)	:	40	Marks
University Examination (Practical)	:	20	Marks

Total	:	100	Marks

The break-up of assessment and examination marks for theory cum practical subjects with 5 Credits (3-1-2) is as follows.

First Assessment (Test for Theory)	:	12	Marks
Second Assessment (Test for Theory)	:	12	Marks
Model Practical Examination	:	6	Marks
Assignment & Attendance	:	10	Marks

Internal Assessment	:	40	Marks

University Examination (Theory)	:	50	Marks
University Examination (Practical)	:	10	Marks

Total	:	100	Marks

The break-up of assessment (**Internal Assessment Only**) for all Internal courses is as follows:

Assignment	:	10	Marks
First Internal Test	:	30	Marks
Second Internal Test	:	30	Marks
Seminar	:	10	Marks
Quiz/Objective type test	:	10	Marks
Attendance	:	10	Marks

Total	:	100	Marks

REQUIREMENTS FOR THE COMPLETION OF THE SEMESTER

The candidate who has fulfilled the following conditions shall be deemed to have satisfied the requirements for the completion of the semester.

1. He/ She secures not less than 80% of overall attendance in that semester taking into account the total number of periods in all courses put together attended by the candidate as against the total number of periods in all courses offered during that semester.

2. Condonation of attendance up to 10% is permitted on medical grounds. Relaxation in attendance is permitted up to 10% for the student who represents the university in sports and games. The above two relaxations cannot be taken concurrently.

3. Candidates with 69% - 40% attendance will not be permitted to write the examination (including practical) in the current semester **(Sem-Carry)** and he / she can write the same on the subsequent semester.

4. Candidates with less than 40% attendance will not be permitted to write the end semester examination (including practical) and are not permitted to go for the next semester **(Detained)**. Such candidate required to repeat the incomplete semester in the next academic year, after paying the fee for the break of study as prescribed by the University from time to time.

REQUIREMENTS FOR PROCEEDING TO SUBSEQUENT SEMESTER

1. Candidates shall register their name for the First Semester Examination after the admission in the U.G. course.
2. Candidates shall be permitted to proceed from the First Semester up to Final Semester irrespective of their failure in any of the Semester examinations subject to the condition that the candidates should register for all the arrear subjects of earlier semesters along with current (subsequent) semester subjects.
3. Candidates shall be eligible to go to subsequent semester, only if they earn sufficient attendance as prescribed thereof by the University from time to time.

STUDENT MENTOR

To help the students in planning their course of study and for general advice on the academic programme, the Head of the Department will attach a certain number of students to a member of the faculty who shall function as student Mentor for those students throughout their period of study. Such student Mentor shall advise the students, given preliminary approval for the courses to be taken by the students during each semester and obtain the final approval of the Head of the Department.

CLASS COMMITTEE

The composition of the class committees will be as follows.

❖ Course coordinators of the courses, if any, who shall be appointed by the Head of the Department and the staff members teaching the course.
❖ Teaching staff of other individual courses.
❖ One professor, preferably not teaching the concerned class, appointed by the Head of the Department.
❖ The Head of the Department may opt to be a member or the Chairman.
❖ All student of the class, and the Head of the Department (if not already a member) or any staff member nominated by the Head of the Department may opt to be special invitees.
❖ The class committee shall meet three times during the semester.
❖ The first meeting will be held within a week after the completion of the first assessment to review the performance and for follow-up action.
❖ The second meeting will be held within a week after the completion of the second assessment to review the performance and for follow-up action.

❖ The third meeting will be held after all the assessments are completed for all the courses, and at least one week before the commencement of the examinations. During this meeting the assessment on a maximum of 40 marks will be finalized for every student and tabulated and submitted to the head of the department.

WITHDRAWAL FROM A COURSE

A student can withdraw from a course at any time with the approval of the Dean and the recommendation of the Head of the Department.

DISCIPLINE

Every student is required to observe disciplined and decorous behavior both inside and outside the college. They do not indulge in any activity which will tend to bring down the prestige of the University. Boys should wear decent dresses. No casual wear like T – shirts or Jeans pant is permitted. Girls shall wear decent dresses like Chudidhar with Dupatta or Saree.

REVISION OF REGULATION AND CURRICULUM

The university may revise, amend or change the Regulations, Scheme of Examination and Syllabus as found necessary.

AUTHORITY OF BOARD OF STUDIES

The Board of Studies has the full authority to change the syllabus any time according to IT trend and industry needs.

SUBSTITUTE ASSESSMENT

A student who has missed one or more of assessment tests of a course other than the examinations for genuine reasons as accepted by the Head of the Department may take a substitute assessment for any one of the missed assessment. A student who wishes to have a substitute assessment for missed assessment must apply to the Head of the Department within two week from the date of the missed assessment.

EXAMINATIONS

1. The end semester examinations will ordinarily be conducted during November to December in the odd semesters and during April to May in the even semesters. For all the theory courses, question papers will be set by external examiners and valued by external and/or internal examiners.

2. All practical examinations including software development lab will be conducted by Internal & External examiners appointed by the University

PASSING AND DECLARATION OF EXAMINATION RESULTS:

PASSING MINIMUM

1. A candidate shall be declared to have passed in each paper / practical if he / she secures not less than 40% of marks (the continuous internal assessment (CIA) and the University examinations (External) put together), provided a minimum of 35% of marks secured in the University examination.

   For Theory cum Practical courses if he / she secures not less than 40% of marks (the continuous internal assessment (CIA) and the University examinations (External) put together), provided a minimum of 35% of marks secured in the University theory examination and a minimum of 35% of marks secured in the university practical examination.

2. If a candidate fails to secure a pass in a particular course, it is mandatory that he/she shall register and reappear for the examination in that course during the next semester. He / She should continue to register and reappear for the examination till he/she secures a pass. However, the internal assessment marks obtained by the candidate in the first attempt shall be retained and considered valid for all subsequent attempts.

3. Assessments of all the courses on absolute marks will be considered and passed by the Results – Passing- Board in accordance with the rules of the University. Thereafter, the Controller of Examinations shall convert the marks of each course to the corresponding letter grade as stated below. In addition, the grade point average and the cumulative grade point average calculated. Based on these, the grade cards will be prepared.

Marks	Letter Grade	Grade Point
90-100	S	10
80-89	A	9
70-79	B	8
60-69	C	7
50-59	D	6
40-49	E	5
<40	F	0
	Ab (Absent)	0

4. A Student who obtains less than 40 marks out of 100 in the examination (Put Together Internal and External) will be awarded the "**F**" grade and absent for the examination will be awarded the "**Ab**" grade. A Student who earns a grade of "**S**", "**A**", "**B**", "**C**", "**D**", or "**E**" in a course is declared to have successfully completed that course and earned the respective credits for that course. Such a course cannot be repeated by the student.

5. A Student who obtains a letter grade "**F**" or "**Ab**" in a course is to reappear for the examinations in that course.

6. The following grade points are associated with each letter grade for calculating the grade point average and cumulative grade point average.

   "**S**" – 10;   "**C**" – 07;   "**F**" – 0;
   "**A**" – 09;   "**D**" – 06;   "**Ab**" - 0;
   "**B**" – 08;   "**E**" – 05;

7. A Student can apply for revaluation of one or more of her/his examination answer papers within a week from the date of display of the result on payment of the prescribed fee. The application must be made to the Controller of Examinations with the recommendation of the Head of the Department.

8. After the results are declared, grade cards will be issued to the student. The grade cards will contain the list of courses registered during the year/ semester, the grades scored and the grade point average (GPA) for the year/ semester.

9. GPA is the sum of the products of the number of credits of a course with the grade point scored in that course, taken over all the course for the year/semester, divided by the sum of the number of credits for all courses taken in that year/semester. CGPA is similarly calculated by considering all the courses taken from the time of admission.

10. After successful completion of the programme, the degree will be awarded with the following classification based on CGPA.

   a) **First class with Distinction** will be awarded, if the student passed all the courses in the first attempt and obtained a minimum CGPA of 8.25.

   b) **First class** will be awarded, if the student earned a minimum CGPA of 6.5 within five years for **Bachelor in Computer Applications with Honours : BCA(HONOURS) / Bachelor in Computer Applications Honours with Research: BCA(HONOURS with RESEARCH)**, four years for **Bachelor in Computer Applications : BCA**, three years for **Diploma** and two years for **Certificate course** from the time of admission.

   c) **Second Class** will be awarded, if the student completed the course beyond the above said period of the respective course.

