ANNA ADARSH COLLEGE FOR WOMEN
ANNA NAGAR, CHENNAI-40.

DEPARTMENT OF BCA (SHIFT I)

S.No.	Name of The Faculty and Qualification	Designation
1	S.Karpagam, M.C.A. M.Phil.,	Head/ Associate Professor
2	K.Madhumathi, M.C.A. M.Phil.,	Associate Professor
3	S.Deebalakshmi, M.C.A., HDSE., NET-JRF	Assistant Professor
4	S.Jayanthi, M.C.A. M.Phil. SET	Assistant Professor
5	D.Sindhujah, M.C.A., SET, NET	Assistant Professor

UNIVERSITY OF MADRAS

ACADEMIC YEAR 2021-2022

BCA SYLLABUS – I YEAR

S.NO.	PART	SUBJECT NAME	CREDITS	MAX. MARKS		
SEMESTER I				EXTERNAL MARKS	INTERNAL MARKS	TOTAL
1	I	Tamil/ Other languages – I	3	75	25	100
2	II	English – I	3	75	25	100
3	III	Core I : Problem Solving using Python	4	75	25	100
4	III	Practical I: Problem Solving using Python Lab	2	60	40	100
5	III	Allied I: Mathematics I	5	75	25	100
6	IV	Basic Tamil/Advanced Tamil/Non Major Elective I	2	75	25	100
7	IV	Soft Skill I	3	50	50	100
		Total Credits	**22**			
SEMESTER II			**CREDITS**	**EXTERNAL MARKS**	**INTERNAL MARKS**	**TOTAL**
8	I	Tamil/ Other languages – II	3	75	25	100
9	II	English – II	3	75	25	100
10	III	Core II :Object Oriented Programming Concepts using C ++	4	75	25	100
11	III	Practical II : C++ programming Lab	3	60	40	100
12	III	Allied II: Mathematics II	5	75	25	100
13	IV	Basic Tamil/Advanced Tamil/Non Major Elective II	2	75	25	100
14	IV	Soft Skill II	3	50	50	100
		Total Credits	**23**			

I SEMESTER

SUBJECT :PART I - TAMIL I
SUBJECT CODE : LA11A
YEAR/SEM : I YEAR/I SEM
பொதுத்தமிழ் - முதலாமாண்டு - முதற்பருவம் (FIRST SEMESTER)

நோக்கும் கற்றல் பயன்பாடும் (2021 - 2022)
Objective - Syllabus - Out come (2021 -2022)

பாடத்திட்டத்தின் நோக்கம்:

காலந்தோறும் தமிழ் அடைந்துள்ள வளர்ச்சியையும், இன்றைய நவீன காலத்தில் உருவான தமிழ் இலக்கியங்களையும் ஒற்றுமை வேற்றுமைப்படுத்தி ஆராய்கின்ற நோக்கில் பொதுத்தமிழ்ப் பாடப்பகுதி கட்டமைக்கப்பட்டுள்ளது.

பாரதியார், பாரதிதாசன், கவிமணி உள்ளிட்டோரின் மரபுக்கவிதைகளும், அப்துல் ரகுமான், சிற்பி, மு.மேத்தா, வைரமுத்து உள்ளிட்டோரின் புதுக் கவிதைகளும் இரா.பி.சுதுப்பிள்ளை அவர்களின் உரைநடை, முத்துசாமி அவர்களின் நாடகம் போன்றவை இடம்பெற்றுள்ளன.
தமிழ் மக்களின் வாய்மொழி இலக்கியங்களில் சிலபாடல்கள் பாடமாக வைக்கப்பட்டுள்ளன. இந்த இலக்கியங்கள் சார்ந்த வரலாற்றுப் பின்புலமும் பாடமாக அமைந்துள்ளன.

மாணவர்களுக்குப் படிப்பின் ஆர்வத்தைத் தூண்டும் வகையில் கவிதைகள், சிறுகதை, உரைநடை, நாடகம் போன்ற எளிமையான பகுதிகள் அமைக்கப்பட்டுள்ளன.

இலக்கிய வாசிப்பின் ஆர்வத்தை ஊக்குவித்தலும் தற்கால தமிழ் இலக்கியத்தின் ஆளுமைகளை மாணவர்கள் புரிந்துகொள்ள வைத்தலும் பாடத்திட்டத்தின் நோக்கமாகும்.

தமிழ் இலக்கிய வரலாற்றில் தற்கால படைப்பாளர்களையும் படைப்புகளையும் அறிமுகப்படுத்தித் தமிழ் இலக்கியப் பாரம்பரியத்தைப் புரிய வைத்தலும் பிழையின்றி எழுதுவதற்குரிய இலக்கண விதிமுறைகளைத் தெரிந்து கொள்ளுதலும் பாடத்திட்டத்தின் நோக்கமாகும்.

தமிழ் மொழியின் கடினமான சொற்களுக்குரிய பொருளைத் தெரிந்துகொள்ளும் வகையில் அகராதியைப்

பயன்படுத்துவதற்குரிய அடிப்படையைக் கற்றுத்தருதலே நோக்கமாகும்.

பாடத்திட்டம்

பாடப்பகுப்பு

I. இலக்கியம்
II. அதைச் சார்ந்த தமிழிலக்கிய வரலாறு
III. மொழிப் பயிற்சி

அலகு - 1

மரபுக்கவிதை
1. பாரதியார் - பாரத சமுதாயம்.
2. பாரதிதாசன் - ஒற்றுமைப்பாட்டு
3. கவிமணி தேசிக விநாயகம் பிள்ளை - உடல் நலம் பேணல்
4. நாமக்கல் கவிஞர் வெ. இராமலிங்கம்பிள்ளை - தமிழன் இதயம்
5. கவிஞர் கண்ணதாசன் - குடும்பம் ஒரு கதம்பம்
6. பட்டுக்கோட்டை அ. கல்யாணசுந்தரம் - வருங்காலம் உண்டு
7. தமிழ் ஒளி - வழிப்பயணம்
புதுக்கவிதை
1. கவிஞர் ந. பிச்சமூர்த்தி - காதல்
2. கவிஞர் அப்துல் ரகுமான் - பித்தன்
3. கவிஞர் மு.மேத்தா - காதலர் பாதை, ஒரு கடிதம் அனாதையாகிவிட்டது, நிழல்கள்
4. கவிஞர் இன்குலாப் - ஒவ்வொரு புல்லையும் பெயர் சொல்லி அழைப்பேன்
5. கவிஞர் தமிழன்பன் - சொல்லில் உயர்வு தமிழ்ச்சொல்லே
6. கவிஞர் வைரமுத்து - விதைச்சோளம்
7. கவிஞர் அ.சங்கரி - இன்று நான் பெரிய பெண்

அலகு - 2

நாட்டுப்புற இலக்கியம்
1. ஏற்றப்பாட்டு
2. தெம்மாங்கு
3. அம்பா பாடல்கள்
4. விளையாட்டுப் பாடல்கள்

5. நடவுப் பாடல்கள்

அலகு - 3

சிறுகதைகள்
1. கு.ப.ரா- கனகாம்பரம்
2. கு.அழகிரிசாமி - குமாரபுரம் ஸ்டேஷன்
3. தமிழ்ச்செல்வன் - வெயிலோடு போய்
4.தோப்பில் முகமது மீரான் - வட்டக்கண்ணாடி
5.அம்பை - பிளாஸ்டிக் டப்பாவில் பராசக்தி
முதலியோர்
உரைநடை
1.இரா.பி.சேதுப்பிள்ளை - வண்மையும் வறுமையும்

அலகு - 4

நாடகம்
நா.முத்துசாமி - நாற்காலிக்காரர்

அலகு -5

தமிழிலக்கிய வரலாறு
1. மரபுக் கவிதை - இருபதாம் நூற்றாண்டு கவிஞர்கள்
2. புதுக்கவிதை - தோற்றம் - வளர்ச்சி -வரலாறு
3. நாட்டுப்புறப் பாடல்கள், கதைகள், கதைப்பாடல்கள், பழமொழிகள், விடுகதைகள்
- வரலாறு
4. சிறுகதை, உரைநடை வரலாறு
5. நாடகம் - வரலாறு

அலகு - 6

மொழிப் பயிற்சி
1. வாக்கிய வகை(தொடர் வாக்கியம், தனி வாக்கியம், கூட்டு வாக்கியம்)
2. இரு வழக்குகள் (பேச்சு, எழுத்து)
3. எழுவாய், பயனிலை, செயப்படுபொருள்
4. ஒருமை, பன்மை மயக்கம்
5. திணை, பால், எண், இட வேறுபாடு
6. நால்வகைச் சொற்கள் (பெயர், வினை, இடை, உரி)
7. அகரவரிசைப் படுத்துதல்

கற்றலும் பயன்பாடும்:

தமிழ் மொழியின் இலக்கிய வளங்களின் மதிப்பைப் புரிதல். தமிழ் இலக்கிய வாசிப்பின் வழி சமூக விழிப்புணர்வைத் தூண்டுதல். தமிழ் இலக்கிய வளங்களின் வாயிலாகத் தமிழ்ப்பண்பாட்டை அடுத்த தலைமுறைக்குக் கொண்டுசெல்லுதல்.

மொழிவளத்தின் தேவையை வலியுறுத்துதல். மாணவர்கள் பிழையின்றி எழுத மொழிப்பயிற்சி உதவுகிறது. இப்பாடத்திட்டம் மாணவர்கள் தங்கள் படைப்புகளை உருவாக்குவதற்கும் பயன்படுகிறது.
போட்டித்தேர்வுகளை எதிர்கொள்ளுவதற்குரிய வகையில் இலக்கிய
வரலாற்றுப்பகுதி மிகுந்த பயனுடையதாய் உள்ளது.

பாடநூல்

சென்னைப்பல்கலைக்கழகம் (university of Madras)

 அடித்தளப் படிப்பு - பகுதி - I தமிழ்

முதலாம் மற்றும் இரண்டாம் பருவங்களுக்குரியது. அனைத்துப் பட்டப்படிப்பு பிரிவுகளுக்கும் ஐந்தாண்டு ஒருங்குமுறை பட்ட மேற்படிப்புப் பிரிவுகளுக்கும் பொதுவானது.

தாள் -I - செய்யுள் திரட்டு
(Foundation Course Part - I Tamil - For I & II Semesters
Common to all undergraduate course and Five-Year Integrated postgraduate
courses. (2020 - 2021 onwards.)
 நாற்காலிக்காரர் - நா.முத்துசாமி
 தமிழ் இலக்கிய வரலாறு பாடம் தழுவியவை
 மொழிப்பயிற்சி

Reference book
தமிழ் - பகுதி 4 - சென்னைப் பல்கலைக்கழகம்
வடிவமைத்த பாடத்திட்டங்கள் ஆகையால் குறிப்புதவி நூல் என்று தனியாக இல்லை. (Reference book not applicable)

SUBJECT:PART-I - HINDI
SUBJECT CODE: CLE1E
YEAR/SEM: I YEAR/ I SEM

I. COURSE OBJECTIVES:
The objectives of the course is to sensitize the students -
1. To the aesthetic and cultural aspects of literary appreciation and analysis.
2. To introduce modern Hindi Prose to the students and to understand the cultural, social and moral values of modern Hindi Prose.
3. To familiarize Official correspondence, General letter correspondence and technical words.
4. To motivate to demonstrate human value in different life situations

PART-I - HINDI

(With effect from the Academic Year 2015-2016)
I YEAR – I SEMESTER

PAPER – I - PROSE, FUNCTIONAL HINDI & LETTER WRITING

I . PROSE (Detailed Study) : HINDI GADHYA MALA
Ed. by Dr. Syed Rahamathulla
Poornima Prakashan, 4/7 Begum III Street
Royapettah, Chennai – 14.

LESSONS PRESCRIBED :
1. Sabhyata ka Rahasya
2. Mitrata
3. Yuvavon sen
4. Paramanu Oorja evam Khadya Padarth Sanrakshan
5. Yougyata aur Vyavasay ka Chunav.
II. FUNCTIONAL HINDI & LETTER WRITING
Students are expected to know the office and Business Procedures, Administrative and Business Correspondence.

1. General Correspondence:

1. Personal Applications
2. Leave Letters
3. Letter to the Editor
4. Opening an A/C
5. Application for Withdrawal
6. Transfer of an A/C
7. Missing of Pass Book / Cheque Leaf
8. Complaints
9. Ordering for Books
10. Enquiry
III. OFFICIAL CORRESPONDENCE:

1. Government Order
2. Demi Official Letter
3. Circular
4. Memo
5. Official Memo
6. Notification
7. Resolution

Notice
BOOKS FOR REFERENCE :

1. Karyalayeen Tippaniya : Kendriya Hindi Sansthan, Agra
2. Prayojan Moolak Hindi : Dr. Syed Rahamathulla, Poornima Prakashan
4/7, Begum III Street, Royapettah, Chennai – 14.

UNITISED SYLLABUS

UNIT-I
1. Sabhyata ka Rahasya
2. Personal Applications
3. Leave Letters
4. Government Order
5. Administrative Terminology Hindi to English (25 Words)

UNIT - II
1. Mitrata
2. Letter to the Editor
3. Opening an A/C
4. Demi Official Letter
5. Administrative Terminology English to Hindi (25 Words)
UNIT-III
1. Yuvavon Se
2. Application for Withdrawal
3. Circular
4. Memo

5. Administrative Terminology Hindi to English (25 Words)
UNIT-IV
1. Paramanu Oorja evam Khadya Padarth Sanrakshan
2. Transfer of an A/C
3. Missing of Pass Book / Cheque Leaf
4. Official Memo
5. Administrative Terminology English to Hindi (25 Words)
UNIT-V
1. Yougyata aur Vyavasay ka Chunav
2. Complaints
3. Ordering for Books
4. Notification
5. Official Noting Hindi to English (25 words)

UNIT-VI

1. Enquiry
2. Resolution
3. Notice
4. Official Noting English to Hindi (25 words)

□ COURSE OUTCOMES:

1. Understanding the concept and importance of functional Hindi
2. Understanding various forms of functional Hindi and its usage according to its area of application
3. Knowledge about good civilization qualities and culture.
4. Knowledge about the importance of human values.

SUBJECT:Foundation Course: Paper I-French I
SUBJECT CODE:CLK1S
YEAR/SEM: I YEAR/I SEM

Title of the Paper : Prescribed text and grammar-I

Objectives :
In teaching French we aim to

- **provide the learners with a basic knowledge of grammar and gradually give them an insight into the culture and literature of France**
- **enable them to comprehend the nuances of the language so they are better equipped to express themselves in French**
- **discover another world, another people, another way of life .**
- **make them more accepting of people who differ from them**

Prescribed textbook:
> Régine Mérieux & Yves Loiseau, Latitudes 1, Paris, Didier, 2017 (Units 1-6 only).

Unité 1 - Salut!
Saluer - entrer en contact avec quelqu'un - se présenter- s'excuser

Unité 2 - Enchanté !
Demander de se présenter - Présenter quelqu'un

Unité 3 - J'adore !
Exprimer ses goûts - Échanger sur ses projets

Unité 4 - Tu veux bien ?
Demander à quelqu'un de faire quelque chose - Demander poliment - Parler d'actions passes

Unité 5 - On se voit quand ?
Proposer , accepter, refuser une invitation. - Indiquer la date - Prendre et fixer un rendez-vous - Demander et indiquer l'heure

Unité 6 - Bonne idée !
Exprimer son point de vue positif et négatif - S'informer sur le prix - S'informer sur la quantité - Exprimer la quantité .

FRENCH SYLLABUS WITH EFFECT FROM 2020-2021

Outcomes :
Learners are able
- to comprehend and express themselves well
- to have an interest to look into another world
- to improve communication skills
- to perform well in the University Exams.

Recommend text : Not applicable

SUBJECT: COMMUNICATIVE ENGLISH – I
SUBJECT CODE: LZ11A
YEAR/SEMESTER:I YEAR/I SEM

COURSE OBJECTIVES:

- **To give English language skill practice to students to enhance their English proficiency.**
- **To expose students to native speakers‟ spoken language to enable students to recognize native speakers‟ accent and language usage.**
- **To simulate real life situations in the classroom to practice real English dialogues and speeches to gain English language fluency.**
- **To give both silent and loud reading practice to students, to enhance their comprehension and English sound recognition skills**
- **To help students overcome their fear and to speak in English in front of their peers and teachers thus, build their self-confidence through various classroom activities and outdoor activities.**

SYLLABUS

Unit I
Listening and Speaking
a. Introducing self and others
b. Listening for specific information
c. Pronunciation (without phonetic symbols)
i. Essentials of pronunciation
ii. American and British pronunciation
iii.
2. Reading and Writing
a. Reading short articles – newspaper reports / fact based articles
i. Skimming and scanning
ii. Diction and tone
iii. Identifying topic sentences
b. Reading aloud: Reading an article/report
c. Journal (Diary) Writing
3. Study Skills - 1
a. Using dictionaries, encyclopaedias, thesaurus
4. Grammar in Context:
Naming and Describing
Nouns & Pronouns
Adjectives

Unit II
1. Listening and Speaking
a. Listening with a Purpose
b. Effective Listening
c. Tonal Variation
d. Listening for Information
e. Asking for Information

f. Giving Information
2. Reading and Writing
1. a. Strategies of Reading:
Skimming and Scanning
b. Types of Reading
Extensive and Intensive Reading
c. Reading a prose passage
d. Reading a poem
e. Reading a short story
2. Paragraphs: Structure and Types
a. What is a Paragraph?
b. Paragraph structure
c. Topic Sentence
d. Unity
e. Coherence
f. Connections between Ideas: Using Transitional words and expressions
g. Types of Paragraphs
3. Study Skills II:
Using the Internet as a Resource
a. Online search
b. Know the keyword
c. Refine your search
d. Guidelines for using the Resources
e. e-learning resources of Government
of India
f. Terms to know
4. Grammar in Context
Involving Action-I
a. Verbs
Concord

Unit III
1. Listening and Speaking
a. Giving and following instructions
b. Asking for and giving directions
c. Continuing discussions with connecting ideas
2. Reading and writing
a. Reading feature articles (from newspapers and magazines)
b. Reading to identify point of view and perspective (opinion pieces, editorials etc.)
c. Descriptive writing – writing a short descriptive essay of two to three paragraphs.
3. Grammar in Context:
Involving Action – II
Verbals - Gerund, Participle, Infinitive
Modals

Unit IV
1. Listening and Speaking
a. Giving and responding to opinions

2. Reading and writing
a. Note taking
b. Narrative writing – writing narrative essays of two to three paragraphs
3. . Grammar in Context:
Tense
Present
Past
Future

Unit V
1. Listening and Speaking
a. Participating in a Group Discussion
2. Reading and writing
a. Reading diagrammatic information
– interpretations maps, graphs and pie charts
b. Writing short essays using the language of comparison and contrast
Grammar in Context: Voice (showing the relationship between Tense and Voice)

COURSE OUTCOMES:

- **The course seeks to develop the students' abilities in grammar, oral skills, reading, writing and study skills**
- **Students will heighten their awareness of correct usage of English grammar in writing and speaking**
- **Students will improve their speaking ability in English both in terms of fluency and comprehensibility**
- **Students will give oral presentations and receive feedback on their performance**
- **Students will increase their reading speed and comprehension of academic articles**
- **Students will improve their reading fluency skills through extensive reading.**

SUBJECT: PROBLEM SOLVING USING PYTHON
SUBJECT CODE: SE21A
YEAR/SEMESTER: I YEAR / I SEM

OBJECTIVES:

- **Describe the core syntax and semantics of Python programming language.**
- **Discover the need for working with the strings and functions.**
- **Illustrate the process of structuring the data using lists, dictionaries, tuples and sets.**
- **Understand the usage of packages and Dictionaries.**

UNIT – I

Introduction: The essence of computational problem solving – Limits of computational problem solving-Computer algorithms-Computer Hardware-Computer Software-The process of computational problem solving-Python programming language - Literals - Variables and Identifiers - Operators - Expressions and Data types.

UNIT - II

Control Structures: Boolean Expressions - Selection Control - If Statement-Indentation in Python- Multi-Way Selection -- Iterative Control- While Statement- Infinite loops- Definite vs. Indefinite Loops- Boolean Flags and Indefinite Loops. Lists: List Structures - Lists in Python - Iterating over lists in Python.

UNIT - III

Functions: Program Routines- Defining Functions- More on Functions: Calling Value-Returning FunctionsCalling Non-Value-Returning Functions- Parameter Passing - Keyword Arguments in Python - Default Arguments in Python-Variable Scope.

UNIT - V

Objects and their use: Software Objects - Turtle Graphics – Turtle attributes-Modular Design: Modules - TopDown Design - Python Modules - Text Files: Opening, reading and writing text files - String Processing -Exception Handling.

UNIT - V

Dictionaries and Sets: Dictionary type in Python - Set Data type. Object Oriented Programming using Python: Encapsulation - Inheritance – Polymorphism. Recursion: Recursive Functions.

COURSE OUTCOMES:

CO1	**To Understand the principles of Python and acquire skills in programming in python**
CO2	**To develop the emerging applications of relevant field using Python**
CO3	**Interpret the fundamental Python syntax and semantics and be fluent in the use of Python control flow statements.**
CO4	**Able to develop simple turtle graphics programs in Python**

TEXT BOOK:

1. **Charles Dierbach, "Introduction to Computer Science using Python - A computational Problem solving Focus", Wiley India Edition, 2015.**

REFERENCE BOOKS:

1. Mark Lutz, "Learning Python Powerful Object Oriented Programming", O'reilly Media 2018, 5th Edition.
2. Timothy A. Budd, "Exploring Python", Tata MCGraw Hill Education Private Limited 2011, 1 st Edition.
3. Allen Downey, Jeffrey Elkner, Chris Meyers, "How to think like a computer scientist: learning with Python", 2012.
4. Sheetal Taneja & Naveen kumar, "Python Programming a Modular approach – A Modular approach with Graphics, Database, Mobile and Web applications", Pearson, 2017.
5. Ch Satyanarayana M Radhika Mani, B N Jagadesh, "Python programming", Universities Press 2018.

WEB REFERENCES

- **http://interactivepython.org/courselib/static/pythonds**
- **http://www.ibiblio.org/g2swap/byteofpython/read/**
- **http://www.diveintopython3.net/**
- **http://greenteapress.com/wp/think-python-2e/**
- **NPTEL & MOOC courses titled Python programming**
- **http://spoken-tutorial.org/tutorial-search/?search_foss=Python&search_language=English**
- **http://docs.python.org/3/tutorial/index.html**

SUBJECT: PRACTICAL-I PYTHON PROGRAMMING LAB
SUBJECT CODE: SE211
YEAR/SEM: I YEAR / I SEM

OBJECTIVES:

- **To implement the python programming features in practical applications.**
- **To write, test, and debug simple Python programs.**
- **To implement Python programs with conditionals and loops.**
- **Use functions for structuring Python programs.**
- **Represent compound data using Python lists, tuples, dictionaries , turtles, Files and modules.**

LIST OF EXERCISES:

1. Program to convert the given temperature from Fahrenheit to Celsius and vice versa depending upon user's choice.
2. Program to calculate total marks, percentage and grade of a student. Marks obtained in each of the five subjects are to be input by user. Assign grades according to the following criteria:
Grade A: Percentage >=80 Grade B: Percentage >=70 and <80
Grade C: Percentage >=60 and <70 Grade D: Percentage >=40 and <60
Grade E: Percentage <40
3. Program, to find the area of rectangle, square, circle and triangle by accepting suitable input parameters from user.
4. Program to display the first n terms of Fibonacci series.
5. Program to find factorial of the given number using recursive function.
6. Write a Python program to count the number of even and odd numbers from array of N numbers.
7. Python function that accepts a string and calculate the number of upper case letters and lower case letters.
8. Python program to reverse a given string and check whether the give string is palindrome or not.
9. Write a program to find sum of all items in a dictionary.
10. Write a Python program to construct the following pattern, using a nested loop
1
22
333
4444
55555
666666
7777777
88888888
999999999
11. Read a file content and copy only the contents at odd lines into a new file.
12. Create a Turtle graphics window with specific size.
13. Write a Python program for Towers of Hanoi using recursion
14. Create a menu driven Python program with a dictionary for words and their meanings.
15. Devise a Python program to implement the Hangman Game.

COURSE OUTCOMES:

CO1	Understand the numeric or real life application problems and solve them.
CO2	Apply a solution clearly and accurately in a program using Python.
CO3	Apply the best features available in Python to solve the situational problems.

SUBJECT : Allied - Semester I - Mathematics -I
SUBJECT CODE : SM3AA
YEAR/SEMESTER : I YEAR / I SEM
(Effective from the Academic Year 2020-2021)

COURSE OBJECTIVES:
1. To enable students to learn basic concepts of Algebra and Numerical methods.
2. To enable students to understand Matrices and Theory of equations.
3. To learn circular, hyperbolic and inverse hyperbolic functions and to understand differential calculus and its applications.

SYLLABUS
Unit 1
Algebra And Numerical Methods: Algebra: Summation of series - simple problems. Numerical Methods: Operators E,,∇, difference tables- Newton-Raphson method- Newton's forward and backward interpolation formulae for equal intervals, Lagrange's interpolation formula.
Chapter 2, Section 2.1.3, 2.2, 2.2.1, 2.3, 2.3.3
Chapter 3, Section 3.4.1 and Chapter 5, Section 5.1 and 5.2.
Unit 2
Matrices: Symmetric, Skew-Symmetric, Orthogonal, Hermetian, Skew-Hermetian and Unitary matrices. Eigen values and Eigen-vectors, Cayley-Hamilton theorem (without proof) – verification- Computation of inverse of matrix using Cayley - Hamilton theorem.
Chapter 4, Section 4.1.1 to 4.1.6, 4.5, 4.5.2, 4.5.3.
Unit 3
Theory Of Equations: Polynomial equations with real coefficients, irrational roots, complex roots, symmetric functions of roots, transformation of equation by increasing or decreasing roots by a constant, reciprocal equation-simple problems.
Chapter 3, Section 3.1 to 3.4.1(omit section 3.2.1)
Unit 4
Trigonometry:Expansions of sin(nθ) and cos(nθ) in a series of powers of sinθ and cosθ - Expansions of sinnθ, cosnθ, tannθ in a series of sines, cosines and tangents of multiples of "θ" - Expansions of sinθ, cosθ and tanθ in a series of powers of "θ" – Hyperbolic and inverse hyperbolic functions .
Chapter 6, Section 6.1 to 6.3.
Unit 5
Differential Calculus:Successive differentiation, nth derivatives, Leibnitz theorem (without proof) and applications, Jacobians, Curvature and radius of curvature in Cartesian co-ordinates, maxima and minima of functions of two variables- Simple problems
Chapter 1, Section 1.1 to 1.3.1 and 1.4.3.

COURSE OUTCOMES:
1.Student gain knowledge to find the summation of series and to solve problems in Numerical methods.
2.Student will be able to find the Eigen values, Eigen vectors, apply Cayley Hamilton theorem to find inverse of a Matrix, Powers of a Matrix and to solve polynomial equations.