      ❖ The total credits for **Bachelor in Computer Applications with Honours : BCA(HONOURS) / Bachelor in Computer Applications Honours with Research: BCA(HONOURS with RESEARCH)** course are 175.
      ❖ The total credits for **Bachelor in Computer Applications: BCA** course are 135.
      ❖ The total credits for **Under Graduate Diploma in Computer Applications** course are 92.
      ❖ The total credits for **Under Graduate Certificate in Computer Applications** are 46.

ELIGIBILITY FOR THE AWARD OF THE DEGREE

1. The candidate shall be declared to be eligible for the award of Degree of **Bachelor in Computer Applications with Honours : BCA(HONOURS) / Bachelor in Computer Applications Honours with Research: BCA(HONOURS with RESEARCH) ,** if He / She has successfully completed the course requirements and has passed all the prescribed examinations in all the eight semesters with a minimum of 170 credits within a maximum period of seven years reckoned from the commencement of the first semester to which the candidate was admitted.

2. The candidate shall be declared to be eligible for the award of Degree of **Bachelor in Computer Applications: BCA,** if He / She exits at the end of third year and has successfully completed the course requirements and has passed all the prescribed examinations in all the six semesters with a minimum of 130 credits within a maximum period of five years reckoned from the commencement of the first semester to which the candidate was admitted.

3. The candidate shall be declared to be eligible for the award of **Under Graduate Diploma in Compute Applications,** if He / She exits at the end of second year and has successfully completed the course requirements and has passed all the prescribed examinations in all the four semesters with a minimum of 86 credits within a maximum period of four years reckoned from the commencement of the first semester to which the candidate was admitted.

4. The candidate shall be declared to be eligible for the award of **Under Graduate Certificate in Compute Applications,** if He / She exits at the end of first year and has successfully completed the course requirements and has passed all the prescribed examinations in all the two semesters with a minimum of 46 credits within a maximum period of twoyears reckoned from the commencement of the first semester to which the candidate was admitted.

PATTERN OF QUESTION PAPER (THEORY):

Time   :   3hours   **Max Marks :**   100

A typical examination paper is divided into three sections:

1. **Section A (Short Answer Questions):**   **(10 x 2 = 20 marks)**
   ❖ Contains 10 questions.
   ❖ Two questions from each unit
   ❖ Each question carries 2 marks.
   ❖ Answers should be concise, typically under 50 words.
   ❖ Q. No. 1 to 10

2. **Section B (Medium Answer Questions):**   **(5 x 7 = 35 marks)**
   ❖ Comprises 5 questions out of 8 questions)
   ❖ At least One question from each Unit
   ❖ Remaining three questions from Unit III, Unit IV and Unit V (One from each)
   ❖ Each question carries 7 marks.
   ❖ Answers should be around 200 words.
   ❖ Q. No.11 to 18

3. **Section C (Long Answer Questions):**   **(3 x 15 = 45 marks)**
    - ❖ Includes 3 questions out of 5 questions
    - ❖ At least one and not more than two question from each unit
    - ❖ Each question carries 15 marks.
    - ❖ Answers should be detailed, approximately 500 words.
    - ❖ Q. No.19 to 23

SECTION – A	-	20 MARKS	-	20 %
SECTION – B	-	35 MARKS	-	35%
SECTION – C	-	45 MARKS	-	45%

Marks secured by the candidate will be converted to 60 to make the aggregate 100, while adding with Continuous Internal Assessment 40.

For Theory Cum Practical courses with 6 credits, Marks secured by the candidate will be converted to 40 to make the aggregate 100, while adding with Continuous Internal Assessment 40 and External Practical Examination 20.

For Theory Cum Practical courses with 5 credits, Marks secured by the candidate will be converted to 50 to make the aggregate 100, while adding with Continuous Internal Assessment 40 and External Practical Examination 10.

PATTERN OF QUESTION PAPER (PRACTICAL)

Time   **:**   3 Hours   **Max**   **:**   60 Marks.

One compulsory lab exercise (may contain sub divisions) should be solved within 3 hours. The External Examiner will set a question paper on the spot with the help of the question bank or list of exercise. The evaluation pattern as follows

Program and output   - 40 Marks
Record   - 10 Marks
Viva- Voce   - 10 Marks.

No more than threecandidates should get the same question in a batch.

GENERAL COURSE STRUCTURE
&
CREDIT DISTRIBUTION

SEMESTER WISE CREDITS

Course	Semester and Credits								
	I	II	III	IV	V	VI	VII	VIII	Total Credits
3 Years BCA Program	23	23	23	23	23	20	-	-	**135**
4 Years BCA (Honours) and BCA (Honours with Research)	23	23	23	23	23	20	20	20	**175**

SEMESTER WISE CREDIT DISTRIBUTION

Semester	Core Courses	Ability Enhancement Courses	Multi-Disciplinary Elective Course	Value added Courses	Skill Enhancement courses	Discipline Specific Elective	Total
I	9	6	1	1	6	-	**23**
II	8	6	2	1	6	-	**23**
III	9	4	-	1	6	3	**23**
IV	11	4	-	-	5	3	**23**
V	8	-	-	-	6	9	**23**
VI	6	2	-	-	6	6	**20**
BCA (Honours)							
VII	4	-	4	-	6	6	**20**
VIII	-	-	-	-	8	12	**20**
BCA (Honours with Research)							
VII	12	-	-	-	-	8	**15**
VIII	20	-	-	-	-	-	**15**

CATEGORY-WISE DISTRIBUTION

Description	Core Courses	Ability Enhancement Courses	Multi-Disciplinary Elective Course	Value added Courses	Skill Enhancement courses	Discipline Specific Elective	Total
BCA	51	22	3	3	35	21	**135**
BCA (Honours)	55	22	7	3	49	39	**175**
BCA (Honours with Research)	83	22	3	3	35	29	**175**

A. Definition of Credit:

    1 Hr. Lecture (L) per week 1 Credit
    1 Hr. Tutorial (T) per week 1 Credit
    1 Hr. Practical (P) per week 0.5 Credit
    2 Hours Practical (P) per week 1 Credit

B. Course code and definition:

L	-	Lecture
T	-	Tutorial
P	-	Practical
CC	-	Core Courses
AEC	-	Ability Enhancement Courses
MDE	-	Multi-Disciplinary Elective course
VAC	-	Value added Courses
SEC	-	Skill Enhancement courses
DSE	-	Discipline Specific Elective
OE	-	Open Elective

CURRICULUM AND CREDITS

Sem.	Course Code	Category	Paper	Hrs.	L	T	P	Total Credits	Max. Marks		
									Int.	Ext	Total
I	AEC101	Ability Enhancement Course	General English – I	3	2	1	0	3	40	60	100
	AEC102	Ability Enhancement Course	Additional Course – Tamil -I/ Hindi-I /Sanskrit-I	3	2	1	0	3	40	60	100
	CC101	Core Course	Mathematical Foundations for Computer Science	4	3	1	0	4	40	60	100
	CC102	Core Course	Computer Architecture	6	3	1	2	5	40	60	100
	SEC101	Skill Enhancement course	Problem Solving Techniques	7	3	1	3	6	40	60	100
	MDE101	Multi-Disciplinary Elective course	Indian Culture	1	1	0	0	1	100		100
	VAC101	Value added Course	Environmental Science and sustainability	1	1	0	0	1	100		100
Total				**25**	**15**	**5**	**5**	**23**			
II	AEC103	Ability Enhancement Course	General English - II	3	2	1	0	3	40	60	100
	AEC104	Ability Enhancement Course	Additional Course – Tamil -II/ Hindi-II /Sanskrit-II	3	2	1	0	3	40	60	100
	CC103	Core Course	Probability and Statistics	4	3	1	0	4	40	60	100
	CC104	Core Course	Data Structures and Algorithms	6	3	1	2	5	40	60	100
	SEC102	Skill Enhancement course	Object Oriented Programming in Java	7	3	1	3	6	40	60	100
	MDE102	Multi-Disciplinary Elective course	Introduction to Indian Knowledge System	1	1	0	0	1	100		100
	VAC102	Value added Course	Indian Constitution	1	1	0	0	1	100		100
Total				**25**	**15**	**5**	**5**	**23**			

S.No	Course Category	Total Credits	
		I Sem.	II Sem.
1	Core Course (CC)	9	9
2	Ability Enhancement Course (AEC)	6	6
3	Multi-Disciplinary Elective course (MDE)	1	1
4	Value added Course (VAC)	1	1
5	Skills Enhancement Course (SEC)	6	6
6	Discipline Specific Elective (DSE)	-	-
Overall Credits		**23**	**23**

		L	T	P	C
AEC101	**GENERAL ENGLISH – I** **(COMMUNICATIVE ENGLISH)**	2	1	0	3

(For Students admitted from 2025 onwards)

COURSE OBJECTIVES

- To differentiate and apply receptive and productive language skills in day-to-day communication.
- To use grammar elements like phrasal verbs and concord accurately in speech and writing.
- To enhance listening comprehension for academic and general purposes.
- To develop oral fluency through structured conversations and short descriptions.
- To write coherent paragraphs and official letters using appropriate format and cohesion.

COURSE OUTCOMES

- Apply receptive and productive communication strategies in routine contexts.
- Use appropriate grammar structures to construct accurate sentences.
- Understand and interpret spoken messages in academic and general situations.
- Demonstrate oral fluency through guided conversation and descriptive practice.
- Compose coherent paragraphs and official letters using appropriate vocabulary and format.

Unit I: Language Skills
Receptive (Listening & Reading), Productive (Speaking & Writing), Interpersonal, Intrapersonal
9 Hrs.

Unit II: Grammar and Usage
Phrasal Verbs, Concord, Spotting Errors (identifying grammatical errors), (Modifiers, qualifiers, quantifiers), Tenses
9 Hrs.

Unit III: Listening Skills
Types of listening, Listening strategies, Focused listening, Listening for Details, Lectures, Announcements
9 Hrs.

Unit IV: Speaking Skills
Conversation Starters, participating in a small talk, conversation (formal), group discussion, making presentation – describing a product, interpreting charts, branding a product.
9 Hrs.

Unit V: Technical Writing
Types of writing, Writing emails, minutes, proposals (plan of action), reports.
9 Hrs.

REFERENCE:
1. Carter, Ronald & McCarthy, Michael. *Cambridge Grammar of English*. Cambridge UP, 2006.

AEC102	LANGUAGE – I (TAMIL – I)	L	T	P	C
		2	1	0	3

(For Students admitted from 2025 onwards)

நோக்கம்:

- தமிழ் இலக்கிய, இலக்கண வரலாறு அறிமுகம் - தமிழ் இலக்கியப் போக்குகளையும், இலக்கணங்களையும் மாணவர் அறியுமாறு செய்து அவர்களின் படைப்பாற்றலைத் தூண்டுதல்
- அற இலக்கியம் - வாழ்வை மேம்படுத்தும் அற சிந்தனைகளை நீதி இலக்கியம் வழி ஒழுக்கங்களை கற்றுக் கொள்ளுதல்
- பக்தி இலக்கியம் – பக்தி இலக்கியங்கள் வழி சமயச் சான்றோர்களையும் பக்தி நெறிகளை உணர்த்து கொள்ளுதல்
- பக்தி இலக்கியம் – பக்தி இலக்கியங்கள் வழி சமயச் சான்றோர்களையும் பக்தி நெறிகளை உணர்த்து கொள்ளுதல்
- மொழிப் பயிற்சி - மொழியினைப் பிழையின்றி கற்றுக் கொள்ளுதல்

பாடத்திட்டங்கள்

அலகு-1 தமிழ் இலக்கிய, இலக்கண வரலாறு அறிமுகம்

1. **இலக்கணம்**
   அ. தொல்காப்பியம் இறையனார் களவியல் உரை நம்பியகப் பொருள், புறப்பொருள் வெண்பாமாலை, நன்னூல் தண்டியலங்காரம் யாப்பருங்கலக்காரிகை (அறிமுகம்)
   ஆ. மொழிப் பயிற்சி ஒற்றுப்பிழை தவிர்த்தல்
      - வல்லினம் மிகும் இடங்கள்-வல்லினம் மிகா இடங்கள்-ஈரொற்று வரும் இடங்கள்-ஒருஊர்வரும் இடங்கள்-அது, அஃது வரும் இடங்கள்-தான் தாம் வரும் இடங்கள்

   பயிற்சி வல்லினம் மிகும் இடங்கள், மிகா இடங்கள் தவறாக வரும் வகையில் ஒரு பத்தி கொடுத்து ஒற்றுப் பிழை திருத்தி எழுதச் செய்தல்

2. சங்க இலக்கியம் - எட்டுத்தொகை, பத்துப்பாட்டு

3. அற இலக்கியம் - பதினெண்கீழ்கணக்கு நூல்கள்

4. காப்பிய இலக்கியம் - ஐப்பெருங் காப்பியங்கள், ஐஞ்சிறு காப்பியங்கள் சமயக் காப்பியங்கள்

5. பக்தி இலக்கியமும் (பன்னிரு திருமுறைகள், நாலாயிர திவ்விய பிரபந்தம் - பகுத்தறிவு இலக்கியமும் (சித்தர் இலக்கியங்கள்)

அலகு-2 அற இலக்கியம்

1. திருக்குறள் - அறன் வலியுறுத்தல், தெரிந்து செயல்வகை அதிகாரம்
2. நாலடியார் பாடல்: 100, 139
3. ஆசாரக்கோவை - 1,4,10
4. கொன்றை வேந்தன் (1-20 பாடல்கள்) கதை எழுதுதல்
5. ஆத்திச்சூடி (பாரதியார்) (1-20 பாடல்கள்) கதை எழுதுதல்

அலகு -3 பக்தி இலக்கியம்

1. சமயங்கள் அறிமுகம்
2. காஞ்சி மகாபெரியவர் - தெய்வத்தின் குரல்
   - குலத்தெய்வ வழிபாடு
   - பச்சரிசி மாவில் கோலமிடுதலின் சிறப்பு
3. சைவம்   :
   - திருநாவுக்கரசர் (சொற்றுணை வேதியன் சோதி வானவன்)
   - திருஞானசம்பந்தர் - (கோளாறு பதிகம் - வேயுறு தோளிபங்கன்)
   - சுந்தரர் - பித்தாபிறை சூடி பாடல்
   - மாணிக்கவாசகர் (அம்மையே! அப்பா! ஒப்பு இலா மணியே!)
4. வைணவம்:
   - பொய்கையாழ்வார் (வையத் தகளியா வார்கடலே)
   - பூதத்தாழ்வார் (அன்பே தகளியா)
   - பேயாழ்வார் (திருக்கண்டேன் பொன்மேனி கண்டேன்)

அலகு - 4   உலகளாவிய மனித மதிப்புகள்

1. இலக்கியங்கள் கூறும் மனித மதிப்புகள்
2. மனித உறவுகள் அறிமுகம்
3. தொல்காப்பியம் காட்டும் மனித உறவுகள்
4. சங்க இலக்கியங்களில் மனித உறவுகள்
5. பதினெண்கீழ்க்கணக்கு நூல்களில் மனித உறவுகள்
6. இக்கால இலக்கியங்களில் மனித உறவுகள்

அலகு 5 மொழிப் பயிற்சி

1. சொல் வேறுபாடு /பிழை தவிர்த்தல்
   - வாசிப்பது-வாசிப்பவர்
   - சுவர்- சுவரில்
   - வயிறு வயிற்றில்
   - கோயில் கோவில்
   - கறுப்பு கருப்பு
   - இயக்குநர் - இயக்குனர்
   - சில்லறை சில்லரை
   - மனம் மனசு மனது
   - அருகில்-அருகாமையில்

- அக்கரை அக்கறை
- மங்கலம் மங்களம்.

2. பயிற்சி

அ) கொடுக்கப்பட்டுள்ள பக்திகளைப் படித்து மூன்றில் ஒரு பங்காக சுருக்கி எழுதவும்.

ஆ) லகர, எகர, ழகர பிழைகளை நீக்கி எழுதச் செய்தல்.

இ) ணகர, னகர, நகர பிழைகளை நீக்கி எழுதச் செய்தல்.