3.Student will be able to evaluate circular, Hyperbolic, inverse hyperbolic functions and to find higher derivatives of functions and its applications
4. To Evaluate circular and Hyperbolic and inverse hyperbolic functions and their powers.
5 .To find higher derivatives of functions and its applications.
Content and treatment as in
Allied Mathematics, Volume I and II, by P. Duraipandian and S. Udayabaskaran, S. Chand Publications

Reference:-
1. S. Narayanan and T.K. Manickavasagam Pillai – Ancillary Mathematics, S.viswanathan Printers, 1986, Chennai.
2. Allied Mathematics by Dr. A. Singaravelu, Meenakshi Agency.

e-Resources:
1. http://www.themathpaage.com
2.http://nptel.ac.in

SUBJECT : BASIC TAMIL - அடிப்படைத் தமிழ்
SUBJECT CODE: NLT1C
YEAR/SEMESTER : I YEAR/ I SEM

அடிப்படைத்தமிழ் - நோக்கும் கற்றல் பயன்பாடும்

பாடத்திட்டத்தின் நோக்கம் (Objective)

தமிழ்மொழியைப் பேசவும் எழுதவும் படிக்கவும் தெரியாத மாணவர்கள் அடிப்படைத்தமிழ் பாடம் படித்துப் பயன்பெறும் நோக்கில் பாடத்திட்டம் அமைகிறது. அண்டை மாநிலங்களிலிருந்தும் பிற நாடுகளிலிருந்தும் இளங்கலை, இளம் அறிவியல் பட்டம் பெறும் மாணவர்கள் தமிழ் நாட்டின் மாநில மொழியைப் பேசவும் எழுதவும் துணைபுரியும் வகையில் பாடத்திட்டம் வடிவமைக்கப்பட்டுள்ளது.

இம்மாணவர்கள் முதற்பருவத்தில் தமிழ் மொழியின் எழுத்துக்களை எழுதவும் படிக்கவும் பயிற்சி அளிக்கப்படுகிறது. மேலும் தமிழ் மொழியின் சொல் வகை, தொடரமைப்பு, தமிழில் எண்ணுப்பெயர்கள், உடல் உறுப்புகள், அன்றாட வாழ்விற்குத் தேவையான பொருள்களை அறிந்துகொள்ள வைப்பதே இதன் நோக்கமாகும்.

பாடத்திட்டம் - முதல் பருவம் (SYLLABUS)

அலகு - 1.
எழுத்துகள்
1. உயிர் எழுத்து, ஆய்த எழுத்து, 2. மெய் எழுத்து , 3. உயிர் மெய் எழுத்து

அலகு - 2
சொற்கள்
1. பெயர்ச்சொல், 2. வினை ச்சொல், 3. இடை ச்சொல், 4. உரிச் சொல்

அலகு -3.
தொடரமைப்பு
1. எழுவாய், 2. பயனிலை, 3. செயப்படுப் பொருள்

அலகு -4.
பிழை நீக்கம்
1. ஒற்றுப் பிழை, 2. எழுத்துப் பிழை, 3. தொடர்ப்பிழை,

அலகு - 5

எண்கள், உறவுப் பெயர்கள், வாழ் இடங்களும், பொருள்களும்

அலகு - 6
அறிமுகம்
1. விழாக்கள், 2. இயற்கை, 3. உணவு முறைகள்-சுவை-காய்கள்-பழங்கள் போன்றன.

பாடத்திட்டத்தின் பயன்கள் (Outcome)

இந்தப் பாடத்தினால் வேற்றுப்புல மாணவர்கள் தமிழகத்தில் பாமர மக்களிடமும் தமிழில் பேச முடியும். தமிழ் மொழியிலுள்ள சிறு சிறு படைப்புகளைப் பார்த்து இலக்கிய இன்பம் பெறமுடியும். தமிழகத்திலுள்ள சுற்றுலாத்தலங்களுக்கு வழிகாட்டி இன்றிப் போய் வருதல்.

பாட நூல்

தமிழ் – பகுதி 4 - சென்னைப் பல்கலைக்கழகம் அடிப்படைத் தமிழுக்குப் பாடத்திட்டங்கள் மட்டுமே வரையறுத்துள்ளது. அதை நூலாக வெளியிடவில்லை. எனவே, பாடநூல் இல்லை.

Reference book

தமிழ் – பகுதி 4 - சென்னைப் பல்கலைக்கழகம் வடிவமைத்த பாடத்திட்டங்கள் ஆகையால் குறிப்புதவிநூல் என்று தனியாக இல்லை. (Reference book not applicable).

SUBJECT: ADVANCE TAMIL- சிறப்புத்தமிழ்
SUBJECT CODE: TLT1C
YEAR/SEMESTER: I YEAR/I SEMESTER

பாடத்திட்டத்தின் நோக்கம் (Objective)

இப்பாடத்திட்டம்பள்ளிகளில் ஒரு சில வகுப்புகளில் தமிழைப் படித்து தமிழ் மொழியைமுழுமையாக அறிந்து கொள்ளாத கல்லூரிகளில் பிற மொழி கற்பவர்களுக்காக வடிவமைக்கப்படுகிறது. தமிழ் இலக்கியப்பகுதியும், தமிழிலக்கிய வரலாற்றுப்பகுதியும், மொழிப்பயிற்சியும் பாடமாக அமைகிறது. தமிழ் இலக்கிய இன்பத்தை உணரும் நோக்கிலும் இலக்கிய வளத்தை உணரும் நோக்கிலும் பாடத்திட்டம் உள்ளது.

பாடத்திட்டம் (SYLLABUS)
பாடப்பகுப்பு

I. இலக்கியம்
II. அதைச்சார்ந்ததமிழிலக்கியவரலாறு
III. மொழிப்பயிற்சி

அலகு -1 - நாட்டுப் புறப்பாடல்
1. **பஞ்சம். 2. மானம் விடிவதெப்போ?**

அலகு -2 - புனை கதை
1."கட்டை விரல்"-சி.என்.அண்ணாதுரை

அலகு -3- புதுக்கவிதை
1. ஆடிக்காற்றே-சிற்பி,
2. கடமையைச் செய்-மீரா,
3. இழந்தவர்கள்-அப்துல் ரகுமான்

அலகு - 4- மொழித்திறன்
1. **கலைச்சொல்லாக்கம்,**
2. **பொருந்தியசொல் தருதல்,**
3. **பிழை நீக்கி எழுதுதல்**

பாடத்திட்டத்தின் பயன்கள் (Outcome)

- **தமிழ் மொழியின் இலக்கியஇன்பத்தை உணர முடிகின்றது.**
- **சொல் வளம் பெற்று புது கலைச்சொல்படைக்க உதவுகின்றது.**

பாட நூல்

தமிழ் – பகுதி 4 - சென்னைப் பல்கலைக்கழகம் சிறப்புத் தமிழுக்குப் பாடத்திட்டங்கள் மட்டுமே வரையறுத்துள்ளது. அதை நூலாக வெளியிடவில்லை. எனவே, பாடநூல் என்று தனியாக இல்லை.

Reference book

தமிழ் – பகுதி 4 - சென்னைப் பல்கலைக்கழகம் வடிவமைத்த பாடத்திட்டங்கள் ஆகையால் குறிப்புதவிநூல் என்று தனியாக இல்லை. (Reference book not applicable)

NON-MAJOR ELECTIVE

SUBJECT:ENGLISH FOR COMPETITIVE EXAMINATIONS -PAPER
SUBJECT CODE : AG5AC
YEAR/SEMESTER:I YEAR/I SEM

OBJECTIVES:

· enable students to prepare for competitive examinations
· develop reasoning and analytical abilities
· enhance their vocabulary
· make learners read, comprehend and analyze short and long passages

LEARNING COMPONENTS:

UNIT 1:Verbal Reasoning Abilities
1.1 Logical Sequence of Words
1.2 Syllogisms
1.3 Analogy

UNIT 2: Vocabulary and Syntax
2.1 Form and Content words / word meaning, commonly confused words / expressions
2.2 Word Formation – affixes, compound words, one word substitutes
2.3 Unscramble words

UNIT 3: Grammar
3.1 Word Classes, Conversion , Concord
3.2 Conversion of sentences – kinds of sentences, active/ passive voice, direct/ indirect speech 3.3 Error correction

UNIT 4: Reading Comprehension
4.1 Reading Passages for Comprehension – I (short passages)
4.2 Reading Passages for Comprehension II (long passages)
4.3 Note making / summarising

UNIT 5: Writing
5.1 Para jumbling – sequencing sentences in the right order
5.2 Paraphrasing
5.3 Writing short paragraphs – Narration and Description.

LEARNING OUTCOMES:
By the end of the course, the students will be able to

- **Face competitive examinations confidently**
- **Reason and analyse general concepts**
- **Use words appropriately in context**
- **Read, comprehend, analyse and interpret different types of reading materials**

PROFESSIONAL ENGLISH- I

SUBJECT : ENGLISH FOR PHYSICAL SCIENCE
SUBJECT CODE :PZ1SA
YEAR/ SEMESTER: I YEAR/I SEM

COURSE OBJECTIVES:

- **To develop the language skills of students by offering adequate practice in professional contexts.**
- **To enhance the lexical, grammatical and socio-linguistic and communicative competence of first year students.**
- **To focus on developing students' knowledge of domain specific registers and the required language skills.**
- **To develop strategic competence that will help in efficient communication**

SYLLABUS

UNIT 1: COMMUNICATION Listening: Listening to audio text and answering questions - Listening to Instructions Speaking: Pair work and small group work. Reading: Comprehension passages –Differentiate between facts and opinion Writing: Developing a story with pictures. Vocabulary: Register specific - Incorporated into the LSRW tasks

UNIT 2: DESCRIPTION Listening: Listening to process description.-Drawing a flow chart. Speaking: Role play (formal context) Reading: Skimming/Scanning- Reading passages on products, equipment and gadgets. Writing: Process Description –Compare and Contrast Paragraph-Sentence Definition and Extended definition- Free Writing. Vocabulary: Register specific -Incorporated into the LSRW tasks.

UNIT 3: NEGOTIATION STRATEGIES Listening: Listening to interviews of specialists / Inventors in fields (Subject specific) Speaking: Brainstorming. (Mind mapping). Small group discussions (Subject- Specific) Reading: Longer Reading text. Writing: Essay Writing (250 words) Vocabulary: Register specific - Incorporated into the LSRW tasks

UNIT 4: PRESENTATION SKILLS Listening: Listening to lectures. Speaking: Short talks. Reading: Reading Comprehension passages Writing: Writing Recommendations Interpreting Visuals inputs Vocabulary: Register specific - Incorporated into the LSRW tasks

UNIT 5: CRITICAL THINKING SKILLS Listening: Listening comprehension-Listening for information. Speaking: Making presentations (with PPT- practice). Reading: Comprehension passages –Note making. Comprehension: Motivational article on Professional Competence, Professional Ethics and Life Skills) Writing: Problem and Solution essay– Creative writing –Summary writing Vocabulary: Register specific - Incorporated into the LSRW tasks

LEARNING OUTCOMES

- **Recognise their own ability to improve their own competence in using the language · Use language for speaking with confidence in an intelligible and acceptable manner · Understand the importance of reading for life.**
- **Read independently unfamiliar texts with comprehension**
- **Understand the importance of writing in academic life**
- **Write simple sentences without committing error of spelling or grammar (Outcomes based on guidelines in UGC LOCF – Generic Elective)**
- **NB: All four skills are taught based on texts/passages.**

II SEMESTER

SUBJECT :பொதுத் தமிழ்
SUBJECT CODE:LA12A
YEAR/SEMESTER: I YEAR/II SEM

பாடத்திட்டத்தின் நோக்கம்:-

காலந்தோறும் தமிழ் அடைந்துள்ள வளர்ச்சியும் பரந்து விரிந்து கிடக்கும் அதன் ஆழ அகலத்தையும் ஒரு பருந்து பார்வையில் நோக்கும் வகையில் பொதுத்தமிழ்ப் பாடப்பகுதி கட்டமைக்கப்பட்டுள்ளது.
பழந்தமிழ் இலக்கியங்களின் வாயிலாக அறம், பொருள், இன்பம் ஆகியவற்றைப் போதித்தல். பழந்தமிழ் இலக்கியங்களின் இலக்கியச் செறிவையும், சொல் வளங்களையும் உணர வைத்தல். பழந்தமிழ்ச் சொற்களின் அருமையைப் புரியவைத்து மொழி கலப்பின்றிப் பேசுவதன் அவசியத்தை வலியுறுத்தல். பழந்தமிழ் மக்களின் வாழ்வியலை எடுத்துரைத்தல். இவையே இப்பாடத்திட்டத்தின் நோக்கமாகும்.

பாடத்திட்டம்
(SYLLABUS)
I.இலக்கியம்
II.அதைச் சார்ந்த தமிழிலக்கிய வரலாறு
III.மொழிப் பயிற்சி

அலகு 1
1. நற்றிணை - 87, 88
2. குறுந்தொகை - 46, 88, 89
3. கலித்தொகை - 11 ஆம் பாடல் - "அரிதாய அறன் எய்தி..
அலகு 2
1. அகநானூறு - 86 ஆம் பாடல் (உழுந்து தலைபெய்த)
2. ஐங்குறுநூறு - கிள்ளைப்பத்து
3. பரிபாடல் -செவ்வேள் 5, கடுவன் இளவெயினார் (1 முதல் 10 வரிகள் – வெற்றி வேல்)
அலகு 3
1. புறநானூறு - 182, 192
2. பதிற்றுப்பத்து -காக்கைப்பாடினியார்,
நச்செள்ளையார் பாடல் (56, 57)
அலகு 4
1. பத்துப்பாட்டு - முல்லைப்பாட்டு
அலகு 5

1. திருக்குறள் - பொருட்பால் - 3 அதிகாரம்
(காலமறிதல், சுற்றந்தழால், கண்ணோட்டம்)
2. நாலடியார் - ஈகை (முதல் 5 பாடல்கள்)
II தமிழிலக்கிய வரலாறு
1. முச்சங்க வரலாறு, பதினெண்மேற்கணக்கு நூல்கள்
(எட்டுத்தொகை, பத்துப்பாட்டு)
2. பதினெண்கீழ்க்கணக்கு நூல்கள்
III மொழிப் பயிற்சி
1. இலக்கணக் குறிப்பு (வேற்றுமைத் தொகை, உவமைத் தொகை, பண்புத் தொகை,
உம்மைத் தொகை, அன்மொழித் தொகை.....வடிவம்)
[பத்தியிலிருந்து இலக்கணக்
குறிப்புகளைக் கண்டறிதல்]
2. ஒற்று மிகும் மிகா இடங்கள்
3. மரபுத் தொடர்கள் (தமிழ் மரபுத் தொடர்களைக்
கண்டறிதல்)

பாடத்திட்டத்தின் பயன்கள்

பழந்தமிழ் இலக்கியங்களின்வழியாக, அக்கால மக்களின் அகவுணர்வுகளையும் அக ஒழுக்கங்களையும் பண்பாட்டையும் உணர்ந்து கொள்ளுதல். பழந்தமிழ் இலக்கிய வாசிப்பின் வழி இயற்கையின் உன்னத மகத்துவத்தைப் புரியவைத்தல்.
தமிழ் இலக்கிய வளங்களின் வாயிலாகத் தமிழ்ப்பண்பாட்டை அடுத்த தலைமுறைக்குக் கொண்டுசெல்லுதல். மொழிவளத்தின் தேவையை வலியுறுத்துதல்.
மாணவர்கள் பிழையின்றி எழுத மொழிப்பயிற்சி உதவுகிறது.
இப்பாடத்திட்டம் மாணவர்கள் தங்கள் நடிப்பு திறனை வளர்க்கின்றது.
போட்டித்தேர்வுகளை எதிர்கொள்வதற்குத் தமிழ் இலக்கிய வரலாற்றுப்பகுதி மிகுந்த பயனுடையதாக அமைகிறது.

பாடநூல்
சென்னைப்பல்கலைக்கழகம் (University of Madras)

அடித்தளப் படிப்பு - பகுதி - I தமிழ்
முதலாம் மற்றும் இரண்டாம் பருவங்களுக்குரியது.
அனைத்துப் பட்டப்படிப்பு பிரிவுகளுக்கும் ஐந்தாண்டு ஒருங்குமுறை பட்ட மேற்படிப்புப் பிரிவுகளுக்கும் பொதுவானது.

தாள் -I - செய்யுள் திரட்டு

(Foundation Course - Part - Tamil
For I & II Semesters
Common to all undergraduate course and Five-Year Integrated postgraduate courses.
-
2021 onwards.)

Reference book
தமிழ் – பகுதி 1 - சென்னைப் பல்கலைக்கழகம்
வடிவமைத்த பாடத்திட்டங்கள்
ஆகையால் குறிப்புதவிநூல் என்று தனியாக இல்லை.
(Reference book not applicable)

SUBJECT: HINDI -II
SUBJECT CODE: CLE2G
YEAR/SEMESTER: I YR/ II SEMESTER

PAPER – II – ONE ACT PLAY, SHORT STORY &TRANSLATION
I. COURSE OBJECTIVES:
The objectives of the course is

1. To appreciate and analyse the dramatic elements in Hindi literature.
2. To understand the distinct features Hindi short stories and One Act Play.
3. To understand the importance and process of translation and the qualities of translators.
4. To understand the importance of vocabularies.

I . ONE ACT PLAY (Detailed Study): AATH EKANKI

Edited By: Devendra Raj Ankur, Mahesh Aanand
Vani prakashan, 4695, 21-A Dariyagunj,; New Delhi – 110 002

LESSONS PRESCRIBED :
1. Aurangazeb ki Aakhari Raat
2. Laksmi Ka Swagat
3. Basant Ritu ka Naatak
4. Bahut Bada Sawal
II. SHORT STORIES (Non- Detailed Study): SWARNA MANJARI
Edited by: Dr. Chitti. Annapurna
Rajeswari Publications
21/3, Mothilal Street, (Opp. Ranganathan Street),
T. Nagar, Chennai – 600 017.

LESSONS PRESCRIBED :
1. Mukthidhan
2. Mithayeewala
3. Seb aur Dev

4. Vivah ki Teen Kathayen
III. TRANSLATION PRACTICE : (English to Hindi)
BOOKS FOR REFERENCE :
1. Prayojan Moolak Hindi : Dr. Syed Rahamathulla

Poornima Prakashan, 4/7, Begum III
Street, Royapettah, Chennai – 14.
2. Anuvad Abhyas Part III Dakshin Bharat Hindi Prachar Sabha
T. Nagar, Chennai -17.

UNITISED SYLLABUS

UNIT – I

1. Auranzeb ki Aakhiri Raat
2. Mukthidhan
3. Practice of Annotation Writing
4. Practice of Summary and Literary evaluation Writing

UNIT – II

1. Laksmi ka Swagat
2. Mithayeewala
3. Practice of Annotation Writing
4. Practice of Summary and Literary evaluation Writing

UNIT-III

1. Basant Ritu ka Natak
2. Seb Aur Dev
3. Practice of Annotation Writing
4. Practice of Summary and Literary evaluation Writing

UNIT-IV

1. Bahut Bada Sawal
2. Vivah ki Teen Kathayen
3. Practice of Annotation Writing
4. Practice of Summary and Literary evaluation Writing

UNIT-V

1. Translation Practice. (English to Hindi)

II. COURSE OUTCOMES:

1. Understand the role of Hindi short stories and One Act Play in the development of the society.
2. Knowledge about the importance of cultural, social and moral responsibility of human beings.
3. Enculcating the habit of book reading to gain knowledge of vocabularies.
4. Understanding the importance of art of translation.

SUBJECT :Foundation Course: Paper Il-French II
SUBJECT CODE:CLK2T
YEAR/SEMESTER: I YEAR/II SEM

Title of the Paper : Prescribed text and grammar-Il

Objectives
In teaching French we aim to

- **provide the learners with a basic knowledge of grammar and gradually give them an insight**
- **into the culture and literature of France**
- **enable them to comprehend the nuances of the language so they are better equipped to**
- **express themselves in French**
- **discover another world , another people , another way of life.**
- **make them more accepting of people who differ from them**

Prescribed textbook:
> Régine Mérieux & Yves Loiseau, Latitudes 1, Paris, Didier, 2017 (Units 7-12 only).
Unité 7 - c'est où ?
Demander et indiquer une direction - localiser (près de, en face de …)
Unité 8 - N'oubliez pas !
Exprimer l'obligation ou l'interdit - Conseiller
Unité 9 - Belle vue sur la mer !
Décrire un lieu - situer - se situer dans le temps
Unité 10 - Quel beau voyage !
Raconter - décrire les étapes d'une action - exprimer l'intensité et la quantité - interroger
Unité 11 - oh! Joli!
Décrire quelqu'un - comparer - exprimer l'accord ou le désaccord - se situer dans le temps

UNIVERSITY OF MADRAS

FRENCH SYLLABUS WITH EFFECT FROM 2020-2021

Unité 12 - Et après ?
Parler de l'avenir - exprimer des souhaits - décrire quelqu'un
Outcome :
Learners are able
- to comprehend and express themselves well
- to have an interest to look into another world
- to improve communication skills
- to perform well in the University Exams .
Recommend text - Not applicable

SUBJECT : COMMUNICATIVE ENGLISH II
SUBJECT CODE:LZ12A
YEAR/SEMESTER: I YEAR/II SEM

LEARNING OBJECTIVES:

- **To give English language skill practice to students to enhance their English proficiency.**
- **To expose students to native speakers‟ spoken language to enable students to recognize native speakers‟ accent and language usage.**
- **To simulate real life situations in the classroom to practice real English dialogues and speeches to gain English language fluency.**
- **To give both silent and loud reading practice to students, to enhance their comprehension and English sound recognition skills**
- **To help students overcome their fear and to speak in English in front of their peers and teachers thus, build their self- confidence through various classroom activities and outdoor activities**

Unit I
1.Listening and Speaking
a .Listening and responding to complaints (formal situation).
b. Listening to problems and offering solutions (informal)
2.Reading and writing
Reading aloud (brief motivational anecdotes)
Writing a paragraph on aproverbial expression/motivational idea.
3Word Power/Vocabulary
a.Synonyms & Antonyms
4.Grammar in Context
●Adverbs Prepositions

Unit II
1.Listening and Speaking
a.Listening to famous speeches and poems
b.Making short speeches- Formal: welcome speech and vote of thanks.
Informal occasions- Farewell party, graduation speech
2.Reading and Writing
a.Writing opinion pieces (could be on travel, food, film / book reviews or on any contemporary topic)
b.Reading poetry
b.i.Reading aloud: (Intonation and Voice Modulation)
b.ii.Identifying and using figures of speech - simile, metaphor, personification etc.
3.Word Power
a.Idioms & Phrases
4.Grammar in Context Conjunctions and Interjections

Unit III
1.Listening and Speaking
a.Listening to Ted talks
b.Making short presentations – Formal presentation with PPT, analytical presentation of graphs and
Reports of multiple kinds
c. Interactions during and after the presentations 2. Reading and writing
a.Writing emails of complaint
b.Reading aloud famous speeches
3.Word Power
a.One Word Substitution
4.Grammar in Context: Sentence Patterns

Unit IV
1.Listening and Speaking
a.Participating in a meeting: face to face and online
b.Listening with courtesy and adding ideas and giving opinions during the meeting and making concluding remarks.
2.Reading and Writing
a.Reading visual texts – advertisements
b.Preparing first drafts of short assignments
3.Word Power
a.Denotation and Connotation
4.Grammar in Context: Sentence Types

Unit V
1.Listening and Speaking
a.Informal interview for feature writing
b.Listening and responding to questions at a formal interview
2.Reading and Writing
a.Writing letters of application
b.Readers' Theatre (Script Reading)
c.Dramatizing everyday situations/social issues through skits. (writing scripts and performing)
3.Word Power
a.Collocation
4.Grammar in Context: Working With Clauses

LEARNING OUTCOMES:
•The course seeks to develop the students' abilities in grammar, oral skills, reading, writing and study skills
•Students will heighten their awareness of correct usage of English grammar in writing and speaking
•Students will improve their speaking ability in English both in terms of fluency and
•comprehensibility
•Students will give oral presentations and receive feedback on their performance

•Students will increase their reading speed and comprehension of academic articles
•Students will improve their reading fluency skills through extensive reading

SUBJECT: OBJECT ORIENTED PROGRAMMING CONCEPTS USING C++
SUBJECT CODE: SU22A
YEAR/SEMESTER: I YEAR / II SEM

OBJECTIVES:

- **To inculcate knowledge on Object-oriented programming concepts using C++.**
- **To gain Knowledge on programming with C++.**

UNIT - I
Introduction to C++ - key concepts of Object-Oriented Programming –Advantages – Object Oriented Languages – I/O in C++ - C++ Declarations. Control Structures: - Decision Making and Statements: If ..else, jump, goto, break, continue, Switch case statements - Loops in C++ : for, while, do - functions in C++ - inline functions – Function Overloading.
UNIT - II
Classes and Objects: Declaring Objects – Defining Member Functions – Static Member variables and functions – array of objects –friend functions – Overloading member functions – Bit fields and classes – Constructor and destructor with static members.
UNIT- III
Operator Overloading: Overloading unary, binary operators – Overloading Friend functions – type conversion – Inheritance: Types of Inheritance – Single, Multilevel, Multiple, Hierarchal, Hybrid, Multi path inheritance – Virtual base Classes – Abstract Classes.
UNIT - IV
Pointers – Declaration – Pointer to Class, Object – this pointer – Pointers to derived classes and Base classes – Arrays – Characteristics – array of classes – Memory models – new and delete operators – dynamic object –Binding, Polymorphism and Virtual Functions.
UNIT - V
Files – File stream classes – file modes – Sequential Read / Write operations – Binary and ASCII Files – Random Access Operation – Templates – Exception Handling - String – Declaring and Initializing string objects – String Attributes – Miscellaneous functions.

COURSE OUTCOMES:

CO1	**The students will be able to understand the concept of objects and their features and represent it as a c++ program.**
CO2	**Able to write programs with the concept of files.**
CO3	**Able to understand what is exception. How to catch the exception and find a solution for the exception**

TEXT BOOK:

1. E. Balagurusamy, "Object-Oriented Programming with C++", TMH 2013, 7th Edition.

REFERENCE BOOKS:

1. Ashok N Kamthane, "Object-Oriented Programming with ANSI and Turbo C++", Pearson Education 2003.

2. Maria Litvin & Gray Litvin, "C++ for you", Vikas publication 2002.

WEB REFERENCES:

- **NPTEL & MOOC courses titled Object oriented programming concepts using C++**
- **https://alison.com/course/introduction-to-c-plus-plus-programming**

SUBJECT:PRACTICAL - II -C++ PROGRAMMING LAB
SUBJECT CODE: SU221
YEAR/SEMESTER: I YEAR / II SEM

OBJECTIVES:

- **To implement the various object-oriented programming concepts using C++.**
- **To implement the files manipulation using c++.**
- **To implement various templates using c++.**

LIST OF EXERCISES:

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

COURSE OUTCOMES:

CO1	To understand the structure and model of the C++ programming language.
CO2	To solve problems in C++ demonstrating Object Oriented Concepts.
CO3	To execute programs with read and write operations on files.

SUBJECT: Allied II - Mathematics
SUBJECT CODE:SM3AE
YEAR/SEMESTER : I YEAR/II SEM

COURSE OBJECTIVES:

1. Enable the students to know Integration using Recurrence relation and Fourier series for circular functions.
2. To understand Differential equations, Laplace transforms and its applications
3. To know the derivatives in Vector and Vector integration.

SYLLABUS

Unit 1

Integral Calculus:Bernoullis formula – Reduction formulae-, (m,n being positive integers), Fourier series for functions in (0,2 , (-).
Chapter 2: Section 2.7 & 2.9 , Chapter 4: Section 4.1.

Unit 2

Differential Equations:
Ordinary Differential Equations: second order non- homogeneous differential equations with constantcoefficients of the form ay" +by'+ cy = X where X is of the form and -Related problems only.
Partial Differential Equations: Formation, complete integrals and general integrals, four standard types and solving Lagrange's linear equation P p +Q q= R.
Chapter 5: Section 5.2.1, Chapter 6: Section 6.1 to 6.4

Unit 3:

Laplace Transforms: Laplace transformations of standard functions and simple properties, inverse Laplace transforms,Application to solution of linear differential equations up to second order- simple problems.
Chapter 7: Section 7.1.1 to 7.1.4& 7.2 to 7.3

Unit 4:

Vector Differentiation: Introduction, Scalar point functions, Vector point functions, Vector differential operatorGradient,Divergence, Curl, Solenoidal, irrotational, identities.
Chapter 8, Section 8.1 to 8.4.4

Unit 5:

Vector Integration:Line, surface and volume integrals, Gauss, Stoke's and Green's theorems (without proofs). Simple problems on these.
Chapter 8, Section 8.5 to 8.6.3.