3. தொடர் பிழை நீக்கி எழுதுதல்

பாடநூல் :

1. ஸ்ரீ சந்திரசேகரேந்திர சரஸ்வதி விஸ்வ மகா வித்யாலயா - பொதுத்தமிழ் -முதல் பருவம்

பார்வை நூல்

1. மு.வரதராசன், தமிழ் இ லக்கிய வரலாறு, சாகித்ய அகாடமி, புதுடெல்லி.
2. மது.ச.விமலானந்தன், தமிழ் இலக்கிய வரலாறு, மீனாட்சி புத்தக நிலையம், மதுரை.
3. தமிழண்ணல், புதிய நோக்கில் தமிழ் இலக்கிய வரலாறு, மீனாட்சி புத்தக நிலையம், மதுரை.
4. தெய்வத்தின் குரல் - காஞ்சி மகாபெரியவர்
5. தமிழ் இலக்கிய வரலாறு -முனைவர்.சிற்பி பாலசுப்ரமணியம், முனைவர்.சொ.சேதுபதி
6. புதிய தமிழ் இலக்கிய வரலாறு- முனைவர்.சிற்பி பாலசுப்ரமணியம்,நீல.பத்மநாபன்
7. தமிழ் இலக்கிய வரலாறு டாக்டர்.அ.கா.பெருமாள்
8. தமிழ் இலக்கிய வரலாறு -முனைவர். ப.ச.ஏசுதாசன்
9. வகைமை நோக்கில் தமிழ் இலக்கிய வரலாறு-பாக்கியமேரி
10. தமிழ் இலக்கணம் - இரா. நெடுஞ்செழியன்

WEB REFERENCES:

1. https://www.chennailibrary.com
2. https://www.sirukathaigal.com
3. https://www.tamilvirtualuniversity.org
4. https://www.noolulagam.com
5. https://www.katuraitamilblogspot.com

AEC102	LANGUAGE – I (HINDI – I)	L	T	P	C
		2	1	0	3

(For Students admitted from 2025 onwards)

UNIT – I   REFLECTION ON HINDI LANGUAGE:
 a) Importance of Hindi learning & the place of Hindi as National language.
 b) Cultural contexts of Hindi : an introduction &Various functional forms of Hindi
 c) Hindi Phonetics – Vowels and Consonants
 d) Barahkhadi & Dwitvakshar and Samyuktakshar
 e) Often wrong spelt words and correction

UNIT – II   HINDI VOCABULORY: made easy
 a) Greetings and Introductory words
 b) Basic words for daily usage – spoken purpose in particular.
 c) Introduction to parts of speech in Hindi
 d) Adjective noun agreements, Oblique and expressions of possession (APNA)

UNIT – III   HINDI GRAMMAR: for Syntax Understanding
 a) Gender and Number
 b) Infinitive Verbs : commands and requests
 c) Partsof speech - sentence making
 d) Verb usage variations
 e) Karakchihn – Introduction

UNIT – IV   WRITING AND READING SKILLS OF HINDI
 a) Application of case-endings in sentences
 b) Sentence formation (Gender specified)
 c) Sentence formation (Number specified)
 d) Changing the sentence according to the instructions (using '*Be* form')
 e) Hindi – reading and writing exercises (Short stories, paragraphs etc.)

UNIT – V   THE FOUNDATION FOR HINDI SPEAKING
 a) Introduction of Tenses
 b) Present Tense and it's variations
 c) Future Tense and it's variations
 d) Transcription of Paragraph
 e) Overall Review of What We Learned so Far

TEXT BOOKS:
 1. HINDI SOURABH, Prepared by Department of Hindi, SCSVMV

 REFERENCES:
 1. "Come Let us Learn Hindi" : Dr. Alok Pandey, Published by Milind Prakashan, Hyderabad 2013
 2. Pankhudiyan 1&2: Dr. Madhu Dhawan, Lekhan Prakashan, New Delhi 2011
 3. SABARI HINDI BODHINI, Published by Shabari Prakasan, Selam, 2012

AEC102	LANGUAGE – I (SANSKRIT – I)	L	T	P	C
		2	1	0	3

(For Students admitted from 2025 onwards)

UNIT – I भागः - क

1. Vowels & Consonants
2. Words begin with vowels
3. Words begin with कtoण
4. Words begin with तtoह

UNIT - II भागः - ख

1. Words begin with क to झ with the combination of Vowels.
2. Words begin with टto न with the combination of Vowels.
3. Words begin with प to हwith the combination of Vowels.
4. Combined Letters.
5. Simple Sentences.

UNIT - III भागः - ग

1. Lessons from text book 1-6.

UNIT – IV भागः–घ

1. Lessons from text book 7-12.

UNIT - V भागः - ङ

1.शब्दरूपाणि

1. देवः	5. गो	9. धेनुः	13. युष्मद्
2. मुनिः	6. छात्रा	10. मातृ	14. तद्
3. गुरुः	7. मतिः	11. वनम्	15. एतद्
4. पितृ	8. गौरी	12. अस्मद्	16. इदम्
			17. किम

2. धातुरूपाणि(Present tense, Past tense and Future tense) परस्मैपद-आत्मनेपदधातवः

1. भूधातुः
2. पठ्धातुः
3. गम्धातुः

TEXT BOOKS:

1. Samskrita Siksha - Part I & II, Published by Department of Sanskrit and Indian culture, SCSVMV University (Deemed University), Enathur, Kanchipuram.

25

CC101	MATHEMATICAL FOUNDATIONS FOR COMPUTER SCIENCE	L	T	P	C
		3	1	0	4

Course objectives:
- To introduce foundational concepts of discrete mathematics.
- To explore logical reasoning and proof techniques.
- To study algebraic structures and graph theory for computer applications.

Course Outcome:
- Apply set theory and logic to computer science problems.
- Develop mathematical proofs using induction and logical arguments.
- Analyze recurrence relations and use them in algorithms.
- Understand algebraic structures like groups and subgroups.
- Apply graph theory concepts to model networks and data structures.
-

Unit I: Set theory

Introduction, Sets, Notation and description of sets, subsets, Venn – Euler diagram, Operation on sets, Properties of set operations (only statements), Laws of Algebra of sets, The principle of Duality, Addition Principle.

12 Hrs

Unit II: Propositional Logic

Symbolic Logic: Logical Operations, Conditional and Biconditional operators, Converse, Inverse, and contrapositive, Tautology and Contradiction, Algebra of propositions, Arguments.

12 Hrs

Unit III: **Mathematical Induction and Recurrence Relations**

Mathematical induction: Techniques of Proof, Mathematical Induction – Recurrence Relations: Recurrence - An Introduction, Recurrence Relations, Solution of finite order homogenous (Linear) relations.

12 Hrs

Unit IV: **Algebraic System**

Introduction to Algebraic system: Binary operations, Group, Sub-Groups: Properties of Sub-Groups, Cyclic Groups, Order of a group, Lagrange's theorem, Permutation group (simple problems), Normal Sub-group.

12 Hrs

Unit V: Graph Theory

Basic Concepts, Subgraph, Some special classes of Graph, Path, Cycle, and Connectedness, Matrix Representation of the Graph; Trees: Definitions, Spanning Trees, Minimal Spanning trees: Kruskal's Algorithm, Prim's Algorithm; Shortest Path Problem: Dijkstra's Algorithm.

<div align="right">12 Hrs</div>

<div align="right">Total Periods: 60</div>

Text Books:

1. Kenneth H.Rosen, Discrete Mathematics and its Applications, 6th Edition, Tata McGraw Hill, New Delhi (2007)

2. P.R. Vittal, Mathematical Foundations, Margham Publications, Chennai
    Unit   II: Chapter   1.
    Unit IV: Chapter 38, Chapter 39 - Pg. No. (39.51-39.55)

3. M.K. Venkataraman, N.Sridharan, N. Chandarasekaran, Discrete Mathematics, The National   Publishing   Company   ,   Chennai.
    Unit I: Chapter I
    Unit III: Chapter IV, Chapter V – 1, 3, 4.
    Unit V: Chapter XI

References:

1. J.P.Tremblay R. Manohar, Discrete Mathematics Structures with Applications to Computer Science, McGraw Hill International Edition.

2. Srimanta Pal, Subodh C. Bhunia, Engineering Mathematics, Oxford University Press Free online resources available.

CC102	**COMPUTER ARCHITECTURE**	**L**	**T**	**P**	**C**
		3	**1**	**2**	**5**

COURSE OBJECTIVES

- To Understand the basics of Digital Electronics and Binary Number System
- To Learn the implementation of Combinational Circuit and Sequential Circuit
- To Understand the Organization of basic computers.
- To Understand the concept of Parallel Processing.
- To understand the concept of memory organization.