COURSE OUTCOMES:

1. Students will be able to apply reduction formulae to evaluate integrals and to find Fourier series of a given periodic function.
2. Student will be able to solve differential equations and to apply Laplace transform to solve differential and integral equations.
3. To find derivatives of vector functions and to evaluate Line ,surface and Volume integrals using Greens, Stokes & Gauss divergence theorem and vertifying the same.

Content and treatment as in
Allied Mathematics, Volume I and II , P. Duraipandian and S. Udayabaskaran, S. Chand Publications.

Reference:-

1. S. Narayanan and T.K. Manickavasagam Pillai – Ancillary Mathematics, S. Viswanathan Printers, 1986, Chennai.
2. Allied Mathematics by Dr. A. Singaravelu, Meenakshi Agency.

e-Resources:

1.http://www.sosmath.com
http://www.analyzemath.com/Differential_Equations/applications.html

SUBJECT: BASIC TAMIL-அடிப்படைத்தமிழ்
SUBJECT CODE: NLT2D
YEAR/SEMESTER: I YEAR /II SEM
அடிப்படைத்தமிழ் - நோக்கும் கற்றல் பயன்பாடும்

பாடத்திட்டத்தின் நோக்கம் (Objective)

தமிழ்மொழியைப் பேசவும் எழுதவும் படிக்கவும் தெரியாத மாணவர்கள் அடிப்படைத்தமிழ் பாடம் படித்துப் பயன்பெறும் நோக்கில் பாடத்திட்டம் அமைகிறது. அண்டை மாநிலங்களிலிருந்தும் பிற நாடுகளிலிருந்தும் இளங்கலை, இளம் அறிவியல் பட்டம் பெறும் மாணவர்கள் தமிழ் நாட்டின் மாநில மொழியைப் பேசவும் எழுதவும் துணைபுரியும் வகையில் பாடத்திட்டம் வடிவமைக்கப்பட்டுள்ளது.

இம்மாணவர்கள் இரண்டாம் பருவத்தில் தமிழ் மொழியிலுள்ள சிறு சிறு இலக்கியப்பகுதிகளைப் படிப்பர். சிறு கதைகள், சுற்றுலாத்தலங்கள், தமிழ் இலக்கியங்களின் வரலாறு ஆகியவற்றைப் புரிந்துகொள்ளும் நோக்கில் பாடத்திட்டம் அமைகிறது.

பாடத்திட்டம் (SYLLABUS)
அலகு -1.
நீதி நூல்கள்
1. ஆத்திச் சூடி(1-12), 2. கொன்றை வேந்தன்(1-8),
3. திருக்குறள்(5)
1. அகர முதல …… (1), 2. செயற்கரிய …… (26), 3. மனத்துக்கண் …… (34), 4. கற்க கசடறக்……. (391), 5. எப்பொருள் ……. (423).

அலகு - 2.

1. **நீதிக் கதைகள பீர்பால் கதை, 2. பரமார்த்த குரு கதை.**

அலகு - 3.
அறிமுகம்
அ. தமிழ் இலக்கிய வரலாறு - இலக்கியங்கள் புலவர்கள்
ஆ.தமிழக வரலாறு - வரலாற்றுச் சின்னங்கள்- சுற்றுலாத்தலங்கள்- அலுவலகப் பெயர்கள்
இ.பழமொழிகள்.

பாடத்திட்டத்தின் பயன்கள் (Outcome)
தமிழ் இலக்கியத்தின் சிறப்பினையும் தமிழ் மொழியின் சிறப்பினையும் மொழிவளத்தையும்

அறிந்து கொள்ள உதவுகிறது. தமிழக மக்களின் பண்பாட்டுக்கூறுகளை உணர்ந்து கொள்ளுதல்

பாட நூல்

தமிழ் – பகுதி 4 - சென்னைப் பல்கலைக்கழகம் அடிப்படைத் தமிழுக்குப் பாடத்திட்டங்கள் மட்டுமே வரையறுத்துள்ளது. அதை நூலாக வெளியிடவில்லை. எனவே, பாடநூல் இல்லை.

Reference book

தமிழ் – பகுதி 4 - சென்னைப் பல்கலைக்கழகம் வடிவமைத்த பாடத்திட்டங்கள் ஆகையால் குறிப்புதவிநூல் என்று தனியாக இல்லை. **(Reference book not applicable)**

SUBJECT:ADVANCE TAMIL - சிறப்புத்தமிழ்– பகுதிIV
SUBJECT CODE: TLT2D
YEAR/SEMESTER:I YEAR/II SEM

பாடத்திட்டத்தின்நோக்கம் (Objective)
இப்பாடத்திட்டம் பள்ளிகளில் சிலவகுப்புகள் வரையில் மட்டுமே தமிழைப் படித்துக் கல்லூரிகளில் பிறமொழி கற்பவர்களுக்காக வடிவமைக்கப்படுகிறது.
இங்குபழந்தமிழ்ச்செய்யுள்கள்முதல்தற்காலபுதுக்கவிதைகள்வரைஉள்ளஒருசிலபகுதிகள்அமைந்துள்ளன. தமிழ் இலக்கியப்பகுதியும், தமிழிலக்கியவரலாற்றுப்பகுதியும், மொழிப்பயிற்சியும்பாடமாகஅமைகிறது. தமிழிலக்கியங்களின் காலவளர்ச்சியையும், காலங்கள் மாறினாலும் தமிழின் சிறப்புகள் குறையாமல் இருப்பதையும் சுட்டிக்காட்டுவதே இதன் நோக்கம் ஆகும்.

பாடத்திட்டம் (SYLLABUS)
பாடப்பகுப்பு
I. இலக்கியம்
II. அதைச்சார்ந்ததமிழிலக்கியவரலாறு
III.மொழிப்பயிற்சி

அலகு-1 - கட்டுரை
1. பெண்ணின்பெருமை-திரு.வி.க
அலகு -2- செய்யுள்
1. புறநானூறு–
அ. கெடுகசிந்தை-ஓக்கூர்மாசாத்தியார்,
ஆ. ஈன்றுபுறந்தருதல்-பொன்முடியார்,
இ. யாதும்ஊரே -கனியன்பூங்குன்றனார்
2. திருக்குறள் - வான்சிறப்புமுழுமையும்
3. சிலப்பதிகாரம் - மங்கலவாழ்த்துப்பாடல்
4. திருவாசகம் - வேண்டத்தக்கது
5. திருவாய்மொழி-உயர்வற
6. இரட்சண்யயாத்ரிகம் (சிலுவைப்பாடு)-பாடல்எண்-1,3.4
7. சீறாப்புராணம் - வானவர்க்கும்
8. பாரதியார்- நல்லதோர்வீணை
அலகு -3
இலக்கியவரலாறு - பாடம்தழுவியஇலக்கியவரலாறு
அலகு -4
மொழிபெயர்ப்பு -
ஆங்கிலப்பகுதியைத்தமிழாக்கம்செய்தல்
பாடத்திட்டத்தின்பயன்கள் (Outcome)

தமிழ்மொழி, தமிழ்இலக்கியத்தின்தொன்மையைஅறிதல்.
தமிழ்மக்களின்பண்பாட்டைக்காலவாரியாகஉணர்ந்துகொள்ளுதல்.
மொழிபெயர்ப்புத்துறையிலும்செயலாற்றமுடியும்.

பாடநூல்
தமிழ் – பகுதி 4 -
சென்னைப்பல்கலைக்கழகம்அடிப்படைத்தமிழுக்குப்
பாடத்திட்டங்கள்மட்டுமேவரையறுத்துள்ளது.
அதைநூலாகவெளியிடவில்லை. எனவே,
பாடநூல்என்றுதனியாகஇல்லை.

Reference book
தமிழ் – பகுதி 4 –
சென்னைப்பல்கலைக்கழகம்வடிவமைத்தபாடத்திட்டங்கள்
ஆகையால்குறிப்புதவிநூல்என்றுதனியாகஇல்லை. (Reference book not applicable)

NON-MAJOR ELECTIVE

SUBJECT:ENGLISH FOR COMPETITIVE EXAMINATIONS -PAPER II
SUBJECT CODE :AG5AD
YEAR/SEMESTER : I YEAR/II SEM

OBJECTIVES

- **enable students to prepare for competitive examinations**
- **enable learners to write coherently**
- **enable learners to write short paragraphs and long essays**

Course Components :

UNIT-1: Verbal Reasoning Abilities
1.1 Alpha –Numeric abilities
1.2 Cause and Effect
1.3 Character puzzles

UNIT-2: Vocabulary and Syntax
2.1 Idioms and Phrases,
2.2 Words reordering
2.3 Antonyms/ synonyms, cloze tests

UNIT-3: Grammar
3.1 Transformation of Sentences – Simple , compound, complex
3.2 Phrasal Verbs
3.3 Error correction

UNIT 4: Reading Comprehension
4.1 2Interpreting Passages
4.2 Interpreting graphs & tables
4. 3Interpretation of charts &maps

UNIT 5: Writing
5.1 Dialogue writing
5.2 Speech Writing
5.2 Essay Writing

Learning Outcomes
After completing this course, the learners will be able to

- **face competitive examinations confidently**
- **use words appropriately in context**
- **write long essays coherently**

PROFESSIONAL ENGLISH- II

SUBJECT: ENGLISH FOR PHYSICAL SCIENCE -II
SUBJECT CODE: PZ1SC
YEAR/SEMESTER: I YEAR /II SEM

OBJECTIVES:
The Professional Communication Skills Course is intended to help Learners in Arts and Science colleges,

- **Develop their competence in the use of English with particular reference to the workplace situation.**
- **Enhance the creativity of the students, which will enable them to think of innovative ways to solve issues in the workplace.**
- **Develop their competence and competitiveness and thereby improve their employability skills.**
- **Help students with research bent of mind develop their skills in writing reports and research proposals.**

SYLLABUS

Unit 1- Communicative Competence

Listening – Listening to two talks/lectures by specialists on selected subject specific topics - (TED Talks) and answering comprehension exercises (inferential questions)
Speaking: Small group discussions (the discussions could be based on the listening and reading passages- open ended questions
Reading: Two subject-based reading texts followed by comprehension activities/exercises
Writing: Summary writing based on the reading passages.

Unit 2 - Persuasive Communication

Listening: listening to a product launch- sensitizing learners to the nuances of persuasive communication
Speaking: debates – Just-A Minute Activities
Reading: reading texts on advertisements (on products relevant to the subject areas) and answering inferential questions
Writing: dialogue writing- writing an argumentative /persuasive essay.

Unit 3- Digital Competence

Listening to interviews (subject related)
Speaking: Interviews with subject specialists (using video conferencing skills)
Creating Vlogs (How to become a vlogger and use vlogging to nurture interests – subject related)
Reading: Selected sample of Web Page (subject area) Writing:
Creating Web Pages
Reading Comprehension: Essay on Digital Competence for Academic and Professional Life.

The essay will address all aspects of digital competence in relation to MS Office and how they can be utilized in relation to work in the subject area.

Unit 4 - Creativity and Imagination

Listening to short (2 to 5 minutes) academic videos (prepared by EMRC/ other MOOC videos on Indian academic sites – E.g. https://www.youtube.com/watch?v=tpvicScuDy0)
Speaking: Making oral presentations through short films – subject based Reading : Essay on Creativity and Imagination (subject based)
Writing – Basic Script Writing for short films (subject based)
Creating blogs, flyers and brochures (subject based)
Poster making – writing slogans/captions (subject based)

Unit 5- Workplace Communication & Basics of Academic Writing

Speaking: Short academic presentation using PowerPoint
Reading & Writing: Product Profiles, Circulars, Minutes of Meeting.
Writing an introduction, paraphrasing Punctuation (period, question mark, exclamation point, comma, semicolon, colon, dash, hyphen, parentheses, brackets, braces, apostrophe, quotation marks, and ellipsis)
Capitalization (use of upper case)

LEARNING OUTCOMES:

- **At the end of the course, learners will be able to,**
- **Attend interviews with boldness and confidence.**
- **Adapt easily into the workplace context, having become communicatively competent.**
- **Apply to the Research & Development organizations/ sections in companies and offices with winning proposals.**

UNIVERSITY OF MADRAS

ACADEMIC YEAR 2021-2022

BCA SYLLABUS – II YEAR

S.NO.	PART	SUBJECT NAME	CREDITS	MAX. MARKS		
SEMESTER III			**CREDITS**	**EXTERNAL MARKS**	**INTERNAL MARKS**	**TOTAL**
1	III	Core III: Data Structures	4	75	25	100
2	III	Core IV: Java programming	4	75	25	100
3	III	Core V: Computer Organization	4	75	25	100
4	III	Practical III : Data Structures using Java Lab	3	60	40	100
5	III	Allied III: Financial Accounting	5	75	25	100
6	IV	Soft Skill III	3	50	50	100
7	IV	Environmental Studies	Examination will be held in Semester IV			
		Total Credits	**23**			
SEMESTER IV			**CREDITS**	**EXTERNAL MARKS**	**INTERNAL MARKS**	**TOTAL**
1	III	Core VI: Open Source Technologies	4	75	25	100
2	III	Core VII: Computer Network	4	75	25	100
3	III	Core VIII : E-Commerce technologies	4	75	25	100
4	III	Practical IV : Open Source Technologies Lab	3	60	40	100
5	III	Allied IV: Cost and Management Accounting	5	75	25	100
6	IV	Soft Skill IV	3	50	50	100
7	IV	Environmental Studies	2	75	25	100
		Total Credits	**25**			

SEMESTER III

CORE – III SZ23A - DATA STRUCTURES II YEAR / III SEM

OBJECTIVES:

- To understand the concepts of ADTs
- To learn linear data structures-lists, stacks, queues
- To apply Tree and Graph structures
- To understand sorting, searching and hashing

UNIT - I

Abstract Data Types (ADTs)- List ADT-array-based implementation-linked list implementation-singly linked lists-circular linked lists-doubly-linked lists-applications of lists-Polynomial Manipulation- All operations- Insertion-Deletion-Merge-Traversal.

UNIT - II

Stack ADT-Operations- Applications- Evaluating arithmetic expressions – Conversion of infix to postfix expression-Queue ADT-Operations-Circular Queue- Priority Queue- deQueue-applications of queues.

UNIT - III

Tree ADT-tree traversals-Binary Tree ADT-expression trees-applications of trees-binary search tree ADT- Threaded Binary Trees-AVL Trees- B-Tree- B+ Tree – Heap-Applications of heap.

UNIT - IV

Definition- Representation of Graph- Types of graph-Breadth first traversal – Depth first traversal-Topological sort- Bi-connectivity – Cut vertex- Euler circuits-Applications of graphs.

UNIT - V

Searching- Linear search-Binary search-Sorting-Bubble sort-Selection sort-Insertion sort-Shell sort-Radix sort- Hashing-Hash functions-Separate chaining- Open Addressing-Rehashing-Extendible Hashing.

COURSE OUTCOMES:

CO1	Implement abstract data types for linear data structures.
CO2	Apply the different linear and non linear data structures to problem solutions.
CO3	Critically analyze the various sorting algorithms.

TEXT BOOKS:

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

REFERENCES:

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

WEB REFERENCES:

- NPTEL & MOOC courses titled Data Structures
- https://nptel.ac.in/courses/106106127/

CORE – IV SZ23B - JAVA PROGRAMMING II YEAR / III SEM

OBJECTIVES:

- To understand the concepts of Object Oriented Programming.
- To learn about the control structures, class with attributes and methods used in Java.

UNIT - I

Introduction to OOPS: Paradigms of Programming Languages – Basic concepts of Object Oriented Programming

– Differences between Procedure Oriented Programming and Object Oriented programming - Benefits of OOPs – Application of OOPs. Java: History – Java features – Java Environment – JDK – API. Introduction to Java: Types of java program – Creating and Executing a Java program – Java Tokens- Java Virtual Machine (JVM) – Command Line Arguments –Comments in Java program.

UNIT - II

Elements: Constants – Variables – Data types - Scope of variables – Type casting – Operators: Special operators – Expressions – Evaluation of Expressions. Decision making and branching statements- Decision making and Looping– break – labeled loop – continue Statement. Arrays: One Dimensional Array – Creating an array – Array processing – Multidimensional Array – Vectors – ArrayList – Advantages of Array List over Array Wrapper classes.

UNIT - III

Class and objects: Defining a class – Methods – Creating objects – Accessing class members – Constructors – Method overloading – Static members –Nesting of Methods – this keyword – Command line input. Inheritance: Defining inheritance –types of inheritance– Overriding methods – Final variables and methods – Final classes – Final methods - Abstract methods and classes – Visibility Control- Interfaces: Defining interface – Extending interface - Implementing Interface - Accessing interface variables. Strings: String Array – String Methods – String Buffer Class.

UNIT - IV

Packages: Java API Packages – System Packages – Naming Conventions –Creating & Accessing a Package – Adding Class to a Package – Hiding Classes. Exception Handling: Limitations of Error handling – Advantages of Exception Handling - Types of Errors – Basics of Exception Handling – try blocks – throwing an exception – catching an exception – finally statement. Multithreading: Creating Threads – Life of a Thread – Defining & Running Thread – Thread Methods – Thread Priority – Synchronization –Implementing Runnable interface – Thread Scheduling.

UNIT - V

I/O Streams: File – Streams – Advantages - The stream classes – Byte streams –Character streams. Applets: Introduction – Applet Life cycle – Creating & Executing an Applet –Applet tags in HTML – Parameter tag – Aligning the display - Graphics Class: Drawing and filling lines – Rectangles – Polygon – Circles – Arcs – Line Graphs – Drawing Bar charts AWT Components and Even Handlers: Abstract window tool kit – Event Handlers – Event Listeners – AWT Controls and Event Handling: Labels – Text Component – Action Event – Buttons – Check Boxes – Item Event – Choice– Scrollbars – Layout Managers- Input Events – Menus.

COURSE OUTCOMES:

CO1	Knowledge of the structure and model of the Java programming language.
CO2	Understand the basic principles of creating Java applications with GUI.
CO3	Demonstrate use of string and String Buffers, Develop multithreaded programs in Java.

TEXT BOOKS:

1. E. Balagurusamy, "*Programming with Java*", TataMc-Graw Hill, 5th Edition.
2. Sagayaraj, Denis, Karthick and Gajalakshmi, "*Java Programming for Core and advanced learners*", Universities Press (INDIA) Private Limited 2018.

REFERENCES:

1. Herbert Schildt, "*The complete reference Java*", TataMc-Graw Hill, 7th Edition.

WEB REFERENCES:

- NPTEL & MOOC courses titled Java
- https://nptel.ac.in/courses/106105191/

CORE – V SZ23C -COMPUTER ORGANIZATION II YEAR/III SEM

OBJECTIVES:

- To understand the basic organization of computers and the working of each component and CPU
- To bring the programming features of 8085 Microprocessor and know the features of latest microprocessors.
- To understand the principles of Interfacing I/O devices and Direct Memory accesses

UNIT - I

Data representation: Data types – Complements- fixed point and floating point representation other binary codes. Register Transfer and Microoperations: Register transfer language- Register transfer- Bus and Memory transfers – Arithmetic, logic and shift micro operations.

UNIT - II

Central processing unit: General register and stack organizations- instruction formats - Addressing modes- Data transfer and manipulation - program control- RISC - Pipelining - Arithmetic and instruction- RISC pipeline - Vector processing and Array processors.

UNIT - III

Microprocessor Architecture and its Operations - 8085 MPU - 8085 Instruction Set and Classifications. Programming in 8085: Code conversion - BCD to Binary and Binary to BCD conversions - ASCII to BCD and BCD to ASCII conversions - Binary to ASCII and ASCII to Binary conversions.

UNIT - IV

Programming in 8085:BCD Arithmetic - BCD addition and Subtraction - Multibyte Addition and Subtraction - Multiplication and Division. Interrupts: The 8085 Interrupt – 8085 Vectored Interrupts –

UNIT - V

Direct Memory Access(DMA)and 8257 DMA controller - 8255A Programmable Peripheral Interface. Basic features of Advanced Microprocessors - Pentium - I3 , I5 and I7.

COURSE OUTCOMES:

CO1	Describe the major components of a computer system and state their function and purpose
CO2	Describe the microstructure of a processor
CO3	Demonstrate the ability to program a microprocessor in assembly language.
CO4	Classify and describe the operation DMA and peripheral Interfaces.

TEXT BOOKS:

1. M.M. Mano, "Computer System architecture". Pearson, Third Edition, 2007
2. R. S. Gaonkar- "Microprocessor Architecture- Programming and Applications with 8085"- 5th Edition- Penram- 2009.
3. Tripti Dodiya & Zakiya Malek, "Computer Organization and Advanced Microprocessors", Cengage Learning, 2012.

REFERENCE BOOKS:

1. Mathur- "Introduction to Microprocessor"- 3rd Edition- Tata McGraw-Hill-1993.
2. P. K. Ghosh and P. R. Sridhar- "0000 to 8085: Introduction to Microprocessors for Engineers and Scientists"- 2nd Edition- PHI- 1995.

3. NagoorKani- “Microprocessor (8085) and its Applications”- 2nd Edition- RBA Publications- 2006.
4. V. Vijayendran- “Fundamentals of Microprocessors – 8085”- S. Viswanathan Pvt. Ltd.- 2008.

WEB REFERENCES:

- NPTEL & MOOC courses titled Computer organization
- https://nptel.ac.in/courses/106105163/
- https://nptel.ac.in/courses/106103068/

PRACTICAL – III SZ231 - DATA STRUCTURES USING JAVA LAB
II YEAR / III SEM

OBJECTIVES:

- To implement linear and non-linear data structures
- To understand the different operations of search trees
- To implement graph traversal algorithms
- To get familiarized to sorting and searching algorithms

LIST OF EXERCISES:

1. Write a Java programs to implement the List ADT using arrays and linked lists.
2. Write a Java programs to implement the following using a singly linked list. Stack ADT (b) Queue ADT
3. Write a java program that reads an infix expression, converts the expression to postfix form and then evaluates the postfix expression (use stack ADT).
4. Write a Java program to implement priority queue ADT.
5. Write a Java program to perform the following operations:
   (a) Insert an element into a binary search tree.
   (b) Delete an element from a binary search tree.
   (c) Search for a key element in a binary search tree.
6. Write a Java program to perform the following operations
   (a) Insertion into an AVL-tree
   (b) Deletion from an AVL-tree
7. Write a Java programs for the implementation of BFS for a given graph.
8. Write a Java programs for the implementation of DFS for a given graph.
9. Write a Java programs for implementing the following searching methods:
   (a) Linear search
   (b) Binary search.
10. Write a Java programs for implementing the following sorting methods:
    (a) Bubble sort
    (b) Selection sort
    (c) Insertion sort
    (d) Radix sort.

COURSE OUTCOMES:

CO1	Write functions to implement linear and non-linear data structure operations.
CO2	Suggest appropriate linear and non-linear data structure operations for solving a given problem.
CO3	Analyze various sorting methods.

ALLIED PAPER -III - SZ33A-FINANCIAL ACCOUNTING II YEAR/III SEM

OBJECTIVES

- To familiarize the students with knowledge about financial reporting standards
- To enable the students to understand the system of preparing financial statements of various types of organization
- To develop an awareness of depreciation and single entry
- To understand the accounting principles of Partnership Accounts.
- To enrich the students about Branch Accounting System
- To familiarize the concepts of Departmental Accounting
- To enable the students to understand the system of preparing financial statements for various types of organization

Unit-1: The Accounting structure: Basic accounting concepts and conversions – Accounting equation – Meaning of accounting – Groups interested in accounting information – trial balance, final accounts (emphasis to be given to important adjustments) – Rectification of errors – Suspense account

Unit-2: Depreciation accounting – Meaning of depreciation – Methods of providing depreciation – Fixed percentage on original cost – Fixed percentage on diminishing balance (including change in the method of depreciation) Single entry : Definition and salient features Statement of affairs method – Conversion method. Average due date – Account current and investment accounts

Unit-3: Branch Accounts: Debtors system – profit and Loss Accounts – Stock and debtors system – Distinction between wholesale profit and retail profit – Independent branch (foreign branch excluded) – Departmental Accounts: Basis for allocation of expenses – Inter departmental transfer at cost or selling price – Treatment of expenses which cannot be allocated.

Unit-4: Hire purchase and Instalment purchase: Meaning and legal position – Accounting aspects – Default and re-possession – Hire purchase trading account - Instalment system – Accounting aspect. Sale or Return: Meaning and legal position – Accounting procedure under different circumstances.

Unit-5 : Partnership Accounts: Section 13 of Indian Partnership Act – Fixed and fluctuating capital – Final accounts of firms – Admission of a partner – Retirement of a partner – Death of a partner – dissolution of partnership – Insolvency of a partner – (Garner Vs Murray) – Insolvency of all partners Gradual realization of assets and piecemeal distribution

Recommended Texts & Reference

1. Gupta R.L, Advanced Accountancy, S.Chand, Delhi.
2. Agarwala A.N, Higher Science of Accountancy, Kitab Mahal,Allahabad.

3. S.P. Jain and K.L. Narang, Financial Accounting

4. M.C.Shukla and T.S.Grawel, Adavnced Accounts(Vol. I)

5. Gillespie Accounting system, Procedure & methods, Prentice Hall India Ltd, New Delhi.

OUTCOMES

- Students will be aware of the various amendments in Financial reporting
- Students will be able to analyze and prepare financial statement of different types of organization
- They will be aware of the concepts in depreciation and single entry
- They will understand partnership accounting on admission, retirement and dissolution
- The students will have a knowledge about Branch accounting
- The students will become aware of departmental Accounting
- The students will understand the system of preparing financial statements.

SEMESTER IV

CORE - VI SZ24B - OPEN SOURCE TECHNOLOGIES II YEAR / IV SEM

OBJECTIVES:

- To provide a basic idea of Open source technology, their software development process to understand the role and future of open source software in the industry along with the impact of legal, economic and social issues for such software.

UNIT- I

Introduction – Why Open Source – Open Source –Principles, Standards Requirements, Successes – Free Software – FOSS – Internet Application Projects

UNIT- II

Open source – Initiatives, Principles, Methodologies, Philosophy, Platform, Freedom, OSSD, Licenses – Copy right, Copy left, Patent, Zero Marginal Technologies, Income generation opportunities, Internalization

UNIT- III

Case Studies – Apache, BSD, Linux, Mozilla (Firefox), Wikipedia, Joomla, GCC, Open Office.

UNIT- IV

Open Source Project –Starting, Maintaining –Open Source – Hardware, Design, Teaching & Media

UNIT- V

Open Source Ethics – Open Vs Closed Source – Government – Ethics – Impact of Open source Technology – Shared Software – Shared Source

COURSE OUTCOMES:

CO1	To recognize the benefits and features of Open Source Technology and to interpret, contrast and compare open source products among themselves
CO2	To design and develop open source projects.
CO3	Able to apply open source ethics in usage of any open source software

TEXT BOOK:

1. Kailash Vadera, Bhavyesh Gandhi, "*Open Source Technology*", Laxmi Publications Pvt Ltd 2012, 1st Edition.

REFERENCE BOOK:

1. Fadi P. Deek and James A. M. McHugh, "*Open Source: Technology and Policy*", Cambridge Universities Press 2007.

WEB REFERENCES:

- Coursera online course – Open Source Software Development Methods - https://www.coursera.org/learn/open- source-software-development-methods

CORE – VII SZ24A - COMPUTER NETWORK II YEAR / IV SEM

OBJECTIVES:

- To understand the concept of Computer network
- To impart knowledge about networking and inter networking devices

UNIT - I

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

UNIT - II

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

UNIT - III

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

UNIT - IV

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

UNIT - V

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

COURSE OUTCOMES:

CO1	Analyse different network models
CO2	Analyse and compare a number of data link, network and transport layer
CO3	Analysing key networking protocols and their hierarchical relationship in the conceptual model like TCP/IP and OSI

TEXT BOOK :

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

REFERENCE BOOKS:

1. Stallings, "*Data and Computer Communications*", Pearson Education 2012, 7th Edition.
2. B. A. Forouzan, "*Data Communications and Networking*", Tata McGraw Hill 2007, 4th Edition.
3. F. Halsall, "*Data Communications, Computer Networks and Open Systems*", Pearson Education 2008.
4. D. Bertsekas and R. Gallagher, "*Data Networks*", PHI 2008, 2nd Edition.
5. Lamarca, "*Communication Networks*", Tata McGraw Hill 2002.

WEB REFERENCES:

- NPTEL & MOOC courses titled Computer Networks
- https://nptel.ac.in/courses/106106091

CORE - VIII SZ24C - E-COMMERCE TECHNOLOGIES II YEAR / IV SEM

OBJECTIVES:

- To provide students with an overview and understanding of e-commerce with a specific emphasis on Internet Marketing.
- To explore the major issues associated with e-commerce-security, privacy, intellectual property rights, authentication, encryption, acceptable use policies, and legal liabilities.

UNIT - I

History of E-commerce and Indian Business Context: E-Commerce –Emergence of the Internet – Emergence of the WWW – Advantages of E-Commerce – Transition to E-Commerce in India – The Internet and India – E-transition Challenges for Indian Corporate. Business Models for E-commerce: Business Model – E-business Models Based on the Relationship of Transaction Parties - E-business Models Based on the Relationship of Transaction Types.

UNIT - II

Enabling Technologies of the World Wide Web: World Wide Web – Internet Client-Server Applications – Networks and Internets – Software Agents – Internet Standards and Specifications – ISP. e-Marketing :Traditional Marketing – Identifying Web Presence Goals – Online Marketing – E-advertising – E-branding.

UNIT - III

E-Security: Information system Security – Security on the Internet – E-business Risk Management Issues – Information Security Environment in India. Legal and Ethical Issues : Cybers talking – Privacy is at Risk in the Internet Age – Phishing – Application Fraud – Skimming – Copyright – Internet Gambling – Threats to Children.

UNIT - IV

e-Payment Systems: Main Concerns in Internet Banking – Digital Payment Requirements – Digital Token-based e-payment Systems – Classification of New Payment Systems – Properties of Electronic Cash – Cheque Payment Systems on the Internet – Risk and e-Payment Systems – Designing e-payment Systems – Digital Signature – Online Financial Services in India - Online Stock Trading.

UNIT - V

Information systems for Mobile Commerce: What is Mobile Commerce? – Wireless Applications –Cellular Network – Wireless Spectrum – Technologies for Mobile Commerce – Wireless Technologies –Different Generations in Wireless Communication – Security Issues Pertaining to Cellular Technology. Portals for E- Business: Portals – Human Resource Management – Various HRIS Modules.

COURSE OUTCOMES:

CO1	Obtain a general understanding of basic business management concepts.
CO2	Have complete knowledge about basic technical concepts relating to E-Commerce.
CO3	Obtain thorough understanding about the security issues, threats and challenges of E-Commerce.

TEXT BOOK:

1. P.T.Joseph, S.J., *"E-Commerce - An Indian Perspective*", PHI 2012, 4th Edition.

REFERENCE BOOKS:

1. David Whiteley , "*E-Commerce Strategy, Technologies and Applications*", Tata McGraw Hill, 2001.
2. Ravi Kalakota, Andrew B Whinston, "*Frontiers of Electronic Commerce*", Pearson 2006, 12th Impression.

WEB REFERENCES:

- https://www.docsity.com/en/e-commerce-notes-pdf-lecture-notes-university-level/2484734/
- https://magnetoitsolutions.com/blog/advantages-and-disadvantages-of-ecommerce
- https://www.researchgate.net/publication/320547139ECommerce_Merits_and_Demerits_A_Review_Paper

ALLIED - IV -SZ34A- COST AND MANAGEMENT ACCOUNTING II YEAR/IV SEM.

OBJECTIVES

- Explain the concept and role of cost accounting in the business management of manufacturing and non-manufacturing companies
- They will be able to monitor costs of raw materials, labour, transportation, administrative costs, overheads etc. in an industry.
- To acquire knowledge about meaning and functions of management accounting and to distinguish between management accounting and financial accounting and management accounting and cost accounting.
- To gain knowledge about marginal costing techniques.
- To Know about various types of budgets and the procedure involved in the preparation of various budget.

SYLLABUS

UNIT - I

Cost Accounting: Definition, Meaning and Objectives – Distinction between Cost and Financial Accounting. Elements of cost and preparation of cost sheets and tender. Management Accounting – Definition and objectives – Distinction between management and Financial Accounting.

UNIT - II

Stores Records – Purchase Order – Goods Received. Note – Bin Card – Stores Ledger – Purchase, Receipt and Inspection – Inventory Control – ABC Analysis – Economic Ordering Quality – Maximum, Minimum and Reordering levels – Methods of Pricing Issued.

UNIT - III

Labor: Importance of Labor Cost Control – Various Methods of Wage Payment – Calculation of Wages – Methods of Incentive for Schemes.

UNIT - IV

Overheads: Factory, Administration, Selling and Distribution of Overheads – Classification – Allocation and

Apportionment – Redistribution (Secondary Distribution) – Absorption of Overheads including ‘Machine Hour Rate.

UNIT - V

Marginal Costing: The Concept – Break Even Analysis – Break – Even Chart – Importance and assumptions - Application of Profit Volumes Ratio – Budget and Budgetary Control: Procedure and Utility – Preparation of Different types of Budget including Flexible Budget.

RECOMMENDED TEXTS AND REFERENCE:

1. Wheldon A.J., Cost Accounting and Costing Methods.
2. Iyengar S.P., Cost Accounting: Principles and Practice.

3. Bhar B.K., Cost Accounting: Methods and Problems.
4. Bigg W.W., Cost Accounts.
5. Prasad N.K., Cost Accounting: Principles and Problems.
6. Jain S.P. and Narang K.L., Advanced Cost Accounting.
7. Agarwal M., Theory and Practices of Cost Accounting.
8. Robert Anthony: Management Accounting: Text and Cases.
9. Mageshwari S.N., Principles of Management Accounting.

WEB REFERENCES:

- NPTEL & MOOC courses titled Cost and Management Accounting.
- https://pakaccountants.com/courses/managementaccounting/
- https://www.reed.co.uk/courses/diploma-in-cost-and-management-accounting/238067

OUTCOMES

- Express the place and role of cost accounting in the modern economic environment.
- Enables the students to identify the differences between management accounting and financial accounting and management accounting and cost accounting.
- To apply the marginal costing techniques in taking various managerial decisions.
- Help the students to prepare purchases budget, sales budget, overhead budget, labour budget, cash budget and flexible budget.

PRACTICAL - IV SZ241 - OPEN SOURCE TECHNOLOGIES LAB II YEAR / IV SEM

OBJECTIVES:

- To be aware of the various open source software available for different problem needs
- To be familiar with the usage of the software like installation and configuration

LIST OF EXERCISES:

1. Study and usage of Libre Office Suite – Writer, Calc& Impress
2. Text Processing with PERL
3. Simple Applications using PHP
4. Simple Applications using Python
5. Image editing using GIMP
6. Study and usage of Business Intelligence tools – BIRT, JMagallanes
7. Creation of network diagrams using GraphViz
8. Linux Installation
9. Software Configuration in Linux environment.
10. Version Control System using Git.

COURSE OUTCOMES:

CO1	Students must be able to use appropriate open source tools based on the nature of the problem
CO2	Students should be able to code and compile different open source software
CO3	Design and develop simple applications using PERL, PHP and Python

ENV4B – EVS II YEAR / IV SEM

OBJECTIVES:

- To sensitize students towards environmental concerns, issues, and impacts of climate change and related mitigation strategies.
- To create and disseminate knowledge to the students about environmental problems at local, regional and global scale.

Unit 1: Introduction to Environmental Studies

Multidisciplinary nature of environmental studies; Scope and importance; concept of sustainability and sustainable development.

Unit 2 : Ecosystem (2 lectures)

What is an ecosystem? Structure and function of ecosystem; Energy flow in an ecosystem:

Food chains, food webs and ecological succession, Case studies of the following ecosystem:

a) Forest ecosystem
b) Grassland ecosystem
c) Desert ecosystem
d) Aquatic ecosystem (ponds, stream, lakes, rivers, ocean, estuaries)

Unit 3: Natural Resources : Renewable and Non – renewable Resources (6 lectures) Land resources and landuse change: Land degradation, soil erosion and desertification. Deforestation : Causes and impacts due to mining, dam building on environment, forests, biodiversity and tribal populations.

Water : Use and over –exploitation of surface and ground water, floods, droughts, conflicts over water (international and inter-state).

Energy resources : Renewable and non renewable energy sources, use of alternate energy sources, growing energy needs, case studies.

Unit 4: Biodiversity and Conservation (8 lecturers)

Levels of biological diversity: genetics, species and ecosystem diversity, Biogeographic zones of India: Biodiversity patterns and global biodiversity hot spots India as a mega- biodiversity nation, Endangered and endemic species of India. Threats to biodiversity: Habitat loss, poaching of wildlife, man- wildlife conflicts, biological invasions; Conservations of biodiversity: In-situ and Ex-situ Conservation of biodiversity. Ecosystem and biodiversity services: Ecological, economic, social, ethical, aesthetic and Informational value.

Unit 5: Environmental Pollution (8 lecturers)

Environmental pollution: types, causes, effects and controls: Air, Water, soil and noise Pollution. Nuclear hazards and human health risks Solid waste management: Control measures of urban and industrial waste
Pollution case studies.

Unit 6: Environmental Policies & Practices (8 lecturers) Climate change, global warming, ozone layer depletion, acid rain and impacts on human communities and agriculture Environment Laws: Environment Protection Act, Air (Prevention & Control of Pollution) Act; Water (Prevention and Control of Pollution) Act; Wildlife Protection Act; Forest Conservation Act. International agreements: Montreal and Kyoto protocols and Convention on Biological Diversity (CBD). Nature reserves, tribal populations and rights, and human Wildlife conflicts in Indian context.

Unit 7: Human Communities and the Environment (7 lectures) Human population growth, impacts on environment, human health and welfare. Resettlement and rehabilitation of projects affected persons; case studies. Disaster management: floods, earthquake, cyclone and landslides. Environmental movements : Chipko, Silent Valley, Bishnois of Rajasthan. Environmental ethics : Role of Indian and other religions and cultures in environmental conservation. Environmental communication and public awareness, case studies(e.g. CNG Vehicles in Delhi)

Unit 8 : Field Work (6 lectures) Visit to an area to document environmental assets: river / forest/ flora/ fauna etc. Visit to a local polluted site – Urban / Rural/ Industrial/ Agricultural. Study of common plants, insects, birds and basic principles of identification. Study of simple ecosystem- pond, river, Delhi Ridge etc. (Equal to 5 Lectures)

COURSE OUTCOMES:

CO1	Acquired fundamental knowledge of different aspects of environment and local, regional and global environmental problems.
CO2	Acquired the knowledge and skills needed for the environmental design and management.
CO3	Analyse and determine pollution using Environmental Analytical Techniques, Biostatistics and Computational Techniques.

UNIVERSITY OF MADRAS

ACADEMIC YEAR 2021-2022

BCA SYLLABUS – III YEAR

SEMESTER V			CREDITS	EXTERNAL MARKS	INTERNAL MARKS	TOTAL
1	III	Core IX: Software Engineering	4	75	25	100
2	III	Core X : Operating System	4	75	25	100
3	III	Core XI: Relational Database Management System	4	75	25	100
4	III	Practical V: Operating System Lab	3	60	40	100
5	III	Practical VI : PL/SQL Lab	2	60	40	100
6	III	Elective I	5	75	25	100
7	IV	Value Education	2	75	25	100
		Total Credits	**24**			
SEMESTER VI			**CREDITS**	**EXTERNAL MARKS**	**INTERNAL MARKS**	**TOTAL**
1	III	Core XII: Web Design and Development	4	75	25	100
2	III	Core XIII: Data Mining	4	75	25	100
3	III	Core XIV: Mobile Application Development	4	75	25	100
4	III	Practical VII: Mobile Application Development Lab	3	60	40	100

5	III	Elective II	5	75	25	100
6	III	Mini Project	5	60	40	100
7	V	Extension Activities	1			
		Total Credits	**26**			
		Total credits (Core, Elective, SBS)	**143**			

Non Major Elective I - I Semester
Web Application Office Automation HTML
Non Major Elective II – II Semester
Web Application Lab Office Automation Lab HTML Lab
Elective I
Principles of Information Security Resource Management Techniques Multimedia and its Applications
Elective II
Software Project Management IOT and its Applications Data Analytics using R

SEMESTER V

SOFTWARE ENGINEERING

III YEAR / V SEM

OBJECTIVES:

- To introduce the software development life cycles
- To introduce concepts related to structured and object oriented analysis & design concepts
- To provide an insight into UML and software testing techniques

OUTCOMES:

- The students should be able to specify software requirements, design the software using tools
- Able to develop UML diagrams
- To write test cases using different testing techniques.

UNIT- I

Introduction – Evolution – Software Development projects – Emergence of Software Engineering. Software Life cycle models – Waterfall model – Rapid Application Development – Agile Model – Spiral Model

UNIT- II

Requirement Analysis and Specification – Gathering and Analysis – SRS – Formal System Specification

UNIT- III

Software Design – Overview – Characteristics – Cohesion & Coupling – Layered design – Approaches Function Oriented Design – Structured Analysis – DFD – Structured Design – Detailed design

UNIT- IV

Object Modeling using UML – OO concepts – UML – Diagrams – Use case, Class, Interaction, Activity, State Chart – Postscript

UNIT- V

Coding & Testing – coding – Review – Documentation – Testing – Black-box, White-box, Integration, OO Testing, Smoke testing.

TEXT BOOK:

1. Rajib Mall, "*Fundamentals of Software Engineering*", PHI 2018, 5th Edition.

REFERENCE BOOKS:

1. Roger S. Pressman, "*Software Engineering - A Practitioner's Approach*", McGraw Hill 2010, 7th Edition.
2. Pankaj Jalote, "*An Integrated Approach to Software Engineering*", Narosa Publishing House 2011, 3rd Edition.

WEB REFERENCES:

Ø NPTEL & MOOC courses titled Software Engineering

Ø https://nptel.ac.in/courses/106105182/

OPERATING SYSTEM III YEAR / V SEM

OBJECTIVES:

- To understand the fundamental concepts and role of Operating System.
- To learn the Process Management and Scheduling Algorithms
- To understand the Memory Management policies
- To gain insight on I/O and File management techniques

UNIT - I

Introduction: Views - Types of System - OS Structure – Operations - Services – Interface- System Calls- System Structure - System Design and Implementation. Process Management: Process - Process Scheduling - Inter-process Communication. CPU Scheduling: CPU Schedulers - Scheduling Criteria - Scheduling Algorithms.

UNIT - II

Process Synchronization: Critical- Section Problem - Synchronization Hardware Semaphores - Classical Problems of Synchronization - Monitors. Deadlocks: Characterization - Methods for Handling Deadlocks - Deadlock Prevention - Avoidance - Detection - Recovery.

UNIT - III

Memory Management: Hardware - Address Binding – Address Space - Dynamic Loading and Linking – Swapping – Contiguous Allocation - Segmentation - Paging – Structure of the Page Table.

UNIT - IV

Virtual Memory Management: Demand Paging - Page Replacement Algorithms - Thrashing. File System: File Concept -. Access Methods - Directory and Disk Structure - Protection - File System Structures - Allocation Methods - Free Space Management.

UNIT - V

I/O Systems: Overview - I/O Hardware - Application I/O Interface - Kernel I/O Subsystem - Transforming 1/0 Requests to Hardware Operations - Performance. System Protection: Goals - Domain - Access matrix. System Security: The Security Problem - Threats – Encryption- User Authentication.

OUTCOMES:

- Understand the structure and functions of Operating System
- Compare the performance of Scheduling Algorithms
- Analyze resource management techniques
- Identify the features of I/O and File handling methods

TEXTBOOK:

1. Abraham Silberschatz, Peter B Galvin, Gerg Gagne, "*Operating System Concepts*", Wiley India Pvt.Ltd. 2018, 9th Edition.

REFERENCES:

1. William Stallings, "*Operating Systems Internals and Design Princples*", Pearson, 2018, 9th Edition.
2. Andrew S. Tanenbaum, Herbert Bos, "*Modern Operating Systems*", Pearson 2014, 4th Edition.

WEB REFERENCES:

Ø NPTEL & MOOC courses titled Operating Systems
Ø https://nptel.ac.in/courses/106106144/

RELATIONAL DATABASE MANAGEMENT SYSTEM

III YEAR / V SEM

OBJECTIVES:

- Gain a good understanding of the architecture and functioning of Database Management Systems. Understand the use of Structured Query Language (SQL) and its syntax.
- Apply Normalization techniques to normalize a database.
- Understand the need of transaction processing and learn techniques for controlling the consequences of concurrent data access.

UNIT - I

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

.

UNIT - II

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

UNIT - III

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

UNIT - IV

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

UNIT - V

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

OUTCOMES:

- Describe basic concepts of database system
- Design a Data model and Schemas in RDBMS
- Able to design the database for the particular operation.
  Competent in use of SQL

- Analyze functional dependencies for designing robust Database

TEXT BOOK:

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

REFERENCE BOOKS:

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

WEB REFERENCES:

Ø NPTEL & MOOC courses titled Relational Database Management Systems
Ø https://nptel.ac.in/courses/106106093/
Ø https://nptel.ac.in/courses/106106095/

PRACTICAL - V OPERATING SYSTEM LAB

III YEAR / V SEM

OBJECTIVES:

- To learn Process management and scheduling.
- To understand the concepts and implementation of memory management policies.
- To understand the various issues in Inter Process Communication.

PROGRAM LIST:

1. Basic I/O programming.

To implement CPU Scheduling Algorithms:

2. Shortest Job First Algorithm.
3. First Come First Served Algorithm.
4. Round Robin and Priority Scheduling Algorithms.
5. To implement reader/writer problem using semaphore.
6. To implement Banker's algorithm for Deadlock avoidance. Program for page replacement algorithms:
7. First In First Out Algorithm.
8. Least Recently Used Algorithm.
9. To implement first fit, best fit and worst fit algorithm for memory management.
10. Program for Inter-process Communication.

OUTCOMES:

- Understand the process management policies and scheduling process by CPU.
- Analyze the memory management and its allocation policies.
- To evaluate the requirement for process synchronization.

PRACTICAL – VI PL/SQL LAB III YEAR / V SEM

OBJECTIVES:

- · Learn the various DDL and DML commands
- · Understand queries in SQL to retrieve information from data base
- · Understand PL/SQL statements: Exception Handling, Cursors, and Triggers.
- · Develop database applications using front-end and back-end tools.

LIST OF EXERCISES

1) DDL commands with constraints.

2) DML Commands with constraints.

3) SQL Queries: Queries, sub queries, Aggregate function

4) PL/SQL : Exceptional Handling

5) PL/SQL : Cursor

6) PL/SQL : Trigger

7) PL/SQL : Packages

8) Design and Develop Application for Library Management

9) Design and Develop Application for Student Mark Sheet Processing

10) Design and Develop Application for Pay Roll Processing

OUTCOMES:

- · Capable of designing the structure of the database.
- · Students are able to Update the database with queries and exception .
- · Design and Implement simple project with Front End and Back End.

ELECTIVE - I PRINCIPLES OF INFORMATION SECURITY

III YEAR / V SEM

OBJECTIVES:

- To learn how to determine security requirements that mesh effectively with your business objectives.
- To study about creating policies that work for your organization, and use technology to implement your policies.
- To prepare the students with the technical knowledge and skills needed to protect and defend computer systems.

UNIT - I

Protection versus security; aspects of security–data integrity, data availability, privacy; security problems, user authentication, Orange Book.

UNIT - II

Program threats, worms, viruses, Trojan horse, trap door, stack and buffer overflow; system threats- intruders; communication threats- tapping and piracy.

UNIT - III

Substitution, transposition ciphers, symmetric-key algorithms-Data Encryption Standard, advanced encryption standards, public key encryption - RSA; Diffie-Hellman key exchange, ECC cryptography, Message Authentication- MAC, hash functions.

UNIT - IV

Symmetric key signatures, public key signatures, message digests, public key infrastructures.

UNIT - V

Intrusion detection, auditing and logging, tripwire, system-call monitoring;

OUTCOMES:

- Students should be able to understand various security threats.
- Students will be able to understand the various types of virus,worms ect.
- Students should be able to understand various encryption algorithms.
- Able to design and create policies for secure software.

TEXT BOOKS:

1. William Stallings, “Cryptography and Network Security”, Pearson Education March 2013, 6 th Edition,

2. C. Pfleeger and SL Pfleeger, “Security in Computing”, Prentice Hall of India 2007, 3rd Edition.

REFERENCE BOOK:

1. D. Gollmann, “Computer Security”, John Wiley and Sons NY 2002.

WEB REFERENCES:

NPTEL & MOOC courses titled Information security

https://nptel.ac.in/courses/106106129/

PART-IV VALUE EDUCATION III YEAR / V SEM

OBJECTIVES:

● Value are socially accepted norms to evaluate objects, persons and situations that form part

and parcel of sociality.

● Knowledge of the values are inculcated through education.

● It contributes in forming true human being, who are able to face life and make it meaningful

UNIT I: Value education-its purpose and significance in the present world – Value system – The role of culture and civilization – Holistic living – balancing the outer and inner – Body, Mind and Intellectual level – Duties and responsibilities.

UNIT II: Salient values for life – Truth, commitment, honesty and integrity, forgiveness and love, empathy and ability to sacrifice, care, unity, and inclusiveness, Self esteem and self confidence, punctuality – Time, task and resource management – Problem solving and decision making skills –Interpersonal and Intra personal relationship – Teamwork – Positive and creative thinking.

UNIT III: Human Rights – Universal Declaration of Human Rights – Human Rights violations – National Integration – Peace and non-violence – Dr.A P J Kalam's ten points for enlightened citizenship – Social Values and Welfare of the citizen – The role of media in value building.

UNIT IV: Environment and Ecological balance – interdependence of all beings – living and non-living. The binding of man and nature – Environment conservation and enrichment.

UNIT V: Social Evils – Corruption, Cyber crime, Terrorism – Alcoholism, Drug addiction – Dowry –Domestic violence – untouchability – female infanticide – atrocities against women – How to tackle them.

Reference Book:

1. M.G. Chitakra: Education and Human Values, A.P.H. Publishing Corporation, New Delhi, 2003.

2. Chakravarthy, S.K: Values and ethics for Organizations: Theory and Practice, Oxford University Press, New Delhi, 1999.

3. Satchidananda, M.K: Ethics, Education, Indian Unity and Culture, Ajantha Publications, Delhi, 1991

SEMESTER VI

CORE – XII WEB DESIGN AND DEVELOPMENT III YEAR / VI SEM

OBJECTIVES:

- To understand Web based programming and scripting languages.
- To learn the basic web concepts and to create rich internet applications that use most recent client-side programming technologies.
- To learn the basics of HTML, DHTML, XML, CSS, Java Script and AJAX.

UNIT I:

HTML: HTML-Introduction-tag basics- page structure-adding comments working with texts, paragraphs and line break. Emphasizing test- heading and horizontal rules-list-font size, face and color-alignment-links-tables-frames

UNIT II:

Forms & Images Using Html: Graphics: Introduction-How to work efficiently with images in web pages, image maps, GIF animation, adding multimedia, data collection with html forms textbox, password, list box, combo box, text area, tools for building web page front page

UNIT III:

XML & DHTML: Cascading style sheet (CSS)-what is CSS-Why we use CSS-adding CSS to your web pages-Grouping styles-extensible markup language (XML). Dynamic HTML: Document object model (DCOM)-Accessing HTML & CSS through DCOM Dynamic content styles & positioning-Event bubbling-data binding.

UNIT IV:

JavaScript : Client side scripting, What is JavaScript, How to develop JavaScript, simple JavaScript, variables, functions, conditions, loops and repetition, Advance script, JavaScript and objects, JavaScript own objects, the DOM and web browser environments, forms and validations

UNIT V:

Ajax: Introduction, advantages & disadvantages, Purpose of it, ajax based web application, alternatives of ajax Java Script & AJAX: Introduction to array-operators, making statements-date & time-mathematics-strings-Event handling[1]form properties. AJAX. Introduction to jQuery and AngularJS.

OUTCOMES:

- Ability to Develop and publish Web pages using Hypertext Markup Language (HTML).
- Ability to optimize page styles and layout with Cascading Style Sheets (CSS).
- Ability to Understand, analyze and apply the role of languages to create a capstone
- Website using client-side web programming languages like HTML, DHTML, CSS, XML, JavaScript, and AJAX.

TEXT BOOKS:

1. Pankaj Sharma, “Web Technology”, Sk Kataria & Sons Bangalore 2011.(UNIT I, II, III & IV).

2. Mike Mcgrath, “Java Script”, Dream Tech Press 2006, 1st Edition. (UNIT V: JAVASCRIPT)

3. Achyut S Godbole & Atul Kahate, “Web Technologies”, 2002, 2nd Edition. (UNIT V: AJAX)

REFERENCE BOOKS:

1. Laura Lemay, Rafe Colburn , Jennifer Kyrnin, “Mastering HTML, CSS & Javascript Web Publishing”, 2016.

2. DT Editorial Services (Author), “HTML 5 Black Book (Covers CSS3, JavaScript, XML, XHTML, AJAX, PHP,

3. jQuery)”, Paperback 2016, 2nd Edition.

4. C. Xavier, “World Wide Web Design with HTML”, TMH Publishers 2001.

5. Wendy Willard, “A Beginners Guide HTML”, Tata McGraw Hill 2009, 4th Edition.

WEB REFERENCES:

- NPTEL & MOOC courses titled Web Design and Development.
- https://www.udemy.com/topic/web-design/

CORE - XIII DATA MINING III YEAR / VI SEM

OBJECTIVES:

- To learn about data mining Concepts
- To study the different data mining techniques
- To study association and classification algorithms.
- To understand the working of association rules.

UNIT - I

Basic Data Mining Tasks – Data Mining Versus Knowledge Discovery in Data Bases – Data Mining Issues – Data Mining Matrices – Social Implications of Data Mining – Data Mining from Data Base Perspective.

UNIT - II

Data Mining Techniques – a Statistical Perspective on data mining – Similarity Measures – Decision Trees – Neural Networks – Genetic Algorithms.

UNIT - III

Classification: Introduction – Statistical – Based Algorithms – Distance Based Algorithms – Decision.

UNIT - IV

Clustering Tree – Based Algorithms – Neural Network Based Algorithms – Rule Based Algorithms – Combining Techniques: Introduction – Similarity and Distance Measures – Outliers – Hierarchical Algorithms. Partitioned Algorithms.

UNIT - V

Association Rules: Introduction - Large Item Sets – Basic Algorithms – Parallel & Distributed Algorithms – Comparing Approaches – Incremental Rules – Advanced Association Rules Techniques – Measuring the Quality of Rules.

OUTCOMES:

- To have knowledge in Data mining concepts
- To apply Data mining concepts in different fields
- Able to select appropriate data mining algorithms that suit the particular application.
- Able to find interesting associations and relationships among large sets of data items.

TEXT BOOK:

1. Jiawei Han & Micheline Kamber, “Data Mining Concepts & Techniques”, 2011, 3

rd Edition.