COURSE OUTCOMES

- Obtain the knowledge of the basics of Digital Electronics and Binary Number System
- Acquire the Knowledge about Combinational Circuit and Sequential Circuit
- Obtain the Knowledge about Organization of basic computers.
- Obtain the Knowledge about Parallel Processing.
- Acquire the Knowledge about memory organization.

UNIT-I

Digital Principles: Definition for Digital signals, Digital logic, Digital computers, Architecture, Boolean Laws and Theorems, K-Map.

Number Systems: Decimal, Binary, Octal, Hexadecimal, Number System Conversions, Binary Arithmetic

12 Hrs.

UNIT-II

Combinational Circuits: Half Adder and Full Adder, Subtractor, Decoders, Encoder, Multiplexer, Demultiplexer.

Register: 4 bit register with parallel load, Shift Registers- Bidirectional shift register with parallel load Binary Counters.

12 Hrs.

UNIT-III

Basic Computer Organization and Design: Instruction Codes, Computer Registers, Computer Instructions, Timing and Control, Instruction Cycle, Memory-Reference Instructions.

Central Processing Unit: Introduction, General Register Organization, Stack Organization, Instruction Formats, Addressing Modes, Data Transfer and Manipulation, Program Control, Reduced Instruction Set Computer (RISC).

12 Hrs.

UNIT-IV

Input-Output Organization: Peripheral Devices, Input-Output Interface, Modes of Transfer, Priority Interrupt, Direct memory Access.

12 Hrs.

UNIT-V

Memory Organization: Memory Hierarchy, Main Memory, Auxiliary memory, Associate Memory, Cache Memory, Virtual Memory.

<div align="right">12 Hrs.</div>

<div align="right">**Total Periods: 60**</div>

LIST OF EXPERIMENTS

1. Verify logic behavior of AND, OR, NAND, NOR, EX-OR, EX-NOR, Invert and Buffer gates.
2. To study and verify NAND as a Universal Gate
3. To verify De- Morgan's theorem for 2 variables
4. Design and test of an S-R flip-flop using NAND/NOR gate.
5. Convert BCD to Excess-3 code using NAND gate
6. To Convert Binary to Grey Code
7. Verification of Truth Tables of J-K Flip-Flop using NAND/NOR gate
8. Realize Decoder and Encoder circuit using Basic Gates.
9. Design and implement the 4:1 MUX using gates.
10. Implementation of 4-Bit Parallel Adder Using 7483 IC.

TEXT BOOKS

1. D. P. Leach, A. P. Malvino, and G. Saha, "Digital Principles & Applications", India: Tata McGraw Hill Education Private Limited, 2023 ed.,2023
2. M. M. Mano, Computer System Architecture, 6th ed. Pearson/PHI, 2023.

REFERENCE BOOKS

1. William Stallings- "Computer Organization and Architecture", Pearson/PHI, 10th Edition, 2022.
2. Andrew S. Tanenbaum- "Structured Computer Organization", PHI /Pearson 6th Edition, 2016
3. M. V. Subramanyam, "Switching Theory and Logic Design", Laxmi Publications (P) Ltd., 2023 ed., 2023.
4. I. Singh, "Computer Organization Architecture", Khanna Book Publishing, 2023 ed., 2023.

E- REFERENCES

1. https://www.geeksforgeeks.org/computer-organization-and-architecture-tutorials/
2. https://www.tutorialspoint.com/computer_logical_organization/index.htm
3. https://www.gatevidyalay.com/computer-organization-architecture-notes/
4. https://www.computer-pdf.com/exercises/computer-architecture

SEC101	PROBLEM SOLVING TECHNIQUES	L	T	P	C
		3	1	3	6

COURSE OBJECTIVES
- To learn the fundamentals of PST and methodologies which are essential for building good programs
- To help the students to learn programming concepts using C Language
- Design the solution from specification of a problem and write pseudo code of the algorithm using basic building blocks or structured programming constructs
- To demonstrate a thorough understanding of modular programming by designing programs which require the use of programmer-defined functions
- To impart the knowledge about pointers which is the backbone of effective memory handling and demonstrate adeptness of file access in developing solutions to problems

COURSE OUTCOMES
- Learn the fundamental programming concepts and methodologies, which are essential for building good programs.
- Able to translate an algorithm into program
- Understand the modular programming by designing programs, which require the use of control structures, arrays, defined functions and learn about storage classes
- Acquire the knowledge about pointers
- Obtain the knowledge of writing and testing programs

Unit I: Problems and Problem Instances
Types of Computational Problems- Classification of Problem- Analysis of Problems- Solution Approaches- Algorithm Development- Analysis of Algorithm - Role of Data Structures in Problem Solving- Problem Solving Steps-Modular Programming.

12 Hrs.

UNIT –II: C fundamentals:
Character set - Identifier and keywords - data types - constants- Variables - Declarations - Statements - Operators – Expressions – Built in functions – Input and Output Operations.

12 Hrs.

UNIT – III: Control Structure Statements and Arrays
Flow of control - if, if else, While, do-while, for loop, Nested control structures - Switch, break and continue, go to statement – Arrays.

12 Hrs.

UNIT – IV: Functions & Structure:

Definition - Prototypes – Passing arguments – Recursion- Storage Classes – Structure-Union.

12 Hrs.

UNIT – V: Pointers and File:

Declarations - Structures and Pointers - Passing pointers to Functions - Pointer and Arrays -Arrays of Pointers - Files: Creating, Processing, Opening and Closing a data file- Debugging.

12 Hrs.

Total Periods: 60

LIST OF EXPERIMENTS

1. Converting degrees Celsius to Fahrenheit and vice versa?
2. Write a Program to generate a Fibonacci Series
3. Given a positive integer value n (>= 0) display number, square and cube of numbers from 1 to n in a tabular format?
4. Given an input positive integer number, display odd numbers from in the range [1,n]?
5. Compute character grade from the marks ($0 \le$ marks ≤ 100) of a subject. Grading Scheme: 80-100: A, 60 - 79: B, 50 - 59: C, 40-49: D, 0-39: F? Solve this using switch case
6. Display following patterns of n rows (n > 0), For the below examples n = 5?

$ \
$$ \
$$$ \
$$$$ \
$$$$$

7. Check if a given positive integer number is a palindrome or not?
8. Implement your own string length and string reversal functions?
9. Write a Program to sort an array.
10. Write a Program to find the factorial of an integer using recursion.
11. Write a Program to swap two values using function pointer.
12. Write a Program to store student's information using Structure.
13. Write a Program to perform read and write operation on a file.

TEXT BOOKS

1. Venkatesh, Nagaraju Y, "Practical C Programming for Problem Solving", Khanna Book Publishing Company, 2024.
2. R.S.Salaria, Programming for Problem Solving (with Lab Manual), Khanna Book Publishing Company, 1st Edition, 2024.
3. Harvey Deitel and Paul Deitel, "C How to Program", Pearson India, 9th Edition, 2015.
4. R G Dromey, "How to Solve It by Computer", Pearson India, 2007.

REFERENCE BOOKS

1. Brian W. Kernighan and Dennis Ritchie, "The C Programming Language", Pearson, 2nd Edition, 2015.

E- REFERENCES

1. https://practice.geeksforgeeks.org/explore/?category[]=C-Programming-Language
2. https://www.codechef.com/practice
3. https://leetcode.com/problemset/all/
4. https://exercism.org/tracks/c

		L	T	P	C
MDE101	**INDIAN CULTURE**	1	0	0	1

COURSE OBJECTIVES

In an Endeavour to understand the Ancient Indian systems and Culture in all the parameters, this paper aims to create awareness about the importance of early Indian systems and traditions. The rich literary heritage of India and various scientific fields in which Indians have made their contributions included in this paper to draw linkages between modern science and rich Vedic scientific heritage.

Unit I

Introduction to Vedic Cultures; significance & how it is different from the other cultures. whywe have to follow? Important features.