REFERENCE BOOK:

1. Margaret H.Dunbam, “Data Mining Introductory and Advanced Topics”, Pearson Education 2003.

WEB REFERENCES:

NPTEL & MOOC courses titled Data Mining

https://nptel.ac.in/courses/106105174/

CORE - XIV MOBILE APPLICATION DEVELOPMENT III YEAR / VI SEM

OBJECTIVES:

- To make the student understand the basic concepts of mobile application development.
- To learn about Characteristics of mobile applications, User-interface design, basics of graphics and multimedia.
- To gain knowledge about testing and publishing of Android application

UNIT - I

Mobile Application Development - Mobile Applications and Device Platforms - Alternatives for Building Mobile Apps -Comparing Native vs. Hybrid Applications -The Mobile Application Development Lifecycle-The Mobile Application Front-End-The Mobile Application Back-End-Key Mobile Application Services-What is Android[1]Android version history-Obtaining the Required Tools- Launching Your First Android Application-Exploring the IDE-Debugging Your Application-Publishing Your Application

UNIT - II

Understanding Activities-Linking Activities Using Intents-Fragments-Displaying Notifications- Understanding the Components of a Screen-Adapting to Display Orientation-Managing Changes to Screen Orientation- Utilizing the Action Bar-Creating the User Interface Programmatically Listening for UI Notifications

UNIT - III

Using Basic Views-Using Picker Views -Using List Views to Display Long Lists-Understanding Specialized Fragments - Using Image Views to Display Pictures -Using Menus with Views-Using WebView- Saving and Loading User Preferences-Persisting Data to Files-Creating and Using Databases.

UNIT - IV

Sharing Data in Android-Creating Your Own Content Providers -Using the Content Provider-SMS Messaging -Sending Email-Displaying Maps- Getting Location Data- Monitoring a Location.

UNIT - V

Consuming Web Services Using HTTP-Consuming JSON Services- Creating Your Own Services - Binding Activities to Services -Understanding Threading .

OUTCOMES:

- To explain the basics of mobile application development
- Develop Android applications with User interface, networking and animation.
- Use simulator tools to test and publish the application.

TEXT BOOK:

1. Jerome DiMarzio, “Beginning Android Programming with Android Studio”, 4

thEdition.

REFERENCE BOOKS:

1. Dawn Griffiths, David Griffiths, “Head First Android Development: A Brain-Friendly Guide”, 2017.

2. Neil Smyth , “Android Studio 3.0 Development Essentials: Android”, 8

th Edition.

3. Pradeep Kothari, “Android Application Development (With Kitkat Support)”, Black Book 2014.

WEB REFERENCES:

https://developer.android.com/guide

https://en.wikipedia.org/wiki/Android_10

Develop App for Free

https://flutter.dev/

http://ai2.appinventor.mit.edu

https://en.wikipedia.org/wiki/Android_version_history

https://aws.amazon.com/mobile/mobile-application-development/ (Unit 1)

https://en.wikipedia.org/wiki/Mobile_app_development

PRACTICAL - VII **MOBILE APPLICATION DEVELOPMENT LAB** **I YEAR / VI EM**

OBJECTIVES:

- To give overall view of Mobile application development
- To learn about developing Android applications using Graphical user interface
- To gain knowledge about Developing and Publishing Android application which can use Location and network services

Exercises

1. Develop an application that finds greatest among three numbers using GUI Components

2. Develop an application to display your personal details using GUI Components

3. Develop an application that uses the radio button

4. Develop an application that uses the image button

5. Develop an application that uses Alert Dialog Box

6. Develop an application that uses Layout Managers.

7. Develop an application that uses audio mode (NORMAL, SILENT, VIBRATE)

8. Develop an application that uses to send messages from one mobile to another mobile.

9. Develop an application that uses to send email

10. Develop an application for mobile calls.

11. Develop an application for Student Mark sheet processing

12. Develop an application for Login Page in Database.

13. Develop an application for Google map locator (optional)

OUTCOMES:At the end of the course, the student should be able to:

- Use Emulator tools to design and develop applications
- Able to Develop and Publish Android applications using Graphical user interface
- Able to Develop and Publish Android application which can use Location and network services

WEB REFERENCES: Develop the App online

https://flutter.dev/

http://ai2.appinventor.mit.edu

ELECTIVE - II IOT AND ITS APPLICATIONS III YEAR / VI SEM

OBJECTIVES:

- To understand the concepts of Internet of Things and the application of IoT.
- To Determine the Market Perspective of IoT.
- To Understand the vision of IoT from a global context

UNIT - I

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

UNIT - II

M2M to IoT – A Basic Perspective– Introduction, Some Definitions, M2M Value Chains, IoT Value Chains, An emerging industrial structure for IoT, The international driven global value chain and global information monopolies. M2M to IoT-An Architectural Overview– Building an architecture, Main design principles and needed capabilities, An IoT architecture outline, standards considerations.

UNIT - III

IoT Architecture -State of the Art – Introduction, State of the art, Architecture. Reference Model- Introduction, Reference Model and architecture, IoT reference Model, IoT Reference Architecture- Introduction, Functional View, Information View, Deployment and Operational View, Other Relevant architectural views.

UNIT - IV

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

UNIT - V

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

OUTCOMES:

After learning the course, the student able to:

- 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

TEXT BOOK:

1. Vijay Madisetti and ArshdeepBahga, “Internet of Things: (A Hands-on Approach)”, Universities Press (INDIA) Private

Limited 2014, 1st Edition.

REFERENCE BOOKS:

1. Michael Miller, “The Internet of Things: How Smart TVs, Smart Cars, Smart Homes, and Smart Cities

AreChanging the World”, kindle version.

2. Francis daCosta, “Rethinking the Internet of Things: A Scalable Approach to Connecting Everything”, Apress

Publications 2013, 1st Edition,.

3. WaltenegusDargie, ChristianPoellabauer, "Fundamentals of Wireless Sensor Networks: Theory and Practice”

4..CunoPfister, “Getting Started with the Internet of Things”, O‟Reilly Media 2011.

WEB REFERENCES:

https://github.com/connectIOT/iottoolkit

https://www.arduino.cc/

http://www.zettajs.org/

PRACTICAL – VIII MINI PROJECT III YEAR / VI SEM

OBJECTIVES:

- The aim of the mini project is that the student has to understand the real time software development environment.
- The student should gain a thorough knowledge in the problem, he/she has selected and the language / software, he/she is using.

Project planning:

The B.Sc (Computer Science / Software Application)/BCA Major Project is an involved exercise, which has to be planned well in advance. The topic should be chosen in the beginning of final year itself. Related reading training and discussions of first internal project viva voce should be completed in the first term of final year.

I .Selection of the project work

Project work could be of three types.

a) Developing solution for real life problem

In this case a requirement for developing a computer-based solution already exists and the different stages of system development life cycle is to be implemented successfully. Examples are accounting software for particular organization,computerization of administrative function of an organization, web based commerce etc.

b) System Software Project

Projects based on system level implementation. An example is a Tamil language editor with spell checker, compiler design.

b) Research level project

These are projects which involve research and development and may not be as a structured and clear cut as in the above case.

Examples are Tamil character recognition, neural net based speech recognizer etc. This type of projects provides more challenging opportunities to students.

II .Selection of team

To meet the stated objectives, it is imperative that major project is done through a team effort. Though it would be ideal to select the team members at random and this should be strongly recommended, due to practical consideration students may also be given the choice of forming themselves into teams with three members. A team leader shall be selected. Team shall

maintain the minutes of meeting of the team members and ensure that tasks have been assigned to every team member in writing. Team meeting minutes shall form a part of the project report. Even if students are doing project as groups, each one must independently take different modules of the work and must submit the report.

III. Selection of Tools

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

IV. Project management

Head of the Department / Principal of the college should publish the list of student's project topic, internal guide and external organization and teams agreed before the end of July. Changes in this list may be permitted for valid reasons and shall be considered favorably by the Head of the department / Principal of the college any time before commencement of the project.

Students should submit a fortnightly report of the progress, which could be indication of percentage of completion of the project work. The students should ideally keep a daily activity book. Team meeting should be documented and same should be submitted at the end of the project work.

V .Documentation

Three copies of the project report must be submitted by each student (one for department library, one for the organization where the project is done and one for the student himself/herself). The final outer dimensions of the project report shall be 21cm X 30 cm. The color of the flap cover shall be light blue. Only hard binding should be done. The text of the report should be set in 12 pt, Times New Roman, 1.5 spaced.

Headings should be set as follows: CHAPTER HEADINGS 16 pt,

Arial, Bold, All caps, Centered.

1. Section Headings 14 pt Bookman old style, Bold, Left adjusted.

1.1 Section Sub-heading 12 pt, Bookman old style.

Title of figures tables etc are done in 12 point, Times New Roman, Italics, centered.

Content of the Project should be relevant and specify particularly with reference to the work. The report should contain the requirement specification of the work, Analysis, Design, Coding, testing and Implementation strategies done.

• Organizational overview (of the client organization, where applicable)

• Description of the present system

• Limitations of the present system

• The Proposed system - Its advantages and features

• Context diagram of the proposed system

• Top level DFD of the proposed system with at least one additional level of expansion

• Program List (Sample code of major functions used)

• Files or tables (for DBMS projects) list. List of fields or attributes (for DBMS projects) in each file or table.

• Program – File table that shows the files/tables used by each program and the files are read, written to, updated, queried or reports were produced from them.

• Screen layouts for each data entry screen.

• Report formats for each report.

Some general guidelines on documentation are:

1. Certificate should be in the format: ”Certified that this report titled…….is a bonafide record of the

project work done by Sri/ Kum …….under our supervision and guidance, towards partial fulfillment

of the requirement for award of the Degree of B.Sc Computer Science/BCA of XXX College” with dated signature of

internal guide, external guide and also Head of the Department/ College.

2. If the project is done in an external organization, another certificate on the letterhead of the organization is required:

“Certified that his/her report titled …….is a bonafide record of the project work done by

Sri/Kum…….under my supervision and guidance, at the ……..department of……

(Organization) towards partial fulfillment of the requirement for the award of the Degree of B.Sc (Computer

Science)/BCA of XXX College.

3. Page numbers shall be set at right hand bottom, paragraph indent shall be set as 3.

4. Only 1.5 space need be left above a section or subsection heading and no space may be left after them.

5. References shall be IEEE format (see any IEEE magazine for detail) While doing the project keep note of all books you refer, in the correct format and include them in alphabetical order in your reference list.

VI. Project Evaluation:

Internal Assessment

There shall be six components that will be considered in assessing a project work with weightage as indicated.

1. Timely completion of assigned tasks as evidenced by team meeting minutes 20%

2. Individual involvement, team work and adoption of industry work culture 10%

3. Quality of project documentation (Precision, stylistics etc) 10%

4. Achievement of project deliverables 20%

5 Effective technical presentation of project work 10%

6. Viva 30%

Based on the above 6 components internal mark (10) can be awarded.

External Assessment

Dissertation/Project submitted at the end of third year shall be valued by two examiners appointed by the Controller for the conduct of practical exam. The board of examiners shall award 40 marks based on the following components.

1. Achievement of project deliverables - 15 Marks

2. Effective technical presentation of project work - 10 Marks

3. Project Viva - 15 Marks

There shall be a common written examination conducted for all the candidates in each group together for a minimum of 10 minutes.

(i) Requirement Specification of Project

(ii) Design of Project

(iii) Testing and Implementation of Project

OUTCOMES :

- Able to develop different kinds of software
- Able to apply the features of the language chosen for problem solving
- Able to demonstrate the processes involved in various stages project development

Procedure for Awarding Internal Marks

Course	Particulars	Marks
Theory Papers	Tests (best 2 out of 3)	10
	Attendance	05
	Seminars	05
	Assignments	05
	Total	**25**

Course	Particulars	Marks
Practical Papers	Tests (best 2 out of 3)	30
	Attendance	05
	Record work	05
	Total	**40**

HEAD OF THE DEPARTMENT PRINCIPAL

ANNA ADARSH COLLEGE FOR WOMEN

Department of BCA – Shift II

Course Handout

ANNA ADARSH COLLEGE FOR WOMEN

Department of BCA – Shift II

Course Objective:

- Provide strong foundations in fundamentals of Computer Science and applications; interdisciplinary courses and electives for widening the domain expertise.
- Design and develop software based solutions for real world problems, serving effectively to the requirements of computer field and Society
- Attain sufficient knowledge related to computer domains, possesses technical, soft and hard skills and apply them effectively in team work
- Empower the students with competencies in creative thinking and problem solving, interpersonal communication and managerial skills.

Course Outcome:

- After Completion of the course, the students are expected to understand the basic principles and concepts of Computer applications and integrate the knowledge gained in Computer application domain with practical needs of the society and be an ethically and socially responsible Computer Application Professional.
- Explore emerging technologies in diverse areas of Computer Application and inculcate skills for successful career, entrepreneurship and higher studies.
- Ability to apply the concepts of Computer and practices via emerging technologies and Software development tools.

ANNA ADARSH COLLEGE FOR WOMEN

Department of BCA – Shift II

Faculty Details

S.No.	Staff Name	Qualification	Designation
1.	Dr.R.Anandha Lakshmi	M.Sc., M.Phil., Ph.D	Head & Assistant Professor
2.	Dr.K.Madhumathi	MCA., M.Phil., Ph.D	Assistant Professor
3.	Dr.N.Geethalakshmi	MCA., M.Phil., Ph.D, SET	Assistant Professor
4.	Ms.C.Vanisri	M.Sc., M.Phil., SET	Assistant Professor
5.	Dr.D.Seethalakshmi	M.Sc.,MCA, M.Phil., Ph.D	Assistant Professor
6.	Ms.M.Maheshwari	M.Sc., M.Phil.,	Assistant Professor

UNIVERSITY OF MADRAS

BCA

SYLLABUS

2020-21

S.NO.	PART	SUBJECT NAME	CREDITS	MAX. MARKS		
SEMESTER I				**EXTERNAL MARKS**	**INTERNAL MARKS**	**TOTAL**
1	I	Tamil/ Other languages – I	3	75	25	100
2	II	English – I	3	75	25	100
3	III	Core I : Problem Solving using Python	4	75	25	100
4	III	Practical I: Problem Solving using Python Lab	2	60	40	100
5	III	Allied I: Mathematics I	5	75	25	100
6	IV	Basic Tamil/Advanced Tamil/Non Major Elective I	2	75	25	100
7	IV	Soft Skill I	3	50	50	100
		Total Credits	**22**			
SEMESTER II			**CREDITS**	**EXTERNAL MARKS**	**INTERNAL MARKS**	**TOTAL**
8	I	Tamil/ Other languages – II	3	75	25	100
9	II	English – II	3	75	25	100
10	III	Core II :Object Oriented Programming Concepts using C ++	4	75	25	100
11	III	Practical II : C++ programming Lab	3	60	40	100
12	III	Allied II: Mathematics II	5	75	25	100
13	IV	Basic Tamil/Advanced Tamil/Non Major Elective II	2	75	25	100
14	IV	Soft Skill II	3	50	50	100
		Total Credits	**23**			
SEMESTER III			**CREDITS**	**EXTERNAL MARKS**	**INTERNAL MARKS**	**TOTAL**
15	III	Core III: Data Structures	4	75	25	100
16	III	Core IV: Java programming	4	75	25	100
17	III	Core V: Computer Organization	4	75	25	100
18	III	Practical III : Data Structures using Java Lab	3	60	40	100
19	III	Allied III: Financial Accounting	5	75	25	100
20	IV	Soft Skill III	3	50	50	100
21	IV	Environmental Studies	Examination will be held in Semester IV			
		Total Credits	**23**			
SEMESTER IV			**CREDITS**	**EXTERNAL MARKS**	**INTERNAL MARKS**	**TOTAL**
22	III	Core VI: Open Source Technologies	4	75	25	100
23	III	Core VII: Computer Network	4	75	25	100
24	III	Core VIII : E-Commerce technologies	4	75	25	100
25	III	Practical IV : Open Source Technologies Lab	3	60	40	100
26	III	Allied IV: Cost and Management Accounting	5	75	25	100
27	IV	Soft Skill IV	3	50	50	100
28	IV	Environmental Studies	2	75	25	100
		Total Credits	**25**			

SEMESTER V			CREDITS	EXTERNAL MARKS	INTERNAL MARKS	TOTAL
29	III	Core IX: Software Engineering	4	75	25	100
30	III	Core X : Operating System	4	75	25	100
31	III	Core XI: Relational Database Management System	4	75	25	100
32	III	Practical V: Operating System Lab	3	60	40	100
33	III	Practical VI : PL/SQL Lab	2	60	40	100
34	III	Elective I	5	75	25	100
35	IV	Value Education	2			
		Total Credits	**24**			
SEMESTER VI			**CREDITS**	**EXTERNAL MARKS**	**INTERNAL MARKS**	**TOTAL**
36	III	Core XII: Web Design and Development	4	75	25	100
37	III	Core XIII: Data Mining	4	75	25	100
38	III	Core XIV: Mobile Application Development	4	75	25	100
39	III	Practical VII: Mobile Application Development Lab	3	60	40	100
40	III	Elective II	5	75	25	100
41	III	Mini Project	5	60	40	100
42	V	Extension Activities	1			
		Total Credits	**26**			
		Total credits (Core, Elective, SBS)	**143**			

Non Major Elective I - I Semester
Web Application Office Automation HTML
Non Major Elective II – II Semester
Web Application Lab Office Automation Lab HTML Lab
Elective I
Principles of Information Security Resource Management Techniques Multimedia and its Applications
Elective II
Software Project Management IOT and its Applications Data Analytics using R

அண்ணா ஆதர்ஷ் மகளிர் கல்லூரி, சென்னை

தமிழ்த்துறை

சென்னைப் பல்கலைக்கழகப் பாடத்திட்டம்

பொதுத்தமிழ் - முதலாமாண்டு - முதற்பருவம் (FIRST SEMESTER)

நோக்கும் கற்றல் பயன்பாடும் (2021 - 2022)

Objective - Syllabus - Out come (2021 -2022)

பாடத்திட்டத்தின் நோக்கம்:

காலந்தோறும் தமிழ் அடைந்துள்ள வளர்ச்சியையும், இன்றைய நவீன காலத்தில் உருவான தமிழ் இலக்கியங்களையும் ஒற்றுமை வேற்றுமைப்படுத்தி ஆராய்கின்ற நோக்கில் பொதுத்தமிழ்ப் பாடப்பகுதி கட்டமைக்கப்பட்டுள்ளது.

பாரதியார், பாரதிதாசன், கவிமணி உள்ளிட்டோரின் மரபுக்கவிதைகளும், அப்துல் ரகுமான், சிற்பி, மு.மேத்தா, வைரமுத்து உள்ளிட்டோரின் புதுக் கவிதைகளும் இரா.பி.சுதுப்பிள்ளை அவர்களின் உரைநடை, முத்துசாமி அவர்களின் நாடகம் போன்றவை இடம்பெற்றுள்ளன.

தமிழ் மக்களின் வாய்மொழி இலக்கியங்களில் சிலபாடல்கள் பாடமாக வைக்கப்பட்டுள்ளன. இந்த இலக்கியங்கள் சார்ந்த வரலாற்றுப் பின்புலமும் பாடமாக அமைந்துள்ளன.

மாணவர்களுக்குப் படிப்பின் ஆர்வத்தைத் தூண்டும் வகையில் கவிதைகள், சிறுகதை, உரைநடை, நாடகம் போன்ற எளிமையான பகுதிகள் அமைக்கப்பட்டுள்ளன.

இலக்கிய வாசிப்பின் ஆர்வத்தை ஊக்குவித்தலும் தற்கால தமிழ் இலக்கியத்தின் ஆளுமைகளை மாணவர்கள் புரிந்துகொள்ள வைத்தலும் பாடத்திட்டத்தின் நோக்கமாகும். தமிழ் இலக்கிய வரலாற்றில் தற்கால படைப்பாளர்களையும் படைப்புகளையும் அறிமுகப்படுத்தித் தமிழ் இலக்கியப் பாரம்பரியத்தைப் புரிய வைத்தலும் பிழையின்றி எழுதுவதற்குரிய இலக்கண விதிமுறைகளைத் தெரிந்து கொள்ளுதலும் பாடத்திட்டத்தின் நோக்கமாகும்.

தமிழ் மொழியின் கடினமான சொற்களுக்குரிய பொருளைத் தெரிந்துகொள்ளும் வகையில் அகராதியைப் பயன்படுத்துவதற்குரிய அடிப்படையைக் கற்றுத்தருதலே நோக்கமாகும்.

பாடத்திட்டம்

பாடப்பகுப்பு

I. இலக்கியம்

II. அதைச் சார்ந்த தமிழிலக்கிய வரலாறு

III. மொழிப் பயிற்சி

அலகு - 1

மரபுக்கவிதை

1. பாரதியார் - பாரத சமுதாயம்.
2. பாரதிதாசன் - ஒற்றுமைப்பாட்டு
3. கவிமணி தேசிக விநாயகம் பிள்ளை - உடல் நலம் பேணல்
4. நாமக்கல் கவிஞர் வெ. இராமலிங்கம்பிள்ளை - தமிழன் இதயம்
5. கவிஞர் கண்ணதாசன் - குடும்பம் ஒரு கதம்பம்

6. பட்டுக்கோட்டை அ. கல்யாணசுந்தரம் - வருங்காலம் உண்டு

7. தமிழ் ஒளி - வழிப்பயணம்

புதுக்கவிதை

1. கவிஞர் ந. பிச்சமூர்த்தி - காதல்

2. கவிஞர் அப்துல் ரகுமான் - பித்தன்

3. கவிஞர் மு.மேத்தா - காதலர் பாதை, ஒரு கடிதம் அனாதையாகிவிட்டது, நிழல்கள்

4. கவிஞர் இன்குலாப் - ஒவ்வொரு புல்லையும் பெயர் சொல்லி அழைப்பேன்

5. கவிஞர் தமிழன்பன் - சொல்லில் உயர்வு தமிழ்ச்சொல்லே

6. கவிஞர் வைரமுத்து - விதைச்சோளம்

7. கவிஞர் அ.சங்கரி - இன்று நான் பெரிய பெண்

அலகு - 2

நாட்டுப்புற இலக்கியம்

1. ஏற்றப்பாட்டு

2. தெம்மாங்கு

3. அம்பா பாடல்கள்

4. விளையாட்டுப் பாடல்கள்

5. நடவுப் பாடல்கள்

அலகு - 3

சிறுகதைகள்

1. கு.ப.ரா- கனகாம்பரம்

2. கு.அழகிரிசாமி - குமாரபுரம் ஸ்டேஷன்

3. தமிழ்ச்செல்வன் - வெயிலோடு போய்

4.தோப்பில் முகமது மீரான் - வட்டக்கண்ணாடி

5.அம்பை - பிளாஸ்டிக் டப்பாவில் பராசக்தி முதலியோர்

உரைநடை

1.இரா.பி.சேதுப்பிள்ளை - வண்மையும் வறுமையும்

அலகு - 4

நாடகம்

நா.முத்துசாமி - நாற்காலிக்காரர்

அலகு -5

தமிழிலக்கிய வரலாறு

1. மரபுக் கவிதை - இருபதாம் நூற்றாண்டு கவிஞர்கள்

2. புதுக்கவிதை - தோற்றம் - வளர்ச்சி -வரலாறு

3. நாட்டுப்புறப் பாடல்கள், கதைகள், கதைப்பாடல்கள், பழமொழிகள், விடுகதைகள் - வரலாறு

4. சிறுகதை, உரைநடை வரலாறு

5. நாடகம் - வரலாறு

அலகு - 6

மொழிப் பயிற்சி

1. வாக்கிய வகை(தொடர் வாக்கியம், தனி வாக்கியம், கூட்டு வாக்கியம்)
2. இரு வழக்குகள் (பேச்சு, எழுத்து)
3. எழுவாய், பயனிலை, செயப்படுபொருள்
4. ஒருமை, பன்மை மயக்கம்
5. திணை, பால், எண், இட வேறுபாடு
6. நால்வகைச் சொற்கள் (பெயர், வினை, இடை, உரி)
7. அகரவரிசைப் படுத்துதல்

கற்றலும் பயன்பாடும்:

தமிழ் மொழியின் இலக்கிய வளங்களின் மதிப்பைப் புரிதல். தமிழ் இலக்கிய வாசிப்பின் வழி சமூக விழிப்புணர்வைத் தூண்டுதல். தமிழ் இலக்கிய வளங்களின் வாயிலாகத் தமிழ்ப்பண்பாட்டை அடுத்த தலைமுறைக்குக் கொண்டுசெல்லுதல். மொழிவளத்தின் தேவையை வலியுறுத்துதல். மாணவர்கள் பிழையின்றி எழுத மொழிப்பயிற்சி உதவுகிறது.

இப்பாடத்திட்டம் மாணவர்கள் தங்கள் படைப்புகளை உருவாக்குவதற்கும் பயன்படுகிறது. போட்டித்தேர்வுகளை எதிர்கொள்ளுவதற்குரிய வகையில் இலக்கிய வரலாற்றுப்பகுதி மிகுந்த பயனுடையதாய் உள்ளது.

பாடநூல்

சென்னைப்பல்கலைக்கழகம் (university of Madras)

- அடித்தளப் படிப்பு - பகுதி - I தமிழ்

முதலாம் மற்றும் இரண்டாம் பருவங்களுக்குரியது. அனைத்துப் பட்டப்படிப்பு பிரிவுகளுக்கும் ஐந்தாண்டு ஒருங்குமுறை பட்ட மேற்படிப்புப் பிரிவுகளுக்கும் பொதுவானது.

தாள் -I - செய்யுள் திரட்டு

(Foundation Course

Part - I Tamil - For I & II Semesters

Common to all undergraduate course and Five-Year Integrated postgraduate courses. (2020 - 2021 onwards.)

- நாற்காலிக்காரர் - நா.முத்துசாமி
- தமிழ் இலக்கிய வரலாறு பாடம் தழுவியவை
- மொழிப்பயிற்சி

Reference book

தமிழ் - பகுதி 4 - சென்னைப் பல்கலைக்கழகம் வடிவமைத்த பாடத்திட்டங்கள் ஆகையால் குறிப்புதவி நூல் என்று தனியாக இல்லை. (Reference book not applicable)

UNIVERSITY OF MADRAS

FRENCH SYLLABUS (WITH EFFECT FROM 2020-2021)

Common to all B.A / B.sc / B.Com courses

Inst.Hrs : 4

YEAR : I / I SEMESTER

Foundation Course: Paper I-French I

Title of the Paper : Prescribed Text and Grammar-I

Learning Objectives:

In teaching French we aim to

- provide the learners with a basic knowledge of grammar and gradually give them an insight into the culture and literature of France
- enable them to comprehend the nuances of the language so they are better equipped to express themselves in French
- discover another world , another people , another way of life .
- make them more accepting of people who differ from them

Prescribed textbook:

> Régine Mérieux & Yves Loiseau, Latitudes 1, Paris, Didier, 2017 (Units 1-6 only).

Syllabus:

Unité 1 - Salut!

Saluer - entrer en contact avec quelqu'un - se présenter- s'excuser

Unité 2 - Enchanté !

Demander de se présenter - Présenter quelqu'un

Unité 3 - J'adore !

Exprimer ses goûts - Échanger sur ses projets

Unité 4 - Tu veux bien ?

Demander à quelqu'un de faire quelque chose - Demander poliment - Parler d'actions passées

Unité 5 - On se voit quand ?

Proposer , accepter, refuser une invitation. - Indiquer la date - Prendre et fixer un rendez-vous - Demander et indiquer l'heure

Unité 6 - Bonne idée !

Exprimer son point de vue positif et négatif - S'informer sur le prix - S'informer sur la quantité - Exprimer la quantité .

Recommend text : Not applicable

Learning Outcome :

Learners are able

- to comprehend and express themselves well
- to have an interest to look into another world
- to improve communication skills
- to perform well in the University Exams .

SEMESTER - I

YEAR / SEMESTER: I YEAR / I SEMESTER

SUBJECT NAME : FOUNDATION COURSE IN HINDI

SUBJECT CODE: CLE1E

Learning Objectives:

The objectives of the course is to sensitize the students -

- To the aesthetic and cultural aspects of literary appreciation and analysis.
- To introduce modern Hindi Prose to the students and to understand the cultural, social and moral values of modern Hindi Prose.
- To familiarize Official correspondence , General letter correspondence and technical words.
- To motivate to demonstrate human value in different life situations

PART-I - HINDI

I YEAR – I SEMESTER

PAPER – I - PROSE, FUNCTIONAL HINDI & LETTER WRITING

I . PROSE (Detailed Study) : HINDI GADHYA MALA
Ed. by Dr. Syed Rahamathulla
Poornima Prakashan, 4/7 Begum III Street
Royapettah, Chennai – 14.

LESSONS PRESCRIBED :

1. Sabhyata ka Rahasya
2. Mitrata
3. Yuvavon sen
4. Paramanu Oorja evam Khadya Padarth Sanrakshan

5. Yougyata aur Vyavasay ka Chunav.

II. FUNCTIONAL HINDI & LETTER WRITING

Students are expected to know the office and Business Procedures, Administrativeand Business Correspondence.

1. General Correspondence:
    1. Personal Applications
    2. Leave Letters
    3. Letter to the Editor
    4. Opening an A/C
    5. Application for Withdrawal
    6. Transfer of an A/C
    7. Missing of Pass Book / Cheque Leaf
    8. Complaints
    9. Ordering for Books
    10. Enquiry

III. OFFICIAL CORRESPONDENCE:

1. Government Order
2. Demi Official Letter
3. Circular
4. Memo
5. Official Memo
6. Notification
7. Resolution
8. Noti

REFERENCE :

1. Karyalayeen Tippaniya : Kendriya Hindi Sansthan, Agra
2. Prayojan Moolak Hindi : Dr. Syed Rahamathulla, Poornima Prakashan
4/7, Begum III Street, Royapettah, Chennai – 14.

UNITISED SYLLABUS

UNIT-I

1. Sabhyata ka Rahasya
2. Personal Applications
3. Leave Letters
4. Government Order
5. Administrative Terminology Hindi to English (25 Words)

UNIT - II

1. Mitrata
2. Letter to the Editor
3. Opening an A/C
4. Demi Official Letter
5. Administrative Terminology English to Hindi (25 Words)

UNIT-III

1. Yuvavon Se
2. Application for Withdrawal
3. Circular
4. Memo
5. Administrative Terminology Hindi to English (25 Words)

UNIT-IV

1. Paramanu Oorja evam Khadya Padarth Sanrakshan
2. Transfer of an A/C
3. Missing of Pass Book / Cheque Leaf
4. Official Memo
5. Administrative Terminology English to Hindi (25 Words)

UNIT-V

1. Yougyata aur Vyavasay ka Chunav
2. Complaints
3. Ordering for Books
4. Notification
5. Official Noting Hindi to English (25 words)

UNIT-VI

1. Enquiry
2. Resolution
3. Notice
4. Official Noting English to Hindi (25 words)

Learning Outcomes:

- Understanding the concept and importance of functional Hindi
- Understanding various forms of functional Hindi and its usage according to its area of application
- Knowledge about good civilization qualities and culture.
- Knowledge about the importance of human values.

Communicative English - I
I UG - B.COM / B.Sc / BCA
Odd Semester

Course Objectives:

- To hone the basic communication of students and prepare them for career challenges.
- To train students on effective listening.
- Trained to better express themselves through the right choice of words for formal and informal writing and speaking.
- To nurture and develop efficient reading by introducing them to reading techniques.
- To break the barriers of public speaking and build confidence to face the audience/people.

SYLLABUS

Recommended Book: Communicative English by Tamilnadu State Council for Higher Education (TANSCHE)

Semester I

Unit I (20 hours)

1. Listening and Speaking

    a. Introducing self and others

    b. Listening for specific information

    c. Pronunciation (without phonetic symbols)

i. Essentials of pronunciation

ii. American and British pronunciation

2. Reading and Writing

a. Reading short articles – newspaper reports / fact based articles

i. Skimming and scanning

ii. Diction and tone

iii. Identifying topic sentences

b. Reading aloud: Reading an article/report

c. Journal (Diary) Writing

3. Study Skills - 1

a. Using dictionaries, encyclopaedias, thesaurus

4. Grammar in Context:

Naming and Describing

• Nouns & Pronouns

• Adjectives

Unit II (20 hours)

1. Listening and Speaking

a. Listening with a Purpose

b. Effective Listening

c. Tonal Variation

d. Listening for Information

e. Asking for Information

f. Giving Information

2. Reading and Writing

1. a. Strategies of Reading:

Skimming and Scanning

b. Types of Reading :

Extensive and Intensive Reading

c. Reading a prose passage

d. Reading a poem

e. Reading a short story

2. Paragraphs: Structure and Types

a. What is a Paragraph?

b. Paragraph structure

c. Topic Sentence

d. Unity

e. Coherence

f. Connections between Ideas: Using Transitional words and expressions

g. Types of Paragraphs

3. Study Skills II:

Using the Internet as a Resource

a. Online search

b. Know the keyword

c. Refine your search

d. Guidelines for using the Resources

e. e-learning resources of Government of India

f. Terms to know

4. Grammar in Context

Involving Action-I

a. Verbs

b. Concord

Unit III (16 hours)

1. Listening and Speaking

a. Giving and following instructions

b. Asking for and giving directions

c. Continuing discussions with connecting ideas

2. Reading and writing

a. Reading feature articles (from newspapers and magazines)

b. Reading to identify point of view and perspective (opinion pieces, editorials etc.)

c. Descriptive writing – writing a short descriptive essay of two to three paragraphs.

3. Grammar in Context:

Involving Action – II

• Verbals - Gerund, Participle,

Infinitive

• Modals

Unit IV (16 hours)

1. Listening and Speaking

a. Giving and responding to opinions

2. Reading and writing

a. Note taking

b. Narrative writing – writing narrative essays of two to three paragraphs

3. Grammar in Context:

Tense

• Present

• Past

• Future

Unit V (18 hours)

1. Listening and Speaking

a. Participating in a Group Discussion

2. Reading and writing

a. Reading diagrammatic information – interpretations maps, graphs and pie charts

b. Writing short essays using the language of comparison and contrast

3. Grammar in Context: Voice (showing the relationship between Tense and Voice)

Learning outcome:

- Students show progress in their ability to focus and effectively interpret other's speech.
- Significant improvement in efficient reading- both in academic and pleasure reading.
- Trained to better express themselves in different scenarios of formal and informal writing and speaking.
- Exhibit improved oral and aural skills through in-class activities and assignments.

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SEMESTER - I

New Syllabus - Effective from 2020-2021

YEAR: I

Name of the Subject: PROBLEM SOLVING USING PYTHON

Subject Code: SE21A

Learning Objectives:

- Describe the core syntax and semantics of Python programming language.
- Discover the need for working with the strings and functions.
- Illustrate the process of structuring the data using lists, dictionaries, tuples and sets.
- Understand the turtle graphics concept
- Understand the usage of packages and Dictionaries.

Syllabus:

UNIT – I

Introduction: The essence of computational problem solving – Limits of computational problem solving-Computer algorithms-Computer Hardware-Computer Software-The process of computational problem solving-Python programming language - Literals - Variables and Identifiers - Operators - Expressions and Data types.

UNIT - II

Control Structures: Boolean Expressions - Selection Control - If Statement- Indentation in Python- Multi-Way Selection -- Iterative Control- While Statement- Infinite loops- Definite vs. Indefinite Loops- Boolean Flags and Indefinite Loops. Lists: List Structures - Lists in Python - Iterating over lists in Python.

UNIT - III

Functions: Program Routines- Defining Functions- More on Functions: Calling Value-Returning Functions- Calling Non-Value-Returning Functions- Parameter Passing - Keyword Arguments in Python - Default Arguments in Python-Variable Scope.

UNIT - IV

Objects and their use: Software Objects - Turtle Graphics – Turtle attributes-Modular Design: Modules - Top-Down Design - Python Modules - Text Files: Opening, reading and writing text files - String Processing - Exception Handling.

UNIT - V

Dictionaries and Sets: Dictionary type in Python - Set Data type. Object Oriented Programming using Python: Encapsulation - Inheritance – Polymorphism. Recursion: Recursive Functions.

TEXT BOOKS:

1. Charles Dierbach, "Introduction to Computer Science using Python - A computational Problem solving Focus", Wiley India Edition, 2015.

REFERENCE BOOKS:

1. Mark Lutz, "Learning Python Powerful Object Oriented Programming", O'reilly Media 2018, 5th Edition.

2. Timothy A. Budd, "Exploring Python", Tata MCGraw Hill Education Private Limited 2011, 1st Edition.

3. Allen Downey, Jeffrey Elkner, Chris Meyers, "How to think like a computer scientist: learning with Python", 2012.

4. Sheetal Taneja& Naveen kumar, "Python Programming a Modular approach – A Modular approach with Graphics, Database, Mobile and Web applications", Pearson, 2017.

5. Ch Satyanarayana M Radhika Mani, B N Jagadesh, "Python programming", Universities Press 2018.

WEB REFERENCES

- http://interactivepython.org/courselib/static/pythonds
- http://www.ibiblio.org/g2swap/byteofpython/read/
- http://www.diveintopython3.net/
- http://greenteapress.com/wp/think-python-2e/
- NPTEL & MOOC courses titled Python programming
- http://spoken-tutorial.org/tutorial-search/?search_foss=Python&search_language=English
- http://docs.python.org/3/tutorial/index.html

Learning Outcomes:

- To Understand the principles of Python and acquire skills in programming in python
- To develop the emerging applications of relevant field using Python
- Interpret the fundamental Python syntax and semantics and be fluent in the use of Python control flow statements.
- Able to develop simple turtle graphics programs in Python

SEMESTER - I

YEAR: I

Name of the Subject: Practical I / Python Programming Lab

Subject Code : SE211

Learning Objectives:

- To implement the python programming features in practical applications.
- To write, test, and debug simple Python programs.
- To implement Python programs with conditionals and loops.
- Use functions for structuring Python programs.
- Represent compound data using Python lists, tuples, dictionaries, turtles, Files and modules.

Syllabus :

1.Program to convert the given temperature from Fahrenheit to Celsius and vice versa depending upon user's choice.

2.Program to calculate total marks, percentage and grade of a student. Marks obtained in each of the five subjects are to be input by user. Assign grades according to the following criteria:

Grade A: Percentage >=80

Grade B: Percentage >=70 and <80

Grade C: Percentage >=60 and <70

Grade D: Percentage >=40and <60

Grade E: Percentage<40

3.Program, to find the area of rectangle, square, circle and triangle by accepting suitable input parameters from user.

4.Program to display the first n terms of Fibonacci series.

5.Program to find factorial of the given number using recursive function.

6.Write a Python program to count the number of even and odd numbers from array of N numbers.

7.Python function that accepts a string and calculate the number of upper case letters and lower case letters.

8.Python program to reverse a given string and check whether the give string is palindrome or not.

9.Write a program to find sum of all items in a dictionary.

10.Write a Python program to construct the following pattern, using a nested loop

1
22
333
4444
55555
666666
7777777
88888888
999999999

11.Read a file content and copy only the contents at odd lines into a new file.

12.Create a Turtle graphics window with specific size.

13.Write a Python program for Towers of Hanoi using recursion

14.Create a menu driven Python program with a dictionary for words and their meanings.

15.Devise a Python program to implement the Hangman Game.

Learning Outcomes:

- Understand the numeric or real life application problems and solve them
- Apply a solution clearly and accurately in a program using Python.
- Apply the best features available in Python to solve the situational problems.

SEMESTER I

YEAR : I

Name of the Subject : Allied Mathematics – I

Subject Code : SM3AA

Learning Objectives :

- Students gain knowledge about basic concepts of Algebra, Theory of Equations, Matrices, Trigonometry and Calculus.
- Enabling students to develop a positive attitude towards mathematics as an interesting and valuable subject of study.
- Ability to analyze a problem, identify and define the computing requirements, which may be appropriate to its solution.

Syllabus:

UNIT I

Algebra And Numerical Methods: Algebra: Summation of series- simple problems. Numerical Methods: Operators E, Δ, ∇, difference tables - Newton-Raphson method- Newton's forward and backward interpolation formulae for equal intervals, Lagrange's interpolation formula.

Chapter2, Section2.1.3, 2.2, 2.2.1, 2.3, 2.3.3

Chapter3, Section3.4.1 and Chapter 5, Section 5.1 and 5.2.

UNIT II

Matrices: Symmetric, Skew-Symmetric, Orthogonal, Hermetian, Skew-Hermetian and Unitary matrices. Eigen values and Eigen-vectors, Cayley-Hamilton theorem (without proof) – verification - Computation of inverse of matrix using Cayley - Hamilton theorem.

Chapter 4, Section4.1.1 to 4.1.6, 4.5, 4.5.2, 4.5.3.

UNIT III

Theory Of Equations: Polynomial equations with real coefficients, irrational roots, complex roots, symmetric functions of roots, transformation of equation by increasing or decreasing roots by a constant, reciprocal equation - simple problems.

Chapter 3, Section 3.1 to 3.4.1 (omit section3.2.1)

UNIT IV

Trigonometry : Expansions of $\sin(n\theta)$ and $\cos(n\theta)$ in a series of powers of $\sin\theta$ and $\cos\theta$ - Expansions of $\sin^n\theta$, $\cos^n\theta$, $\tan^n\theta$ in a series of sines, cosines and tangents of multiples of "θ" - Expansions of $\sin\theta$, $\cos\theta$ and $\tan\theta$ in a series of powers of "θ" – Hyperbolic and inverse hyperbolic functions .

Chapter 6, Section 6.1 to 6.3.

UNIT V

Differential Calculus : Successive differentiation, n^{th} derivatives, Leibnitz theorem (without proof) and applications, Jacobians, Curvature and radius of curvature in Cartesianco - ordinates, maxima and minima of functions of two variables- Simple problems

Chapter 1, Section1.1 to 1.3.1 and 1.4.3.

Text Books:

1."Content and treatment as in Allied Mathematics", Volume I and II, by P. Duraipandian and S. Udayabaskaran, S. Chand Publications

References:

1. S. Narayanan and T.K. Manickavasagam Pillai – Ancillary Mathematics, S.Viswanathan Printers, 1986, Chennai.

2. Allied Mathematics by Dr. A. Singaravelu, Meenakshi Agency.

e-Resources:

1. http://www.themathpaage.com
2. http://nptel.ac.in

Learning Outcomes:

- ❖ Think in a critical manner.
- ❖ Formulate and develop mathematical arguments in a logical manner.
- ❖ Acquire good knowledge and understanding in advanced areas of mathematics.

PROFESSIONAL ENGLISH FOR PHYSICAL SCIENCES
I UG – B.Sc / BCA
ODD SEMESTER

INTRODUCTION

The growing popularity of STEM – Integration of Science, Technology, Engineering and Mathematics – has necessitated the importance of learning English as a tool for critical and analytical thinking that forms the basis of STEM curriculum. In this specialized syllabus, Professional English for Physical Sciences the learners acquire the essential language skills to acclimatize themselves to utilize language for scientific approach and theoretical analysis.

COURSE OBJECTIVE

The language course will help learners to,

- Understand the core concepts of their respective fields in an analytical manner through argumentation.
- Supplant their rational thinking with evidence based explanation using subject specific text through ESP (English for Specific Purpose).
- To equip the ESL learners with English for critical thinking, problem solving, creative and collaborative skills required for their academic and professional competence.

SYLLABUS

RECOMMENDED BOOK: Professional English for B.Sc Physical Sciences by TamilNadu State Council for Higher Education (TANSCHE)

Unit 1 (10 Hours) **COMMUNICATION**	**Listening:** Listening to audio text and answering questions – Listening to Instructions **Speaking:** Pair work and small group work **Reading:** Comprehension Passages – Differentiate between facts and opinion **Writing:** Developing a story with pictures **Vocabulary:** Register specific – Incorporated into the LSRW skills
Unit 2 (10 Hours) **DESCRIPTION**	**Listening:** Listening to process description – Drawing a flow chart. **Speaking:** Role play (formal context) **Reading:** Skimming/Scanning – Reading passages on products, equipment and gadgets.

	Writing: Process Description – Compare and Contrast Paragraph – Sentence Definition and Extended Definition – Free Writing **Vocabulary:** Register specific – Incorporated into the LSRW skills
Unit 3 (5 Hours) **NEGOTIATION**	**Listening:** Listening to interviews of specialists/ Inventors in fields. (Subject specific) **Speaking:** Brainstorming. (Mind mapping). Small group discussions (Subject- Specific) **Reading:** Longer Reading text. **Writing:** Essay Writing (250 words) **Vocabulary:** Register specific – Incorporated into the LSRW skills
Unit 4 (10 Hours) **PRESENTATION SKILLS**	**Listening:** Listening to lectures **Speaking:** Short talks **Reading:** Reading Comprehension Passages. **Writing:** Writing Recommendations. Interpreting Visuals inputs **Vocabulary:** Register specific – Incorporated into the LSRW skills
Unit 5 (5 Hours) **CRITICAL THINKING SKILLS**	**Listening:** Listening comprehension – Listening for information **Speaking:** Making presentations (with PPT –practice) **Reading:** Reading Comprehension Passages – Note making. Comprehension: Motivational article on Professional Competence, Professional Ethics and Life Skills. **Writing:** Problem and Solution essay – Creative Writing – Summary Writing **Vocabulary:** Register specific – Incorporated into the LSRW skills

LEARNING OUTCOME

Upon completion of the programme,

- Learners will be able to demonstrate and illustrate subject specific concept.
- Identify and emphasize solutions through LSRW skills as they progress to become active learners from passive learners.
- Categorize and examine outcomes based on real-world problems related to science and industry.

சென்னைப் பல்கலைக்கழகம்

அடிப்படைத்தமிழ் - நோக்கும் கற்றல் பயன்பாடும்

அண்ணா ஆதர்ஷ் மகளிர் கல்லூரி, சென்னை

தமிழ்த்துறை

முதலாமாண்டு (2021 -2022)

அடிப்படைத் தமிழ் - முதல் பருவம்

பாடத்திட்டத்தின் நோக்கம் (Objective)

தமிழ்மொழியைப் பேசவும் எழுதவும் படிக்கவும் தெரியாத மாணவர்கள் அடிப்படைத்தமிழ் பாடம் படித்துப் பயன்பெறும் நோக்கில் பாடத்திட்டம் அமைகிறது. அண்டை மாநிலங்களிலிருந்தும் பிற நாடுகளிலிருந்தும் இளங்கலை, இளம் அறிவியல் பட்டம் பெறும் மாணவர்கள் தமிழ் நாட்டின் மாநில மொழியைப் பேசவும் எழுதவும் துணைபுரியும் வகையில் பாடத்திட்டம் வடிவமைக்கப்பட்டுள்ளது.

இம்மாணவர்கள் முதற்பருவத்தில் தமிழ் மொழியின் எழுத்துக்களை எழுதவும் படிக்கவும் பயிற்சி அளிக்கப்படுகிறது. மேலும் தமிழ் மொழியின் சொல் வகை, தொடரமைப்பு, தமிழில் எண்ணுப்பெயர்கள், உடல் உறுப்புகள், அன்றாட வாழ்விற்குத் தேவையான பொருள்களை அறிந்துகொள்ள வைப்பதே இதன் நோக்கமாகும்.

பாடத்திட்டம் - முதல் பருவம் (SYLLABUS)

அலகு - 1.

எழுத்துகள்

1. உயிர் எழுத்து, ஆய்த எழுத்து, 2. மெய் எழுத்து , 3. உயிர் மெய் எழுத்து

அலகு - 2

சொற்கள்

1. பெயர்ச்சொல், 2. வினை ச்சொல், 3. இடை ச்சொல், 4. உரிச் சொல்

அலகு -3.

தொடரமைப்பு

1. எழுவாய், 2. பயனிலை, 3. செயப்படுப் பொருள்

அலகு -4.

பிழை நீக்கம்

1. ஒற்றுப் பிழை, 2. எழுத்துப் பிழை, 3. தொடர்ப்பிழை,

அலகு - 5

எண்கள், உறவுப் பெயர்கள், வாழ் இடங்களும், பொருள்களும்

அலகு - 6

அறிமுகம்

1. விழாக்கள், 2. இயற்கை, 3. உணவு முறைகள்-சுவை-காய்கள்-பழங்கள் போன்றன.

பாடத்திட்டத்தின் பயன்கள் (Subject Outcome)

இந்தப் பாடத்தினால் வேற்றுப்புல மாணவர்கள் தமிழகத்தில் பாமர மக்களிடமும் தமிழில் பேச முடியும். தமிழ் மொழியிலுள்ள சிறு சிறு படைப்புகளைப் பார்த்து இலக்கிய இன்பம் பெறமுடியும். தமிழகத்திலுள்ள சுற்றுலாத்தலங்களுக்கு வழிகாட்டி இன்றிப் போய் வருதல்.

பாட நூல்

தமிழ் – பகுதி 4 - சென்னைப் பல்கலைக்கழகம் அடிப்படைத் தமிழுக்குப் பாடத்திட்டங்கள் மட்டுமே வரையறுத்துள்ளது. அதை நூலாக வெளியிடவில்லை. எனவே, பாடநூல் இல்லை.

Reference book

தமிழ் – பகுதி 4 - சென்னைப் பல்கலைக்கழகம் வடிவமைத்த பாடத்திட்டங்கள் ஆகையால் குறிப்புதவிநூல் என்று தனியாக இல்லை. (Reference book not applicable)

சென்னைப் பல்கலைக்கழகம்

சிறப்புத்தமிழ் - நோக்கும் கற்றல் பயன்பாடும்

அண்ணா ஆதர்ஷ் மகளிர் கல்லூரி, சென்னை

தமிழ்த்துறை

முதலாமாண்டு (2021 -2022)

சிறப்புத் தமிழ் - முதல்பருவம்

பாடத்திட்டத்தின் நோக்கம் (Objective)

இப்பாடத்திட்டம் பள்ளிகளில் ஒரு சில வகுப்புகளில் தமிழைப் படித்து தமிழ் மொழியை முழுமையாக அறிந்து கொள்ளாத கல்லூரிகளில் பிற மொழி கற்பவர்களுக்காக வடிவமைக்கப்படுகிறது. இங்கு தமிழ் இலக்கியப்பகுதியும், தமிழிலக்கிய வரலாற்றுப்பகுதியும், மொழிப்பயிற்சியும் பாடமாக அமைகிறது. தமிழ் இலக்கிய இன்பத்தை உணரும் நோக்கிலும் இலக்கிய வளத்தை உணரும் நோக்கிலும் பாடத்திட்டம் உள்ளது.

பாடத்திட்டம் (SYLLABUS)

பாடப்பகுப்பு

I. இலக்கியம்

II. அதைச் சார்ந்த தமிழிலக்கிய வரலாறு

III. மொழிப் பயிற்சி

அலகு -1

நாட்டுப் புறப்பாடல்

1. பஞ்சம். 2. மானம் விடிவதெப்போ?

அலகு -2

புனை கதை

1.”கட்டை விரல்”-சி.என்.அண்ணாதுரை

அலகு -3

புதுக்கவிதை

1. ஆடிக்காற்றே -சிற்பி, 2. கடமையைச் செய்-மீரா, 3. இழந்தவர்கள்-அப்துல் ரகுமான்

அலகு - 4.

மொழித்திறன்

1. கலைச்சொல்லாக்கம், 2. பொருந்திய சொல் தருதல், 3. பிழை நீக்கி எழுதுதல்

பாடத்திட்டத்தின் பயன்கள் (Subject Outcome)

இப்பாடத்தைப் படிப்பதால் தமிழ் மொழியின் இலக்கியஇன்பம், சொல் வளம், புது கலைச்சொல் படைத்தல் போன்றவற்றை உணர உதவுகிறது.

பாட நூல்

தமிழ் – பகுதி 4 - சென்னைப் பல்கலைக்கழகம் அடிப்படைத் தமிழுக்குப் பாடத்திட்டங்கள் மட்டுமே வரையறுத்துள்ளது. அதை நூலாக வெளியிடவில்லை. எனவே, பாடநூல் இல்லை.

Reference book

தமிழ் – பகுதி 4 - சென்னைப் பல்கலைக்கழகம் வடிவமைத்த பாடத்திட்டங்கள் ஆகையால் குறிப்புதவிநூல் என்று தனியாக இல்லை. (Reference book not applicable)

SEMESTER - I

YEAR : I

Subject Name :Basic Elements of Logistics and Supply Chain Management (NME)

Subject Code : AY51A

Learning Objectives:

- To enable the students to get knowledge about the various techniques of Logistics Principles.
- To make the students to get practical skill in solving Problems in Logistics and supply chain management.

Syllabus:

UNIT I

Logistics Concept & Significance - Logistics System Fundamentals -Transport System: Railway, Road, Air, Waterways, Pipe Lines, Animals and Animal driven vehicles - Economics of transportation Stocking Policies-Storage and handling capacities - Warehousing.

UNIT II

Packaging Principles, functions and types - Containerization - Concepts – Infrastructure - Inventory Policy - Concept of Supply Chain Management and its strategic role in the organization - Intra and Inter Organization Supply Chain.

Learning Outcomes:

- On the completion of the syllabus students will understand the basic Logistics, contract and legal remedies in the law.
- To develop good understanding to the students about develop functioning and growth of the Logistics and supply chain management.

அண்ணா ஆதர்ஷ் மகளிர் கல்லூரி, சென்னை

தமிழ்த்துறை

சென்னைப் பல்கலைக்கழகப் பாடத்திட்டம்

பொதுத் தமிழ் - முதலாமாண்டு - இரண்டாம் பருவம் (second semester)

நோக்கும் கற்றல் பயன்பாடும் (2021 – 2022)

Objective – Syllabus – Out come (2021 -2022)

பாடத்திட்டத்தின் நோக்கம்

காலந்தோறும் தமிழ் அடைந்துள்ள வளர்ச்சியும் பரந்து விரிந்து கிடக்கும் அதன் ஆழ அகலத்தையும் ஒரு பருந்து பார்வையில் நோக்கும் வகையில் பொதுத்தமிழ்ப் பாடப்பகுதி கட்டமைக்கப்பட்டுள்ளது.

பழந்தமிழ் இலக்கியங்களின் வாயிலாக அறம், பொருள், இன்பம் ஆகியவற்றைப் போதித்தல். பழந்தமிழ் இலக்கியங்களின் இலக்கியச் செறிவையும், சொல் வளங்களையும் உணர வைத்தல்.

பழந்தமிழ்ச் சொற்களின் அருமையைப் புரியவைத்து மொழி கலப்பின்றிப் பேசுவதன் அவசியத்தை வலியுறுத்தல். பழந்தமிழ் மக்களின் வாழ்வியலை எடுத்துரைத்தல். இவையே இப்பாடத்திட்டத்தின் நோக்கமாகும்.

பாடத்திட்டம்

(SYLLABUS)

I.இலக்கியம்

II.அதைச் சார்ந்த தமிழிலக்கிய வரலாறு

III.மொழிப் பயிற்சி

அலகு 1

1. நற்றிணை - 87, 88
2. குறுந்தொகை - 46, 88, 89
3. கலித்தொகை - 11 ஆம் பாடல் - "அரிதாய அறன் எய்தி..