Unit II

Literary Heritage of India – significance of Indian Literature; Chronology of Indian literature; Literature in Sanskrit and other Indian languages;

Unit III

Early Indian Education – significance & advantages. Gurukulas and Guru-sishya parampara. Learning methods. Evolution of script and languages; important early scripts and writing materials; important early educational centers (ghattikas, universities) & their unique features. Important personalities and their Contribution – Devarishies, Maharishies, Rishies, Seers and contribution of their institutions to protect the cultural heritage.

Unit IV

Scientific thoughts of Early Indian Sages;

Unit V

Importance and significance of Upavedas – Ayurveda, Dhanurveda, Gandhravaveda, stapatya &Arthasastra.

REFERENCE BOOKS

1 Joshi,K. 1992(rp). The Veda and Indian Culture. Rastriya Veda Vidya Pratishthana. NewDelhi.
2 Kangle, R.P. 1992 (rp). The Kautilya Arthasastra. Delhi.
3 Kulkarni, R.P. 1983. Geometry according to Sulba Sutra. Samsodhana Mandal. Pune.
4 Majumdar, R.C. 1994 (rp). Ancient India. Motilal Banarsidas Publishers. Delhi.
5 Patel, I.S. (ed). 1984. Science and the Vedas. Bombay.
6 Majumdar, R.C. 1996 (ed) (rp). The History and Culture of the Indian People. Vol I-IV.Bharatriya Vidya Bhavan. Mumbai
7 Radhakrishna, S. 1993(rp). Indian Philosophy. Vol I & II. Oxford University Press. Delhi.
8 Sri Chandrasekarendra Sarasvati Swamihi. 1991. The Guru Tradition. Bharatiya VidyaBhavan. Bombay.
9 Sri Jayendra Saraswatiji Maharaj. 1951. The Vedas and Vedangas. Prakashan Kendra.Lucknow. Winternize, M. 1996(rp). History of Indian Literature Delhi.

AEC103	GENERAL ENGLISH – II (FUNCTIONAL ENGLISH)	L	T	P	C
		2	1	0	3

(For Students admitted from 2025 onwards)

COURSE OBJECTIVES
- To initiate and sustain dialogues using requests, permissions, and other social expressions.
- To apply skimming and scanning techniques for various academic and non-academic texts.
- To plan and deliver oral presentations with effective use of visual aids.
- To use English in real-life social contexts such as inquiries and giving directions.
- To integrate LSRW skills through interactive classroom activities.

COURSE OUTCOMES
- Engage in structured social conversations using suitable expressions.
- Apply effective reading strategies to locate and understand key information.
- Plan and present oral content with visual and verbal clarity.
- Interact fluently in real-life communication scenarios like giving directions or making inquiries.
- Participate confidently in integrative LSRW-based activities.

Unit I
Conversation Skills (oral & written): Placing a request, asking permissions, registering complaints, describing a process, agreeing & disagreeing.

9 Hrs.

Unit II
Reading Skills
Types of reading: Intensive & Extensive,
Strategies of reading: skimming, scanning, SQ3R
Comprehending short/long technical texts

9 Hrs.

Unit III
Presentation Skills: identifying a topic, planning, preparing a presentation, understand the audience.
Type of Presentation: memorized, extempore, impromptu, manuscript
Mechanics of Presentation: Body language, Voice, Engaging Audience, using visual aids

9 Hrs.

Unit IV
Effective Communication in Social Contexts: making enquiries, asking & giving directions, instructing & recommending

9 Hrs.

Unit V
Language activities (to be included) role play, mock interview, JAM, Story Building

9 Hrs.

Reference:
1. Kumar, Sanjay. *Communication Skills*. Oxford University Press.

AEC104	LANGUAGE – II (TAMIL – II)	L	T	P	C
		3	1	0	3

(For Students admitted from 2025 onwards)

நோக்கம்:

- புதுக்கவிதை வரலாற்றினை அறிந்து கொள்வர் பாரதியார் காலம் தொட்டு தற்கால. புதுக்கவிதைகள் வரை கவிதை இலக்கியம் அறிமுகப்படுத்தப்படுவதால் படைப்பாற்றல் திறன் பெறுதல்.

- தொல் பழங்கால வரலாறும் சங்ககால வரலாறும் தமிழக வரலாற்றை அறிந்துகொள்வர்..

- கல்வியும் வாணிபமும் தமிழரின் வாழ்வியல் தொன்மையை அறிவர்

- தமிழரின் பண்பாட்டுக் கூறுகள், ஐரோப்பியர் கால வரலாறு தமிழரின் பண்பாட்டுக் கூறுகள்

- இலக்கணமும் மொழித்திறனும் மொழியை பிழையின்றிப் பேச எழுத கற்கத் தேவையான தமிழ் இலக்கணத்தின் இன்றியமையாமையை உணர்ந்து கொள்ளுதல்

பாடத்திட்டங்கள்

அலகு 1 : இக்கால இலக்கியம்

கவிதை :
1. பாரதியார் - பாரதம்
2. பாரதிதாசன் - ஆலமர கவிதைகள் (குரங்கின் அச்சம்)
3. நாமக்கல் கவிஞர் - கத்தியின்றி.
4. மீரா - கனவு கற்பனை

சிறுகதை :
1. வ.வே.சு ஐயர் - குளத்தங்கக்கரை அரசமரம்.
2. புதுமைப்பித்தன் - எப்போது விடியும்.
3. அம்பை - *அம்மா* ஒரு கொலை செய்தாள்

அலகு 2: தொல் பழங்கால வரலாறும் சங்ககால வரலாறும்
1. தொல் தமிழர்
2. பழைய கற்காலம்
3. புதிய கற்காலம்
4. உலோகக் காலம்
5. அகழ்வாராய்ச்சியில் தமிழும் தமிழரும் (கீழடி வரை)

அலகு 3: கல்வியும் வாணிபமும்
1. திணை வாழ்வியல் (களவு வாழ்க்கை கற்பு வாழ்க்கை உணவு வாணிகம் விளையாட்டுகள்)
2. கல்வியும் கலைகளும்
3. தமிழ் வளர்த்த சங்கம்
4. சங்ககால ஆட்சி முறை
5. அயல்நாட்டுத் தொடர்புகள்

அலகு 4 ஆட்சியர் வரலாறு
1. மூவேந்தர் வரலாறு
2. பல்லவர் வரலாறு
3. நாயக்கர் ஆட்சி
4. முகமதியர் ஆட்சி
5. மராட்டியர் ஆட்சி
6. போர்த்துக்கீசியர்
7. டச்சுக்காரர்கள்
8. பிரெஞ்சுக்காரர்கள்
9. ஆங்கிலேயர்கள்
10. பாளையக்காரர்கள்

அலகு 5 . இலக்கணம்
1. எழுத்தின் விளக்கம்
2. எழுத்தின் வகைகள்
3. வினா எழுத்துக்கள்
4. சுட்டெழுத்துக்கள்
5. சொல் இலக்கணம்
6. வகைகள்
7. பெயர்ச்சொல்
8. வினைச்சொல்
9. இடைச்சொல்
10. உரிச்சொல்

பாடநூல் :
1. ஸ்ரீ சந்திரசேகரேந்திர சரஸ்வதி விஸ்வ மகா வித்யாலயா - பொதுத்தமிழ் - இரண்டாம் பருவம்

பார்வை நூல் ;

1. தமிழக வரலாறும் பண்பாடும் - கே.கே.பிள்ளை, உலகத் தமிழாராய்ச்சி நிறுவனம், சென்னை,
2. தமிழர் நாகரிகமும் பண்பாடும் - அ. தட்சிணாமூர்த்தி, யாழ் வெளியீடு, சென்னை,.
3. தமிழக வரலாறும் பண்பாடும் - வே.தி. செல்லம், மணிவாசகர் பதிப்பகம், சென்னை,
4. ஆதிச்சநல்லூர் முதல் கீழடி வரை நுவேதா லூயிஸ், கிழக்குப் பதிப்பகம்,
5. தமிழும் பிற பண்பாடும் - தெ.பொ. மீனாட்சி சுந்தரனார், நியூ செஞ்சுரி புக் ஹவுஸ், சென்னை
6. தமிழர் வரலாறும் பண்பாடும் நீலகண்ட சாஸ்திரி, ஸ்ரீசெண்பகா பதிப்பகம், சென்னை
7. தமிழர் வரலாறும் தமிழர் பண்பாடும் மா.இராசமாணிக்கனார்
8. தமிழர் நாகரிக வரலாறு க.த.திருநாவுக்கரசு, தொல்காப்பியர் நூலகம், சென்னை.

WEB REFERENCES:

1. https://www.chennailibrary.com
2. https://www.sirukathaigal.com
3. https://www.tamilvirtualuniversity.org
4. https://www.noolulagam.com
5. https://www.katuraitamilblogspot.com

AE104	LANGUAGE – II (HINDI – II)	L	T	P	C
		2	1	0	3

(For Students admitted from 2025 onwards)

UNIT –I   INTRODUCTION TO HINDI GRAMMAR:
   a) Identification of different Tenses
   b) Differences of *Sakarmak* & *Akarmak* sentences
   c) Correction of Sentences pertaining to different tenses
   d) Past Tense with special context to *Ne Pratyay*
   e) Future Tense with examples

UNIT – II   SPEAKING*Right*HINDI:
   a) Conversations at different places and contexts
   b) Topics related to different tenses and making sentences
   c) Usage of Sentences according to the direction
   d) Usage of complex sentences and different styles of expression

UNIT – III   LANGUAGE WRITING IN HINDI:
   a) Paragraph setting
   b) Comprehensive paragraph
   c) Paragraph writing
   d) Simple translation of sentences

UNIT – IV   HINDI LITERATURE – INTRODUCTION TO OLD POETRY:
   a) Tulasi Das ke Dohe – Kanthasth evam Vyakhya bhag
   b) Rahim ke Dohe- Kanthasth evam Vyakhya bhag
   c) Tatparya and Kanthasthikaran
   d) Summary and annotation part

UNIT – V   HINDI LITERATURE-INTRODUCTION TO POETRY andPROSE:
   a) Bharat ki Ekataa : Ramdhari Singh Dinkar
   b) "Hum Honge Kamiyab" by Girija Kumar Mathur

TEXT BOOK:
   1. HINDI SOURABH, (Prepared by Department of Hindi, SCSVMV)

REFERENCES:
   1. "Come Let us Learn Hindi" : Dr. Alok Pandey, Published by Milind Prakashan, Hyderabad 2013
   2. Pankhudiyan 1&2 : Dr. Madhu Dhawan, Lekhan Prakashan, New Delhi 2011
   3. Sabari Hindi Bodhini – Shabari Prakashan, Selam, Tamil Nadu, 2012.

AE104	**LANGUAGE – II**	**L**	**T**	**P**	**C**
	(SANSKRIT – II)	2	1	0	3

(For Students admitted from 2025 onwards)

UNIT - I भागः - क

Poetry: सुभाषितमालाI - 1 to 6 Slokas

Prose: Lessons 1 to 3 (From Sanskrit Pravesika)

UNIT - II भागः - ख

Poetry: सुभाषितमालाII - 1 to 8 Slokas

Prose: Lessons 4 to 6 (From Sanskrit Pravesika)

UNIT - III भागः - ग

Grammar:
1. 1.अच्सन्धिः
2. 2.हल्सन्धिः

UNIT - IV भागः - घ

Essays:
1.अस्माकंदेशः
2.दीपावलीमहोत्सवः
3.संस्कृतप्रचारस्यआवश्यकता

UNIT - V भागः - ङ

Slokas (Verses):
1. Sowndaryalahari (10 Slokas)

TEXT BOOKS:
1. Subhashitamala, Prepared by Dept. of Sanskrit and Indian Culture, SCSVMV University.

2. Sowndaryalahari

CC103	PROBABILITY AND STATISTICS	L	T	P	C
		3	1	0	4

COURSE OBJECTIVES
- To provide an understanding of probability theory and distributions.
- To equip students with statistical tools for data analysis.
- To introduce hypothesis testing and regression techniques.

COURSE OUTCOMES
- Understand basic concepts in probability and random variables.
- Analyze different probability distributions.
- Compute measures of central tendency and dispersion.
- Perform statistical testing for large and small samples.
- Apply curve fitting and chi-square tests in real-life data analysis.

Unit I: Probability
Introduction to Probability, Probability spaces, conditional probability, Bayes' Theorem, Discrete and Continuous one dimensional random variables - Expectations, Moments, Variance of a sum, Moment generating function, Tchebyshev's Inequality.

12 Hrs.

Unit II: Probability Distributions:
Discrete Distributions – Binomial, Poisson and Negative Binomial distributions, Continuous Distributions - Normal, Exponential and Gamma distributions.

12 Hrs.

Unit III: Statistics:
Measures of Central tendency, Measures of dispersion, co efficient of variation, Moments, Skewness and Kurtosis, Correlation, Rank Correlation and Regression (Bivariate).

12 Hrs.

Unit IV: Testing of Hypothesis-I
Curve fitting by the method of least squares- fitting of straight lines, second degree parabolas and more general curves. Test of significance: Large sample test for single proportion, difference of proportions, single mean, difference of means, and difference of standard deviations.

12 Hrs.

Unit V: Testing of Hypothesis-II
Test for single mean, difference of means and correlation coefficients, test for ratio of variances - Chi-square test for goodness of fit and independence of attributes.

12 Hrs.

Text Books:

1. B.S. Grewal, Higher Engineering Mathematics, Khanna Publishers, 35th Edition, 2000.

   Unit 1 - Chapter 2 (1,4,5,7,10,11,13)

2. S.P. Gupta, Statistical Methods, 31st edition, Sultan chand and sons, New Delhi, 2002.

   Unit 2 - Chapter 1 - vol 2
   Unit 3 - Chapter 5,6,7 – vol 1
   Unit 4 - Chapter 8,9,10 – vol 1
   Unit 5 - Chapter 14 – vol 1

References:

1. Srivastava, U.K., Shenoy, G.V., Sharma, S.C. - Quantitative Techniques for ManagerialDecision - New Age International (P) Ltd, New Delhi
2. T. Veerarajan, Probability, Statistics and Random Processes, Third edition, Tata McGraw- Hill, New Delhi, 2010.
3. Erwin Kreyszig, Advanced Engineering Mathematics, 9th Edition, John Wiley & Sons, 2006.
4. Loeve, M. (2012). Probability Theory I. United States: Springer New York.

CC104	DATA STRUCTURES AND ALGORITHMS	L	T	P	C
		3	1	2	5

COURSE OBJECTIVES
- To gain knowledge in designing algorithms to solve problems.
- To understand the concept of linear and nonlinear data structures.
- To know the concept of various sorting and searching techniques.
- To apprehend the tree traversal and searching
- To acquire knowledge in graph traversal and searching.

COURSE OUTCOMES
- Compute and Analyze algorithms for efficiency using asymptotic notations.
- Develop knowledge about basic data structures like arrays, linked list, trees.
- Solve problems by applying suitable data structure.
- Define graph and illustrate graph traversal.
- Design and develop projects requiring implementation of the data structure.

UNIT – I
Introduction to Data Structures and Algorithms: Definition and Importance of Algorithms - Characteristics of Good Algorithms - Definition of a Data structure - Primitive and Composite Data Types- Arrays - Operations on Arrays.

12 Hrs.

UNIT – II
Sorting and Searching Algorithms: Sorting: Bubble sort - Insertion sort - Selection sort - Searching: Linear search - Binary search.

12 Hrs.

UNIT – III
Linear Data Structure: Stacks – Operations on Stack-Applications of Stack: Infix to Postfix Conversion –Postfix Evaluation - Queues - Operations on Queues.

12 Hrs.

UNIT – IV
Dynamic Linear Data Structure: Introduction to Single and Double Linked lists - Representation – Operations on Singly Linked List - Linked Stack and Linked Queues.

12 Hrs.

UNIT – V
Non Linear Data Structure: Trees - Binary Trees - Binary search trees - Traversal Algorithms - Graph: Definition - Types of Graphs - Graph Traversal: BFS and DFS.

12 Hrs.
TOTAL: 60

LIST OF EXPERIMENTS

1. Program to Search an Element in the Array.
2. Program to Search an Element in the Array using Binary Search.
3. Program to Sort an Array using Bubble Sort.
4. Program to Sort an Array using Selection Sort.
5. Program to Sort an Array using Insertion Sort.
6. Program to Implement a Stack Using Arrays.
7. Program to Implement a Queue Using Arrays
8. Program to Implement a Stack using Linked List
9. Program to Implement a Queue using Linked List
10. Program to Perform Tree Traversal.