அலகு *2*

1. அகநானூறு - 86 ஆம் பாடல் (உழுந்து தலைபெய்த)
2. ஐங்குறுநூறு - கிள்ளைப்பத்து
3. பரிபாடல் -செவ்வேள் 5, கடுவன் இளவெயினார் (1 முதல் 10 வரிகள் - வெற்றி வேல்)

அலகு *3*

1. புறநானூறு - 182, 192
2. பதிற்றுப்பத்து -காக்கைப்பாடினியார், நச்செள்ளையார் பாடல் (56, 57)

அலகு *4*

1. பத்துப்பாட்டு - முல்லைப்பாட்டு

அலகு 5

1. திருக்குறள் - பொருட்பால் - 3 அதிகாரம் (காலமறிதல், சுற்றந்தழால், கண்ணோட்டம்)
2. நாலடியார் - ஈகை (முதல் 5 பாடல்கள்)

II தமிழிலக்கிய வரலாறு

1. முச்சங்க வரலாறு, பதினெண்மேற்கணக்கு நூல்கள் (எட்டுத்தொகை, பத்துப்பாட்டு)
2. பதினெண்கீழ்க்கணக்கு நூல்கள்

III மொழிப் பயிற்சி

1. இலக்கணக் குறிப்பு (வேற்றுமைத் தொகை, உவமைத் தொகை, பண்புத் தொகை, உம்மைத் தொகை, அன்மொழித் தொகை…..வடிவம்) [பத்தியிலிருந்து இலக்கணக் குறிப்புகளைக் கண்டறிதல்]
2. ஒற்று மிகும் மிகா இடங்கள்
3. மரபுத் தொடர்கள் (தமிழ் மரபுத் தொடர்களைக் கண்டறிதல்)

பாடத்திட்டத்தின் பயன்கள்

பழந்தமிழ் இலக்கியங்களின்வழியாக, அக்கால மக்களின் அகவுணர்வுகளையும் அக ஒழுக்கங்களையும் பண்பாட்டையும் உணர்ந்து கொள்ளுதல். பழந்தமிழ் இலக்கிய வாசிப்பின் வழி இயற்கையின் உன்னத மகத்துவத்தைப் புரியவைத்தல்.

தமிழ் இலக்கிய வளங்களின் வாயிலாகத் தமிழ்ப்பண்பாட்டை அடுத்த தலைமுறைக்குக் கொண்டுசெல்லுதல். மொழிவளத்தின் தேவையை வலியுறுத்துதல். மாணவர்கள் பிழையின்றி எழுத மொழிப்பயிற்சி உதவுகிறது.

இப்பாடத்திட்டம் மாணவர்கள் தங்கள் நடிப்பு திறனை வளர்க்கின்றது. போட்டித்தேர்வுகளை எதிர்கொள்வதற்குத் தமிழ் இலக்கிய வரலாற்றுப்பகுதி மிகுந்த பயனுடையதாக அமைகிறது.

பாடநூல்

சென்னைப்பல்கலைக்கழகம் (University of Madras)

அடித்தளப் படிப்பு - பகுதி - I தமிழ்

முதலாம் மற்றும் இரண்டாம் பருவங்களுக்குரியது.

அனைத்துப் பட்டப்படிப்பு பிரிவுகளுக்கும் ஐந்தாண்டு ஒருங்குமுறை பட்ட மேற்படிப்புப் பிரிவுகளுக்கும் பொதுவானது.

தாள் -I - செய்யுள் திரட்டு

(Foundation Course - Part - Tamil

For I & II Semesters

Common to all undergraduate course and Five-Year Integrated postgraduate courses. - 2021 onwards.)

Reference book

தமிழ் – பகுதி 1 - சென்னைப் பல்கலைக்கழகம் வடிவமைத்த பாடத்திட்டங்கள் ஆகையால் குறிப்புதவிநூல் என்று தனியாக இல்லை. (Reference book not applicable)

UNIVERSITY OF MADRAS

FRENCH SYLLABUS (WITH EFFECT FROM 2020-2021)

Common to all B.A / B.sc / B.Com courses

Inst.Hrs : 4

YEAR : I / II SEMESTER

Foundation Course: Paper II-French II

Title of the Paper : Prescribed Text and Grammar-II

Learning Objectives:

In teaching French we aim to

- provide the learners with a basic knowledge of grammar and gradually give them an insight into the culture and literature of France
- enable them to comprehend the nuances of the language so they are better equipped to express themselves in French
- discover another world , another people , another way of life .
- make them more accepting of people who differ from them

Prescribed textbook:

> Régine Mérieux & Yves Loiseau, Latitudes 1, Paris, Didier, 2017 (Units 7-12 only).

Syllabus:

Unité 7 - c'est où ?

Demander et indiquer une direction - localiser (près de, en face de …)

Unité 8 - N'oubliez pas !

Exprimer l'obligation ou l'interdit - Conseiller

Unité 9 - Belle vue sur la mer !

Décrire un lieu - situer - se situer dans le temps

Unité 10 - Quel beau voyage !

Raconter - décrire les étapes d'une action - exprimer l'intensité et la quantité - interroger

Unité 11 - oh! Joli!

Décrire quelqu'un- comparer - exprimer l'accord ou le désaccord - se situer dans le temps

Unité 12 - Et après ?

Parler de l'avenir - exprimer des souhaits - décrire quelqu'un

Recommend text - Not applicable

Learning Outcome :

Learners are able

- to comprehend and express themselves well
- to have an interest to look into another world
- to improve communication skills
- to perform well in the University Exams.

SEMESTER - II

YEAR / SEMESTER : I YEAR / II SEMESTER

SUBJECT NAME : FOUNDATION COURSE IN HINDI

SUBJECT CODE: CLE2G

Learning Objectives:

The objectives of the course is

1. To appreciate and analyse the dramatic elements in Hindi literature.
2. To understand the distinct features Hindi short stories and One Act Play.
3. To understand the importance and process of translation and the qualities of translators.
4. To understand the importance of vocabularies.

I YEAR – II SEMESTER

PAPER–II – ONE ACT PLAY, SHORT STORY & TRANSLATION

I . ONE ACT PLAY (Detailed Study): AATH EKANKI

Edited By: Devendra Raj Ankur, Mahesh Aanand

Vani prakashan, 4695, 21-A Dariyagunj,; New Delhi – 110 002

LESSONS PRESCRIBED :

1. Aurangazeb ki Aakhari Raat
2. Laksmi Ka Swagat
3. Basant Ritu ka Naatak
4. Bahut Bada Sawal

II. SHORT STORIES (Non- Detailed Study):

SWARNA MANJARIEdited by: Dr. Chitti. Annapurna

Rajeswari Publications

21/3, Mothilal Street,
(Opp. Ranganathan Street),
T. Nagar, Chennai – 600 017.

LESSONS PRESCRIBED :

1. Mukthidhan
2. Mithayeewala
3. Seb aur Dev
4. Vivah ki Teen Kathayen

III. **TRANSLATION PRACTICE** : (English to Hindi)

BOOKS FOR REFERENCE :

1. Prayojan Moolak Hindi :	Dr. Syed Rahamathulla Poornima Prakashan, 4/7, Begum III Street,Royapettah, Chennai – 14.
2. Anuvad Abhyas Part III	Dakshin Bharat Hindi Prachar Sabha T. Nagar, Chennai -17.

UNITISED SYLLABUS

UNIT – I

1. Auranzeb ki Aakhiri Raat
2. Mukthidhan
3. Practice of Annotation Writing
4. Practice of Summary and Literary evaluation Writing

UNIT – II

1. Laksmi ka Swagat
2. Mithayeewala
3. Practice of Annotation Writing
4. Practice of Summary and Literary evaluation Writing

UNIT-III

1. Basant Ritu ka Natak
2. Seb Aur Dev
3. Practice of Annotation Writing
4. Practice of Summary and Literary evaluation Writing

UNIT-IV

1. Bahut Bada Sawal
2. Vivah ki Teen Kathayen
3. Practice of Annotation Writing
4. Practice of Summary and Literary evaluation Writing

UNIT-V

1. Translation Practice. (English to Hindi)

Learning Outcomes :

1. Understand the role of Hindi short stories and One Act Play in the development of the society.
2. Knowledge about the importance of cultural, social and moral responsibility of human beings.
3. Inculcating the habit of book reading to gain knowledge of vocabularies.
4. Understanding the importance of art of translation.

Communicative English - II
I UG - B.COM / B.Sc / BCA
Even Semester

Course Objectives:

- To train students on functional English including language proficiency- Grammar & Vocabulary building.
- To equip them with essential career/job oriented skills - Presentation (PPT techniques), formal communication (email, report writing, etc)
- To teach them formal meeting etiquettes: both face-face and virtual mode.
- To prep students to face interviews.
- Encourage and guide students on opinion writing, reviews and feature writing.

Recommended Book:

Communicative English - Semester II - E book by Tamil Nadu State Council For Higher Education (TANSCHE)

SYLLABUS

Semester II

Unit I (18 hours)

1. Listening and Speaking

a. Listening and responding to complaints (formal situation)

b. Listening to problems and offering solutions (informal)

2. Reading and writing

a. Reading aloud (brief motivational anecdotes)

b. Writing a paragraph on a proverbial expression/motivational idea.

3. Word Power/Vocabulary

a. Synonyms & Antonyms

4. Grammar in Context

- Adverbs
- Prepositions

Unit II (20 hours)

1. Listening and Speaking

a. Listening to famous speeches and poems

b. Making short speeches- Formal: welcome speech and vote of thanks.

Informal occasions- Farewell party, graduation speech

2. Reading and Writing

a. Writing opinion pieces (could be on travel, food, film / book reviews or on any contemporary topic)

b. Reading poetry

b.i. Reading aloud: (Intonation and Voice Modulation)

b.ii. Identifying and using figures of speech - simile, metaphor, personification etc.

3. Word Power

a. Idioms & Phrases

4. Grammar in Context

Conjunctions and Interjections

Unit III (18 hours)

1. Listening and Speaking

a. Listening to Ted talks

b. Making short presentations – Formal presentation with PPT, analytical presentation of graphs and reports of multiple kinds

c. Interactions during and after the presentations

2. Reading and writing

a. Writing emails of complaint

b. Reading aloud famous speeches

3. Word Power

a. One Word Substitution

4. Grammar in Context: Sentence Patterns

Unit IV (16 hours)

1. Listening and Speaking

a. Participating in a meeting: face to face and online

b. Listening with courtesy and adding ideas and giving opinions during the meeting and making concluding remarks.

2. Reading and Writing

a. Reading visual texts – advertisements

b. Preparing first drafts of short assignments

3. Word Power

a. Denotation and Connotation

4. Grammar in Context: Sentence Types

Unit V (18 hours)

1. Listening and Speaking

a. Informal interview for feature writing

b. Listening and responding to questions at a formal interview

2. Reading and Writing

a. Writing letters of application

b. Readers' Theatre (Script Reading)

c. Dramatizing everyday situations/social issues

through skits. (writing scripts and performing)

3. Word Power

a. Collocation

4. Grammar in Context: Working With Clauses

Learning outcome:

- Students show progress in language proficiency.
- Better equipped with necessary job skills.
- Show confidence to face job interviews.
- Encouraged to voice their thoughts, students began to express themselves through blog writing, articles contribution, online reviewing of products and films.
- Show better understanding of nuances in formal communication and etiquettes.

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SEMESTER – II

YEAR : I

Name of the Subject : Object Oriented Programming Concepts using C ++

Subject Code : SU22A

Learning Objectives:

- To inculcate knowledge on Object-oriented programming concepts using C++.
- To gain Knowledge on programming with C++.

Syllabus:

UNIT - I

Introduction to C++ - key concepts of Object-Oriented Programming –Advantages – Object Oriented Languages – I/O in C++ - C++ Declarations. Control Structures : - Decision Making and Statements : If ..else, jump, goto, break, continue, Switch case statements - Loops in C++: for, while, do - functions in C++ - inline functions – Function Overloading.

UNIT - II

Classes and Objects: Declaring Objects – Defining Member Functions – Static Member variables and functions – array of objects –friend functions – Overloading member functions– Bit fields and classes – Constructor and destructor with static members.

UNIT- III

Operator Overloading: Overloading unary, binary operators – Overloading Friend functions – type conversion – Inheritance: Types of Inheritance – Single, Multilevel, Multiple, Hierarchal, Hybrid, Multi path inheritance – Virtual base Classes – Abstract Classes.

UNIT - IV

Pointers – Declaration – Pointer to Class , Object – this pointer – Pointers to derived classes and Base classes – Arrays – Characteristics – array of classes – Memory models – new and delete operators – dynamic object – Binding, Polymorphism and Virtual Functions.

UNIT - V

Files – File stream classes – file modes – Sequential Read / Write operations – Binary and ASCII Files – Random Access Operation – Templates – Exception Handling - String – Declaring and Initializing string objects – String Attributes – Miscellaneous functions .

TEXT BOOK:

1. E. Balagurusamy, "Object-Oriented Programming with C++", TMH 2013, 7th Edition.

REFERENCE BOOKS:

1.Ashok N Kamthane, "Object-Oriented Programming with ANSI and Turbo C++", Pearson Education 2003.

2.Maria Litvin& Gray Litvin, "C++ for you", Vikas publication 2002.

WEB REFERENCES:

- NPTEL & MOOC courses titled Object oriented programming concepts using C++
- https://alison.com/course/introduction-to-c-plus-plus-programming

Learning Outcomes:

- ❖ To write programs using OOP concepts like Abstraction, Encapsulation, Inheritance and Polymorphism
- ❖ Analyze, write, debug, and test basic C++ codes
- ❖ Illustrate the process of data file manipulations using C++

SEMESTER – II

YEAR: I

Name of the Subject : Practical II / C++ Programming Lab

Subject Code : SU221

Learning Objectives:

- To implement the various object oriented programming concepts using C++

Syllabus:

1.Write a C++ program to demonstrate function overloading, Default Arguments and Inline function.

2.Write a C++ program to demonstrate Class and Objects

3.Write a C++ program to demonstrate the concept of Passing Objects to Functions

4.Write a C++ program to demonstrate the Friend Functions.

5.Write a C++ program to demonstrate the concept of Passing Objects to Functions

6.Write a C++ program to demonstrate Constructor and Destructor

7.Write a C++ program to demonstrate Unary Operator Overloading

8.Write a C++ program to demonstrate Binary Operator Overloading

9.Write a C++ program to demonstrate:

- Single Inheritance
- Multilevel Inheritance
- Multiple Inheritance
- Hierarchical Inheritance
- Hybrid Inheritance

10. Write a C++ program to demonstrate Virtual Functions.

11. Write a C++ program to manipulate a Text File.
12. Write a C++ program to perform Sequential I/O Operations on a file.
13. Write a C++ program to find the Biggest Number using Command Line Arguments
14. Write a C++ program to demonstrate Class Template
15. Write a C++ program to demonstrate Function Template.
16. Write a C++ program to demonstrate Exception Handling.

Learning Outcomes:

- To understand the structure and model of the C++ programming language.
- To solve problems in C++ demonstrating Object Oriented Concepts.

UNIVERSITY OF MADRAS
U.G. DEGREE COURSE
SYLLABUS WITH EFFECT FROM 2020-2021

BMA-CSA02

ALLIED MATHEMATICS –II

Credits: 5 **Year: I/II, Sem:II/IV**

LEARNING OUTCOMES:

- Students gain knowledge about basic concepts of Differential Equations, Laplace Transforms, Vector Analysis and Calculus.

UNIT I

Integral Calculus:Bernoullis formula – Reduction formulae-$\int_0^{\pi/2} sin^n x\, dx$, $\int_0^{\pi/2} cos^n x\, dx$,$\int_0^{\pi/2} sin^m x cos^n x dx$(m,n being positive integers), Fourier series for functions in $(0,2\pi)$, $(-\pi, \pi)$.

Chapter 2: Section 2.7 & 2.9 , Chapter 4: Section 4.1.

UNIT II

Differential Equations:

Ordinary Differential Equations: second order non- homogeneous differential equations with constant coefficients of the form ay" +by'+ cy = X where X is of the form $e^{\alpha x} \cos \beta x$ and $e^{\alpha x} \sin \beta x$ -Related problems only.

Partial Differential Equations: Formation, complete integrals and general integrals, four standard types and solving Lagrange's linear equation P p +Q q= R.

Chapter 5: Section 5.2.1, Chapter 6: Section 6.1 to 6.4

UNIT III

Laplace Transforms: Laplace transformations of standard functions and simple properties, inverse Laplace transforms,Application to solution of linear differential equations up to second order- simple problems.

Chapter 7: Section 7.1.1 to 7.1.4& 7.2 to 7.3

UNIT IV

Vector Differentiation: Introduction, Scalar point functions, Vector point functions, Vector differential operatorGradient,Divergence, Curl, Solenoidal, irrotational, identities.

Chapter 8, Section 8.1 to 8.4.4

UNIT V

Vector Integration:Line, surface and volume integrals, Gauss, Stoke's and Green's theorems (without proofs). Simple problems on these.

Chapter 8, Section 8.5 to 8.6.3.

UNIVERSITY OF MADRAS
U.G. DEGREE COURSE
SYLLABUS WITH EFFECT FROM 2020-2021

Content and treatment as in
Allied Mathematics, Volume I and II , P. Duraipandian and S. Udayabaskaran, S. Chand Publications.

Reference:-

1. S. Narayanan and T.K. Manickavasagam Pillai – Ancillary Mathematics, S. Viswanathan Printers, 1986, Chennai.
2. Allied Mathematics by Dr. A. Singaravelu, Meenakshi Agency.

e-Resources:

1. **http://www.sosmath.com**
2. **http://www.analyzemath.com/Differential_Equations/applications.html**

PROFESSIONAL ENGLISH FOR PHYSICAL SCIENCES
I UG – B.Sc / BCA
EVEN SEMESTER

INTRODUCTION

In order to prepare the new generation ESL learners for the globalizing Science, Technology, Engineering and Mathematics (STEM) workplace, Professional English for Physical Sciences - II is a specialized syllabus that combines various pedagogies to improve students' 21st century skills specifically in communication.

COURSE OBJECTIVE

The language course will help learners to,

- Understand the key aspects of communication as a vital tool in workplace and for effective collaboration in interpersonal relationships.
- Bridge high technical knowledge with communicative competence so as to express opinions in clear, simple and persuasive manner.
- Articulate thoughts efficiently and creatively using all forms of communication in a variety of contexts.

SYLLABUS

RECOMMENDED BOOK: Professional English for B.Sc Physical Sciences by TamilNadu State Council for Higher Education (TANSCHE)

Unit 1 (10 Hours) **COMMUNICATIVE COMPETENCY**	**Listening:** Listening to Short Videos **Speaking:** Story Telling and Group Discussion, Brain Storming, Pronunciation **Reading:** Comprehension Passages: Identifying the Vocabulary and the problem discussed in the passage **Writing:** Summary Writing **Vocabulary:** Register specific – Incorporated into the LSRW skills
Unit 2 (10 Hours) **PERSUASIVE COMMUNICATION**	**Listening:** Listen to the video of product launch of a fitness tracker. Arranging points in a chronological manner and difference between debate and JAM **Speaking:** Speaking individually and groups **Reading:** Reading and understanding Argumentative Essay **Writing:** Based on video of Natural

	Language Processing writing reports, opinion writing essay writing and dialogue writing **Vocabulary:** Register specific – Incorporated into the LSRW skills
Unit 3 (10 Hours) **DIGITAL COMPETENCY**	**Listening:** Listening to Interviews. Problem solution, Evaluation in scientific texts **Speaking:** Role play of student and teacher **Reading:** Passage Reading, Note Taking and Story Telling through Fibonocci series **Writing:** Categorizing words according to function and creating webpage. **Vocabulary:** Register specific – Incorporated into the LSRW skills
Unit 4 (5 Hours) **CREATIVITY AND IMAGINATION**	**Listening:** Listening to creative science based inventions **Speaking:** Describing process creatively **Reading:**Reading Comprehension Passages. **Writing:** Creating web pages, blogs, flyers and brochures, poster making, script writing **Vocabulary:** Register specific – Incorporated into the LSRW skills
Unit 5 (5 Hours) **WORKPLACE COMMUNICATIONAND BASICS OF ACADEMIC WRITING**	**Listening:** Workplace communication **Speaking:** Academic Powerpoint Presentations (with PPT –practice) **Reading:** Reading Comprehension Passages – Note making. Comprehension: Motivational article on Professional Competence, Professional Ethics and Life Skills. **Writing:** Product Description, Drafting a Circular, Writing minutes of a meeting, Writing introduction, paraphrase and summary, Punctuations. **Vocabulary:** Register specific – Incorporated into the LSRW skills

LEARNING OUTCOME

Upon completion of the programme,

- Learners are able to communicate for a variety of purposes and audiences.
- Understand the use of media and technology to communicate with impact.
- Develop their own critical and creative perspectives to communicate and fulfill their personal and professional requirements.

சென்னைப் பல்கலைக்கழகம்

அடிப்படைத்தமிழ் - நோக்கும் கற்றல் பயன்பாடும்

அண்ணா ஆதர்ஷ் மகளிர் கல்லூரி, சென்னை

தமிழ்த்துறை

முதலாமாண்டு (2021 -2022)

அடிப்படைத் தமிழ் - இரண்டாம்பருவம்

பாடத்திட்டத்தின் நோக்கம் (Objective)

தமிழ்மொழியைப் பேசவும் எழுதவும் படிக்கவும் தெரியாத மாணவர்கள் அடிப்படைத்தமிழ் பாடம் படித்துப் பயன்பெறும் நோக்கில் பாடத்திட்டம் அமைகிறது. அண்டை மாநிலங்களிலிருந்தும் பிற நாடுகளிலிருந்தும் இளங்கலை, இளம் அறிவியல் பட்டம் பெறும் மாணவர்கள் தமிழ் நாட்டின் மாநில மொழியைப் பேசவும் எழுதவும் துணைபுரியும் வகையில் பாடத்திட்டம் வடிவமைக்கப்பட்டுள்ளது.

இம்மாணவர்கள் இரண்டாம் பருவத்தில் தமிழ் மொழியிலுள்ள சிறு சிறு இலக்கியப்பகுதிகளைப் படிப்பர். சிறு கதைகள், சுற்றுலாத்தலங்கள், தமிழ் இலக்கியங்களின் வரலாறு ஆகியவற்றைப் புரிந்துகொள்ளும் நோக்கில் பாடத்திட்டம் அமைகிறது.

பாடத்திட்டம் (SYLLABUS)

அலகு -1.

நீதி நூல்கள்

1. ஆத்திச் சூடி(1-12), 2. கொன்றை வேந்தன்(1-8),

3. திருக்குறள்(5)

1. அகர முதல ..... (1), 2. செயற்கரிய ..... (26), 3. மனத்துக்கண் ..... (34), 4. கற்க கசடறக்..... (391), 5. எப்பொருள் ..... (423).

அலகு - 2.

நீதிக் கதைகள்

1. பீர்பால் கதை, 2. பரமார்த்த குரு கதை

அலகு - 3.

அறிமுகம்

அ. தமிழ் இலக்கிய வரலாறு - இலக்கியங்கள் புலவர்கள்

ஆ.தமிழக வரலாறு - வரலாற்றுச் சின்னங்கள்- சுற்றுலாத்தலங்கள்- அலுவலகப் பெயர்கள்

இ.பழமொழிகள்.

பாடத்திட்டத்தின் பயன்கள் (Subject Outcome)

தமிழ் இலக்கியத்தின் சிறப்பினையும் தமிழ் மொழியின் சிறப்பினையும் மொழிவளத்தையும் அறிந்து கொள்ள உதவுகிறது. தமிழக மக்களின் பண்பாட்டுக்கூறுகளை உணர்ந்து கொள்ளுதல்

பாட நூல்

தமிழ் – பகுதி 4 - சென்னைப் பல்கலைக்கழகம் அடிப்படைத் தமிழுக்குப் பாடத்திட்டங்கள் மட்டுமே வரையறுத்துள்ளது. அதை நூலாக வெளியிடவில்லை. எனவே, பாடநூல் இல்லை.

Reference book

தமிழ் – பகுதி 4 - சென்னைப் பல்கலைக்கழகம் வடிவமைத்த பாடத்திட்டங்கள் ஆகையால் குறிப்புதவிநூல் என்று தனியாக இல்லை. (Reference book not applicable)

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சென்னைப் பல்கலைக்கழகம்

சிறப்புத்தமிழ் - நோக்கும் கற்றல் பயன்பாடும்

அண்ணா ஆதர்ஷ் மகளிர் கல்லூரி, சென்னை

தமிழ்த்துறை

முதலாமாண்டு (2021 -2022)

சிறப்புத் தமிழ் - இரண்டாம்பருவம்

பாடத்திட்டத்தின் நோக்கம் (Objective)

இப்பாடத்திட்டம் பள்ளிகளில் சில வகுப்புகள் வரையில் மட்டுமே தமிழைப் படித்துக் கல்லூரிகளில் பிற மொழி கற்பவர்களுக்காக வடிவமைக்கப்படுகிறது. இங்கு தொடக்க கால செய்யுள் முதல் தற்கால புதுக்கவிதை வரை உள்ள ஒருசில பகுதிகள் அமைந்துள்ளன. அனைத்துக் கால இலக்கியங்களின் தன்மையை உணர்ந்துகொள்ளுதல். தமிழ் இலக்கியப்பகுதியும், தமிழிலக்கிய வரலாற்றுப்பகுதியும், மொழிப்பயிற்சியும் பாடமாக அமைகிறது.

பாடத்திட்டம் (SYLLABUS)

பாடப்பகுப்பு

I. இலக்கியம்

II. அதைச் சார்ந்த தமிழிலக்கிய வரலாறு

III. மொழிப் பயிற்சி

அலகு - 1

கட்டுரை

1. பெண்ணின் பெருமை-திரு.வி.க

அலகு -2.

செய்யுள்

1. புறநானூறு - அ. கெடுகசிந்தை-ஓக்கூர் மாசாத்தியார்,

ஆ. ஈன்று புறந்தருதல் - பொன்முடியார், இ. யாதும் ஊரே - கனியன்பூங்குன்றனார்

ஈ. திருக்குறள் - வான் சிறப்பு முழுமையும்

உ. சிலப்பதிகாரம் - மங்கல வாழ்த்துப் பாடல்

ஊ. திருவாசகம் - வேண்டத்தக்கது

எ. திருவாய்மொழி - உயர்வற

ஏ. இரட்சண்ய யாத்ரிகம் (சிலுவைப்பாடு)-பாடல்எண்-1,3.4

ஐ. சீறாப்புராணம் - வானவர்க்கும்

ஒ. பாரதியார்- நல்லதோர்வீணை

அலகு -3.

இலக்கிய வரலாறு

பாடம் தழுவிய இலக்கிய வரலாறு

அலகு -4.

மொழிபெயர்ப்பு

ஆங்கிலப் பகுதியைத் தமிழாக்கம் செய்தல்

பாடத்திட்டத்தின் பயன்கள் (Subject Outcome)

தமிழ் மொழி, தமிழ் இலக்கியத்தின் தொன்மையை அறிதல். தமிழ் மக்களின் பண்பாட்டைக் கால வாரியாக உணர்ந்து கொள்ளுதல். மொழிபெயர்ப்புத்துறையிலும் செயலாற்ற முடியும்

பாட நூல்

தமிழ் – பகுதி 4 - சென்னைப் பல்கலைக்கழகம் அடிப்படைத் தமிழுக்குப் பாடத்திட்டங்கள் மட்டுமே வரையறுத்துள்ளது. அதை நூலாக வெளியிடவில்லை. எனவே, பாடநூல் இல்லை.