TEXT BOOKS

1. Levitin, A. *"Introduction to the design and analysis of algorithms"*, Pearson Education., 3rd Ed., 2017.
2. S. Lipschutz, *"Theory and Problems of Data Structures"*, Tata McGraw-Hill, 2023 ed., 2023.
3. J. P. Tremblay and P. G. Sorenson, *"An Introduction to Data Structures with Applications"*, Tata McGraw-Hill, 2023 ed., 2023.

REFERENCE BOOKS

1. E. Horowitz and S. Shani, "Fundamentals of Data Structures in C++", Galgotia Publications, 3rd ed., 2023. [Online].
2. R. Kruse, C. L. Tondo, and B. Leung, "Data Structures and Program Design in C", PHI, 4th ed., 2023.

E- REFERENCES

1. https://www.geeksforgeeks.org/advanced-data-structures
2. https://www.tutorialspoint.com/data_structures_algorithms/index.htm
3. https://peterindia.net/Algorithms.html
4. https://www.freecodecamp.org/learn/javascript-algorithms-and-data-structures/

SEC102	OBJECT ORIENTED PROGRAMMING IN JAVA	L	T	P	C
		3	1	3	6

COURSE OBJECTIVES
- To introduce the object oriented programming system concepts
- To introduce syntax and semantics of Java programming language
- To develop modular programs using Java
- To setup JDK environment to create, debug and run Java programs
- To develop database applications

COURSE OUTCOMES
- Able to implement Object Oriented Concepts using Java Language.
- Able to develop and deploy applications and applets in JAVA.
- Able to develop and deploy GUI using JAVA Swing and AWT, JDBC.
- Able to develop and deploy web applications.
- Able to implement database applications

UNIT I: Fundamentals of Object Oriented Programming: Basic Concepts of Object Oriented Programming (OOP), Benefits and Applications of OOP. Java Evolution: Java Features, Difference between Java, C and C++, Java and Internet, Java Environment. Overview of Java Language: Introduction to Simple Java Program, Use of Comments and Math function, Application of two classes, Java Program Structure, Java Tokens and statements, Implementing Java program and JVM, Command Line Arguments.

12 Hrs.

UNIT II: Constants, Variables and Data Types: Constants, Variables, Data Types, Declaration of Variables, Giving values to Variables, Symbolic Constants, Typecasting. Operators & Expressions: Arithmetic operators, Relational operators, Logical operators, Assignment operators, Increment & Decrement operators, conditional operators, Bitwise operators, Arithmetic Expressions, Evaluation of Expressions, Type Conversions in Expressions, Operator Precedence & Associativity. Decision Making, Branching & Looping: Decision Making with Control Statements, looping statements, Jump in loops, Labelled loops

12 Hrs.

UNIT III: Classes, Objects and Methods: Defining Class, Methods Declaration, Constructors, Methods Overloading, Overriding Methods, Inheritance Arrays, Strings and Vectors: 1D arrays, creating an Array, 2D arrays, Strings, Vectors, Wrapper Classes, Enumerated Types Inheritance: Defining, extending classes, and Implementing Interfaces. Multiple inheritance and polymorphism.

12 Hrs.

UNIT IV: Packages: Basics of packages, System packages, Creating and accessing packages, user defined packages, Adding class to a package. Exception Handling: Using the main keywords of exception handling: try, catch, throw, throws and finally; Nested try, Multiple catch statements, Creating user defined exceptions

12 Hrs.

UNIT – V: Database Connectivity: JDBC architecture Establishing connectivity and working with connection interface, Creating, and executing SQL statements. Java applets, AWT controls (Button, Labels, Combo box, list and other Listeners, menu bar) layout manager, string handling (only main functions), Introduction to JAVA Swing, Event Handling

12 Hrs.
TOTAL: 60 Hrs.

LIST OF EXPERIMENTS

1. Class, object, abstract classes and interfaces.
2. Overloading, overriding and various forms of inheritance.
3. Create packages and multiple threads in Java.
4. Input/output and Applets.
5. Exception handling.
6. String handling.
7. Event handling (Mouse and Keyboard events).
8. Layout Manager create different applications.
9. Create and manipulate Text Area, Canvas, Scroll Bars, Frames and Menus using swing/AWT
10. Client Server Interaction with stream socket connections.
11. Read data from disk file.

TEXT BOOKS

1. A. Goyal, "The Essentials of JAVA", Khanna Book Publishing Company Private Limited, 2nd ed., 2023.
2. Schildt, H., "Java: The Complete Reference". McGraw-Hill Education, 12th edition, 2022.

REFERENCE BOOKS

1. T. Alam, "Core JAVA", Khanna Book Publishing Company Private Limited, 2nd ed., 2023.
2. Balaguruswamy E. "Programming with JAVA: A Primer". McGraw Hill Education, 7th ed., India, 2023.
3. Y. D. Liang, "Introduction to Java Programming", Pearson, 10th ed., 2023.
4. S. Malhotra and S. Choudhary, "Programming in Java", Oxford University, 3rd ed., 2023.

E- REFERENCES:

1. https://www.geeksforgeeks.org/object-oriented-software-engineering/
2. https://www.tutorialspoint.com/object_oriented_analysis_design/index.htm
3. https://www.javatpoint.com/object-oriented-analysis-and-design
4. https://nptel.ac.in/courses/106105191

MDE102	INTRODUCTION TO INDIAN KNOWLEDGE SYSTEM	L	T	P	C
		1	0	0	1

COURSE OBJECTIVES
- To Understand the fundamental principles and sutras of Vedic Mathematics.
- To Apply shortcut methods to perform multiplication, division, squaring, and cubing efficiently.
- To Develop mental calculation techniques using vertical and crosswise, Nikhilam, and Paravartya Sutras.
- To Solve algebraic equations and roots with simplified Vedic methods.

COURSE OUTCOMES
- Use Vedic techniques to multiply numbers quickly, including three- and four-digit numbers.
- Apply one-line formulas like Nikhilam and Vertical & Crosswise for efficient multiplication.
- Perform division of single, double, and triple-digit numbers using Paravartya Sutra.
- Calculate squares and cubes using the Duplex method and identify shortcuts for squaring numbers.

UNIT – I
Multiplication- Finding square- Sum of last two digits zero-By one less than the previous-By Nikhilam-Vertical and cross wise-three digit and four digit numbers – Product of three numbers.

UNIT – II
Division- Single, two and three digit divisors- Paravartya sutra (change the sign and add). Squaring and cubing-Duplex method.

UNIT - III
Finding square root, solving simultaneous equation in 2 and 3 variables.

REFERENCE BOOKS
1. Vedic Mathematics Part I, S.Haridas, Bhavan's Book University,2000.
2. Discover Vedic Mathematics, Kenneth R Williams, Motilal Banarsidass Publishers, ISBN: 81-208-3097-0,2002.
3. Vedic Mathematics for Schools, J.T.Glover, Motilal Banarsidass Publishers, ISBN: 81- 208-1670-6,1999.

VAC102	INDIAN CONSTITUTION	L	T	P	C
		1	0	0	1

COURSE OBJECTIVES
- To know about Indian constitution
- To know about central and state government functionalities in India
- To know about Indian society.

COURSE OUTCOMES
- Understand the origin and foundational principles of the Indian Constitution.
- Explain the structure and functions of Union and State Governments.
- Analyze the constitutional provisions related to citizens' rights and Indian society.

UNIT I

Historical Background – Constituent Assembly of India – Philosophical Foundations of The Indian Constitution – Preamble – Fundamental Rights – Directive Principles of State Policy – Fundamental Duties – Citizenship – Constitutional Remedies for Citizens.

UNIT II

Union Government – Structures of the Union Government and Functions – President – Vice President – Prime Minister – Cabinet – Parliament – Supreme Court of India – Judicial Review.

UNIT III

State Government – Structure and Functions – Governor – Chief Minister – Cabinet – State Legislature – Judicial System in States – High Courts and other Subordinate Courts.

TEXT BOOKS
1. Durga Das Basu, "Introduction to the Constitution of India ", Prentice Hall of India, New Delhi.
2. R.C.Agarwal, (1997) "Indian Political System", S.Chand and Company, New Delhi.

REFERENCE BOOKS
1. Sharma, Brij Kishore, "Introduction to the Constitution of India", Prentice Hall of India, New Delhi.