Reference book

தமிழ் – பகுதி 4 - சென்னைப் பல்கலைக்கழகம் வடிவமைத்த பாடத்திட்டங்கள் ஆகையால் குறிப்புதவிநூல் என்று தனியாக இல்லை. (Reference book not applicable)

SEMESTER - II

YEAR : I

Subject Name : EVERYDAY BANKING (NME)

Subject Code : AY52A

Learning Objectives:

- To facilitate the students to understand the concept of everyday banking.
- To Know the basic techniques of the modern forms of Banking

Syllabus:

UNIT- I

Banking – Definition – Pass book – Cheque book – Format of Cheque – Filling up of Chequ e- Deposit Challan – Filling up – Clearing cheque – Transfer cheque – Collection Cheque – Payable at par – Demand Draft – application filling – Account Opening form – Filling up – Documents required - Debit Card – Credit Card – ATM Machine – Cash Deposit Machine – Pass book printing machine. MICR- IFSC- Fund transfer through ECS – NEFT – RTGS – Form filling for Fund transfer.

UNIT- II

On line Banking – Sign up – Process – Requirements – Log in – Customer ID – User ID – Pass word – Hints for creating Pass words – change of pass word – on line transactions – Account statements – Fund Transfer – Payment of bills – Utility payments – Loans – Repayment for Loans – other services. Mobile Banking – meaning – importance – Advantages – Mobile Applications (App) – WAP (Wireless Application Protocol)- USSD (Unstructured Supplementary Service Data)- Registration process – through Mobiles – Process at Bank Branch – ATMUser ID-MPIN- change of MPIN –IMPS D(Immediate

Mobile Payment System) - UPI(Unified Payment interface) – BHIM(Bharat Interface for money)- NPCI (National Payment Corporation of India) - Bank account Management – Transfer Funds – paying Bills – Locating ATMs - QR code payments- Alerts and notifications- Tracking Spending habits – Cash back - Safe banking methods.

Suggested Readings:

1. B.Santhanam - Banking & Financial systems, Margham Publications
2. S.N.Maheshwari Banking theory, Law and practice, Kalyani Publications
3. Parameswaran- Indian Banking, S.Chand & Co.

Web References:

1. https://en.wikipedia.org/wiki/Online_banking
2. https://www.sbi.co.in/portal/web/services/internet-banking
3. https://www.hdfcbank.com/assets/popuppages/netbanking.htm
4. https://www.investopedia.com/terms/m/mobile-banking.asp
5. www.scotiabank.com/mobile/ca/en/0,,5181,00.html

Learning Outcomes:

- Students understand the concept of everyday banking.
- Students would be aware of the different type's modern Banking and how they are helpful for the daily operations in the business and Individuals.
- To provide functional disclosure to students relating banking correspondence, insurance correspondence agency correspondence etc.,

SEMESTER - III

YEAR: II

SUBJECT: DATA STRUCTURES

SUBJECT CODE: SZ23A

Learning Objectives:

- To understand the concepts of ADTs
- To learn linear data structures - lists, stacks, queues
- To apply Tree and Graph structures
- To understand sorting, searching and hashing

Syllabus:

UNIT - I

Abstract Data Types (ADTs) - List ADT - array-based implementation - Linked list implementation - Singly linked lists - Circular linked lists - Doubly-Linked lists-Applications of lists - Polynomial Manipulation- All operations – Insertion – Deletion –Merge -Traversal.

UNIT - II

Stack ADT – Operations – Applications - Evaluating arithmetic expressions – Conversion of infix to postfix expression - Queue ADT – Operations - Circular Queue- Priority Queue – deQueue - Applications of queues.

UNIT - III

Tree ADT - Tree traversals - Binary Tree ADT - Expression trees - Applications of trees -Binary search tree ADT - Threaded Binary Trees - AVL Trees - B-Tree - B+ Tree – Heap - Applications of heap.

UNIT - IV

Definition - Representation of Graph- Types of graph - Breadth First traversal – Depth First traversal - Topological sort - Bi-connectivity – Cut vertex - Euler circuits -Applications of graphs.

UNIT - V

Searching - Linear search - Binary search – Sorting - Bubble sort - Selection sort-Insertion sort - Shell sort - Radix sort – Hashing - Hash functions - Separate chaining - Open Addressing – Rehashing - Extendible Hashing.

TEXT BOOKS:

1.Mark Allen Weiss, "Data Structures and Algorithm Analysis in C++", Pearson Education 2014, 4th Edition.

2.Reema Thareja, "Data Structures Using C", Oxford Universities Press 2014, 2nd Edition.

REFERENCE BOOKS:

1.ThomasH.Cormen, Chales E.Leiserson, Ronald L.Rivest, Clifford Stein, "Introduction to Algorithms", McGraw Hill 2009, 3rd Edition.

2.Aho, Hopcroft and Ullman, "Data Structures and Algorithms", Pearson Education 2003.

WEB REFERENCES:

- NPTEL & MOOC courses titled Data Structures
- https://nptel.ac.in/courses/106106127/

Learning Outcomes:

- Implement abstract data types for linear data structures.
- Apply the different linear and non linear data structures to problem solutions.
- Critically analyze the various sorting algorithms.

SEMESTER - III

YEAR : II

Name of the Subject : JAVA PROGRAMMING

Subject Code : SZ23B

Learning Objectives:

- To understand the concepts of Object Oriented Programming.
- To learn about the control structures, class with attributes and methods used in Java.
- To learn how to implement object-oriented designs with Java.
- To learn how to design a graphical user interface (GUI) with Java
- To understand how to use Java APIs for program development.

Syllabus:

UNIT - I

Introduction to OOPS: Paradigms of Programming Languages – Basic concepts of Object Oriented Programming – Differences between Procedure Oriented Programming and Object Oriented programming - Benefits of OOPs – Application of OOPs. Java: History – Java features – Java Environment – JDK – API. Introduction to Java: Types of java program – Creating and Executing a Java program – Java Tokens- Java Virtual Machine (JVM) – Command Line Arguments –Comments in Java program.

UNIT - II

Elements: Constants – Variables – Data types - Scope of variables – Type casting – Operators: Special operators – Expressions – Evaluation of Expressions. Decision making and branching statements- Decision making and Looping– break – labeled loop – continue Statement. Arrays: One Dimensional Array – Creating an array – Array processing – Multidimensional Array – Vectors – ArrayList – Advantages of Array List over Array Wrapper classes.

UNIT - III

Class and objects: Defining a class – Methods – Creating objects – Accessing class members – Constructors – Method overloading – Static members –Nesting of Methods – this keyword – Command line input. Inheritance: Defining inheritance –types of inheritance – Overriding methods – Final variables and methods – Final classes – Final methods - Abstract methods and classes – Visibility Control- Interfaces: Defining interface – Extending interface - Implementing Interface - Accessing interface variables. Strings: String Array – String Methods – String Buffer Class.

UNIT - IV

Packages: Java API Packages – System Packages – Naming Conventions –Creating & Accessing a Package – Adding Class to a Package – Hiding Classes. Exception Handling: Limitations of Error handling – Advantages of Exception Handling - Types of Errors – Basics of Exception Handling –Try blocks – throwing an exception – Catching an exception – finally statement. Multithreading: Creating Threads – Life of a Thread –Defining & Running Thread – Thread Methods – Thread Priority – Synchronization–Implementing Runnable interface – Thread Scheduling.

UNIT - V

I/O Streams: File – Streams – Advantages - The stream classes – Byte streams –Character streams. Applets: Introduction – Applet Life cycle – Creating & Executing an Applet–Applet tags in HTML – Parameter tag – Aligning the display - Graphics Class: Drawing and filling lines – Rectangles – Polygon – Circles – Arcs – Line Graphs – Drawing Bar charts AWT Components and Even Handlers: Abstract window tool kit – Event Handlers – Event Listeners – AWT Controls and Event Handling: Labels – Text Component – Action Event – Buttons – Check Boxes – Item Event – Choice– Scrollbars – Layout Managers- Input Events – Menus.

TEXT BOOKS:

1.E. Balagurusamy, “Programming with Java”, TataMc-Graw Hill, 5th Edition.

2.Sagayaraj, Denis, Karthick and Gajalakshmi, “Java Programming for Core and advanced learners”, Universities Press (INDIA) Private Limited 2018.

REFERENCES:

1.Herbert Schildt, “The complete reference Java”, TataMc-Graw Hill, 7th Edition.

WEB REFERENCES:

- NPTEL & MOOC courses titled Java
- https://nptel.ac.in/courses/106105191/

Learning Outcomes:

- Knowledge of the structure and model of the Java programming language.
- Understand the basic principles of creating Java applications with GUI.
- Demonstrate use of string and String Buffers, Develop multithreaded programs in Java.
- Read and make elementary modifications to Java programs that solve real-world problems.
- Identify Java code utilities in applets, Java packages, and classes.
- Write Java code using advanced Java features.

SEMESTER - III

Year: II

Subject Name: Computer Organization

Subject Code: SZ23C

Learning Objectives:

- To make the students realize the importance of hardware.
- To understand the basic organization of computers and the working of each component and CPU
- To bring the programming features of 8085 Microprocessor and know the features of latest microprocessors.
- To understand the principles of Interfacing I/O devices and Direct Memory accesses

Syllabus :

UNIT - I

Data representation: Data types – Complements- fixed point and floating point representation other binary codes. Register Transfer and Microoperations: Register transfer language - Register transfer- Bus and Memory transfers – Arithmetic, logic and shift micro operations.

UNIT - II

Central processing unit: General register and stack organizations- instruction formats - Addressing modes- Data transfer and manipulation - program control- RISC - Pipelining - Arithmetic and instruction- RISC pipeline - Vector processing and Array processors.

UNIT - III

Microprocessor Architecture and its Operations - 8085 MPU - 8085 Instruction Set and Classifications. Programming in 8085: Code conversion - BCD to Binary and Binary to BCD conversions - ASCII to BCD and BCD to ASCII conversions - Binary to ASCII and ASCII to Binary conversions.

UNIT - IV

Programming in 8085: BCD Arithmetic - BCD addition and Subtraction - Multibyte Addition and Subtraction - Multiplication and Division. Interrupts: The 8085 Interrupt – 8085 Vectored Interrupts.

UNIT - V

Direct Memory Access(DMA) and 8257 DMA controller - 8255A Programmable Peripheral Interface. Basic features of Advanced Microprocessors – Pentium - I3, I5 and I7.

Textbooks:

1.M.M. Mano, "Computer System architecture". Pearson, Third Edition, 2007.

2.R.S. Gaonkar- "Microprocessor Architecture- Programming and Applications with 8085"- 5th Edition- Penram- 2009.

3.TriptiDodiya & Zakiya Malek,"Computer Organization and Advanced Microprocessors", Cengage Learning, 2012.

Reference Books:

1. Mathur- "Introduction to Microprocessor"- 3rd Edition- Tata McGraw-Hill-1993.
2. P.K. Ghosh and P. R. Sridhar- "0000 to 8085: Introduction to Microprocessors for Engineers and Scientists"- 2nd Edition- PHI- 1995.
3. NagoorKani- "Microprocessor (8085) and its Applications"- 2nd Edition- RBA Publications- 2006.
4. V. Vijayendran- "Fundamentals of Microprocessors – 8085"- S. Viswanathan Pvt.Ltd.- 2008.

Learning Outcomes:

- Understand about concepts of Computer Organization and design.
- Understand the principles and the implementation of computer arithmetic.
- Understand CPU basics, Stack Organization, Instruction format, Addressing formats. Include the interrupts and direct memory access and clasp the standard I/O devices.
- Able to find the various instruction type and addressing modes used for programming.
- Demonstrate the ability to program a microprocessor in assembly language.
- Classify and describe the operation DMA and peripheral Interfaces.

SEMESTER - III

YEAR : II

Name of the Subject : DATA STRUCTURES USING JAVA LAB

Subject Code : SZ231

Learning Objectives:

- To implement linear and non-linear data structures
- To understand the different operations of search trees
- To implement graph traversal algorithms
- To get familiarized to sorting and searching algorithms

LIST OF EXERCISES:

1. Write a Java programs to implement the List ADT using arrays and linked lists.
2. Write a Java programs to implement the following using a singly linked list. StackADT (b) QueueADT
3. Write a java program that reads an infix expression, converts the expression to postfix formand then evaluates the postfix expression (use stack ADT).
4. Write a Java program to implement priority queue ADT.
5. Write a Java program to perform the following operations:
   (a) Insert an element into a binary search tree.
   (b) Delete an element from a binary search tree.
   (c) Search for a key element in a binary search tree.
6. Write a Java program to perform the following operations
   (a) Insertion into an AVL-tree
   (b) Deletion from an AVL-tree
7. Write a Java programs for the implementation of BFS for a given graph.

8. Write a Java programs for the implementation of DFS for a given graph.
9. Write a Java programs for implementing the following searching methods:
    (a) Linear search
    (b) Binary search.
10. Write a Java programs for implementing the following sorting methods:
    (a) Bubble sort
    (b) Selection sort
    (c) Insertion sort
    (d) Radix sort

Learning Outcomes:

- Write functions to implement linear and non-linear data structure operations.
- Suggest appropriate linear and non-linear data structure operations for solving a givenproblem.
- Analyze various sorting methods.

SEMESTER - III

YEAR : II

Name of the Subject : Financial Accounting (Allied Paper)

Subject Code : SZ33A

Learning Objectives:

- To enable the students to understand the system of preparing financial statement for various types of organisation.
- To familiarize the students with knowledge about financial reporting standard

Syllabus:

UNIT – I

Meaning and scope of accounting – Basic accounting concepts and conversions Objectives of accounting – Accounting transaction double entry book keeping journal, Ledger preparation of trial balance, Preparation of cash book, course outline .

UNIT – II

Preparation of final accounts of sole trading concerns adjustments to final accounts.

UNIT – III

Departmental accounts : Basis for allocation of expenses – Inter departmental transfer at cost or selling price – Treatment of expenses which cannot be allocated

UNIT – IV

Depreciation meaning, causes, types of problems based on straight line and diminishing balance methods

UNIT – V

Meaning, features, defects, statement of affairs method and conversion method, (problems on statement of affairs method only).

Reference Books :

1. Financial Accounting - Reddy And Murthy,
2. Financial Accounting - Dr. M. V. Nagarajan
3. Financial Accounting - R. L. Gupta and V. K. Gupta

Learning Outcomes:

- The students will be able to analyze and prepare financial statement of different types of organization.
- The students will be aware of various amendments in financial reporting.

SEMESTER - III

SOFT SKILLS

YEAR : II

Subject Name : Personality Enrichment – Level I

Subject Code: TSSEG

Learning Objectives:

- To understand the relevance of appropriate self-expression.
- To appreciate the significance of negotiating emotions.
- To realize the contribution of interpersonal skills for success in life.
- To comprehend the role of goal setting and time management for achievement in all spheres.
- To learn skills for effective retention and recall.
- To acknowledge the role of soft skills as life skills.

Syllabus :

Unit 1- Self Disclosure

Characteristics of self disclosure – Self disclosure benefits and appropriateness – Self disclosure and self awareness – Self disclosure and feedback.

Exercises:

- ✓ Self Description– Reflect and answer the following questions on a sheet of paper about yourself: Who am I? What am I like? How do others perceive me? What are my strengths as a person? In what areas do I want to develop greater skills?
- ✓ Adjective Checklist – the following exercise is aimed at providing an opportunity for participants to disclose their view of themselves to the other members of their group and to receive feedback on how the other group members perceive them.

- ✓ Self Disclosure and Self Awareness – the purpose of this exercise is to allow participants to focus on the areas as described in the Johari Window.

Unit II – Anger, Stress and Managing Feelings

The nature of stress- managing stress through social support systems – the nature of anger – guidelines for managing anger constructively – dealing with an angry person.

Exercises:

- ✓ Handling put downs techniques practiced through role plays.
- ✓ Changing your feelings discuss how people can make their assumptions more constructively.
- ✓ Defusing the Bomb exercise discuss how one can manage provocations.

Unit III – Interpersonal Effectiveness

Managing anxiety and fear – Breathing – an antidote to stress – progressive muscle relaxation – understanding your shyness – building one' self esteem – avoiding self blame – taking risks, tolerating failure, persisting and celebrating success – self talk.

Exercises:

- ✓ Being positive about yourself
- ✓ Understanding your shyness analyze the social situation of shyness and the causes of your shyness.
- ✓ Systematic Muscle Relaxation train one in the procedure for systematic muscle relaxation.
- ✓ Learning how to breathe deeply help one to relax systematically when one is anxious by controlling one's breathing.

Unit IV: Study Skills

Importance of study environment – using VCR3 to increase memory power: visualizing, concentrating, relating, repeating, reviewing- memory hindrances – memory helpers – knowing vs memorizing – memory and studying – the SQ3R method; survey, write questions, read, recite , review – mnemonic devices – rhymes – acronyms – pegging – cooperative learning .

Exercise: Using the techniques of memory enhancers to review your classroom and textbook notes

Unit V: Goal Setting and Managing Time

The basis of effective goals – steps to be followed to obtain optimum results from goal setting – Identifying the reasons for procrastination – guidelines to overcome procrastination – priority management at home and college

Exercises:

- ✓ Steps to prepare one's short term goals and long term goals.
- ✓ Role play activity through reflection of identifying how priority management affect one's ability to live a balanced life.

References:

- ✓ Johnson, D.W. (1997). Reaching out – Interpersonal Effectiveness and Self Actualization. 6 th ed. Boston: Allyn and Bacon.
- ✓ Sherfield, R. M.; Montgomery, R.J. and Moody, P, G. (2010). Developing Soft Skills. 4th ed. New Delhi: Pearson.
- ✓ Robbins, S. P. and Hunsaker, Phillip, L. (2009). Training in Interpersonal skills. Tips for managing people at work. 5th ed. New Delhi: PHI Learning

Learning Outcomes:

- ❖ After completion of this paper the students will be able to:
- ❖ To express themselves better through enhanced self awareness.
- ❖ To recognize that balanced coping of emotions is crucial for personal success.
- ❖ To apply the tips for maintaining good interpersonal relationships in their lives.
- ❖ To set specific long term and short term goals and manage time effectively.
- ❖ To improve their capacity for memory.
- ❖ To justify how soft skills are life skills.

SEMESTER - IV

YEAR : II

Subject Name: Computer Networks

Subject Code: SZ24A

Learning Objectives:

- To realize the importance of basic networks and hardware.
- To understand the concept of Computer network
- To impart knowledge about networking and inter networking devices

Syllabus:

UNIT - I

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

UNIT - II

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

UNIT - III

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

UNIT - IV

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

UNIT - V

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

Textbook:

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

Reference Books:

1.Stallings, "Data and Computer Communications", Pearson Education 2012, 7 Edition.

2.B. A. Forouzan, "Data Communications and Networking", Tata McGraw Hill 2007, 4th Edition.

3.F. Halsall, "Data Communications, Computer Networks and Open Systems", Pearson Education 2008.

4.D. Bertsekas and R. Gallagher, "Data Networks", PHI 2008, 2 Edition.

5.Lamarca, "Communication Networks", Tata McGraw Hill 2002.

Learning Outcomes:

- Know the basic of networks, network types, reference models and its layers.
- Learn about different layers and protocols present in those layers. Obtain the knowledge about error detection and correction in Data link layer.
- Obtain the knowledge about packet switching network in Network layer.
- Understand the design issues in network security, security threats, security services.
- Ability to understand client/Server programming, WWW and Email using Application Layer.

SEMESTER - IV

YEAR : II

Subject Name: Open Source Technologies

Subject Code: SZ24B

Learning Objectives:

- To provide a basic idea of Open source technology, their software development process
- To understand the role and future of open source software in the industry along with the impact of legal, economic, and social issues for such software.
- Know how to use common open source tools

Syllabus:

UNIT- I

Introduction – Why Open Source – Open Source –Principles, Standards Requirements, Successes – Free Software – FOSS – Internet Application Projects

UNIT- II

Open source – Initiatives, Principles, Methodologies, Philosophy, Platform, Freedom, OSSD, Licenses – Copy right, Copy left, Patent, Zero Marginal Technologies, Income generation opportunities, Internalization

UNIT- III

Case Studies – Apache, BSD, Linux, Mozilla (Firefox), Wikipedia, Joomla, GCC, Open Office.

UNIT- IV

Open Source Project – Starting, Maintaining – Open Source – Hardware, Design, Teaching & Media

UNIT- V

Open Source Ethics – Open Vs Closed Source – Government – Ethics – Impact of Open source Technology – Shared Software – Shared Source

TEXT BOOK:

1. KailashVadera, Bhavyesh Gandhi, "Open Source Technology", Laxmi Publications Pvt Ltd 2012, 1st Edition.

REFERENCE BOOK:

1. Fadi P. Deek and James A. M. McHugh, "Open Source: Technology and Policy", Cambridge Universities Press 2007.

WEB REFERENCES:

- Coursera online course – Open Source Software Development Methods- https://www.coursera.org/learn/open-source-software-development methods

Learning Outcomes:

- ❖ To recognize the benefits and features of Open Source Technology like Linux, PERL, BIRT etc and to interpret, contrast and compare open source products among themselves.
- ❖ Ability to install and run open-source operating systems.
- ❖ Ability to gather information about Free and Open Source Software projects from software releases and from sites on the internet.
- ❖ Ability to build and modify one or more Free and Open Source Software packages.

SEMESTER - IV

YEAR : II

Name of the Subject : E-COMMERCE TECHNOLOGIES

Subject Code : SZ24C

Learning Objectives:

- To provide students with an overview and understanding of e-commerce with a specific emphasis on Internet Marketing.
- To explore the major issues associated with e-commerce-security, privacy, intellectual property rights, authentication, encryption, acceptable use policies, and legal liabilities.
- To understand the e-payment systems
- To understand the concept of Information System for Mobile Commerce

Syllabus:

UNIT - I

History of E-commerce and Indian Business Context: E-Commerce –Emergence of the Internet – Emergence of the WWW – Advantages of E-Commerce – Transition to E-Commerce in India – The Internet and India – E-transition Challenges for Indian Corporate. Business Models for E-commerce: Business Model – E-business Models Based on the Relationship of Transaction Parties - E-business Models Based on the Relationship of Transaction Types.

UNIT – II

Enabling Technologies of the World Wide Web: World Wide Web – Internet Client-Server Applications – Networks and Internets – Software Agents – Internet Standards and Specifications – ISP. e-Marketing :Traditional Marketing – Identifying Web Presence Goals – Online Marketing – E-advertising – E-branding.

UNIT – III

E-Security: Information system Security – Security on the Internet – E-business Risk Management Issues – Information Security Environment in India. Legal and Ethical Issues : Cyber talking – Privacy is at Risk in the Internet Age – Phishing – Application Fraud – Skimming – Copyright – Internet Gambling – Threats to Children.

UNIT – IV

e-Payment Systems: Main Concerns in Internet Banking – Digital Payment Requirements – Digital Token-based e-payment Systems – Classification of New Payment Systems – Properties of Electronic Cash – Cheque Payment Systems on the Internet – Risk and e-Payment Systems – Designing e-payment Systems – Digital Signature – Online Financial Services in India - Online Stock Trading.

UNIT – V

Information systems for Mobile Commerce: What is Mobile Commerce? – Wireless Applications –Cellular Network – Wireless Spectrum – Technologies for Mobile Commerce – Wireless Technologies –Different Generations in Wireless Communication – Security Issues Pertaining to Cellular Technology. Portals for EBusiness: Portals – Human Resource Management – Various HRIS Modules.

TEXT BOOK

1. P.T.Joseph, S.J., "E-Commerce - An Indian Perspective", PHI 2012, 4th Edition.

REFERENCE BOOKS

1. David Whiteley , "E-Commerce Strategy, Technologies and Applications", Tata McGraw Hill, 2001. 2. Ravi Kalakota, Andrew B Whinston, "Frontiers of Electronic Commerce", Pearson 2006, 12th Impression.

WEB REFERENCES

1.https://www.docsity.com/en/e-commerce-notes-pdf-lecture-notes-university-level/2484734/

2.https://magnetoitsolutions.com/blog/advantages-and-disadvantages-of-ecommerce

3.https://www.researchgate.net/publication/320547139ECommerce_Merits_and_Demerits_A_ Review_Paper

Learning Outcomes:

- Obtain a general understanding of basic business management concepts.
- Have complete knowledge about basic technical concepts relating to E-Commerce.
- Obtain thorough understanding about the security issues, threats and challenges of E-Commerce.
- Have complete knowledge about e-payment systems
- Understand the concept of Information System for Mobile Commerce

SEMESTER – IV

YEAR : II

Name of the Subject : OPEN SOURCE TECHNOLOGIES LAB

Subject Code : SZ241

Learning Objectives:

- To be aware of the various open source software available for different problem needs.
- To be familiar with the usage of the software like installation and configuration

Syllabus :

LIST OF EXERCISES:

1. Study and usage of Libre Office Suite – Writer, Calc& Impress
2. Text Processing with PERL
3. Simple Applications using PHP
4. Simple Applications using Python
5. Image editing using GIMP
6. Study and usage of Business Intelligence tools – BIRT, JMagallanes
7. Creation of network diagrams using GraphViz
8. Linux Installation
9. Software Configuration in Linux environment.
10. Version Control System using Git.

Learning Outcomes:

- Students must be able to use appropriate open source tools based on the nature ofthe problem
- Students should be able to code and compile different open source software

SEMESTER - IV

YEAR : II

Name of the Subject : Cost And Management Accounting(Allied Paper)

Subject Code : SZ34A

Learning Objectives:

- This subject introduces the concepts of Cost and Management Accounting in order to understand the effectiveness of cost control and taking prompt decisions.
- Management accounting helps to take effective decisions for better development of the organization.

Syllabus:

UNIT – I

Cost Accounting: Definition, Meaning and Objectives - Distinction between Cost and Financial Accounting. Elements of cost and preparation of cost sheets and tender. Management Accounting - Definition and objectives - Distinction between management and Financial Accounting**.**

UNIT – II

Stores Records - Purchase Order - Goods Received. Note - Bin Card - Stores Ledger - Purchase, Receipt and Inspection - Inventory Control - ABC Analysis - Economic Ordering Quality - Maximum, Minimum and Reordering levels - Methods of Pricing Issued.

UNIT – III

Labor: Importance of Labor Cost Control - Various Methods of Wage Payment - Calculation of Wages - Methods of Incentive for Schemes**.**

UNIT – IV

Overheads: Factory, Administration, Selling and Distribution of Overheads - Classification – Allocation and Apportionment - Redistribution (Secondary Distribution) - Absorption of Overheads including 'Machine Hour rate.

UNIT – V

Marginal Costing: The Concept - Break Even Analysis - Break - Even Chart - Importance and assumptions. Application of Profit Volumes Ratio - Budget and Budgetary Control: Procedure and Utility - Preparation of Different types of Budget including Flexible Budget.

Reference Books :

1. Cost Accounting and Management Accounting - Reddy and Murthy
2. Cost Accounting : Dr. M. V. Nagarajan
3. Management Accounting - Dr. M. V. Nagarajan.

Learning Outcomes:

- To learn the theory and practices of cost accounting.
- To understand the concepts of management accounting and on that basis, the firm is can be able to find out the efficiency and effectiveness of the firm.
- Through Cost accounting, cost reduction, cost control will be possible, that will help the management to get more profits.

SEMESTER - IV

SOFT SKILLS

YEAR : II

Subject Name : Personality Enrichment – Level II

Subject Code: TSSEH

Learning Objectives:

- To understand the nature, causes, symptoms and repercussions of stress.
- To recognize trust as a crucial factor for better work performance.
- To know how conflict resolution skill is a competitive advantage at work.
- To realize that emotional intelligences as important as academic intelligence for success in life.
- To appreciate the contribution of self esteem in building a positive personality.

Syllabus :

Unit 1: Stress Management

The Nature of Stress – A wellness Lifestyle – Distress symptoms: emotional distress, cognitive distress, behavioural distress, physical distress symptoms – managing stress: exercise, nutrition, sleep, healthy pleasures – self talk and stress – Relaxation Methods: breathing techniques, meditation techniques, visualization techniques – self hypnosis- muscle relaxation techniques – Using social support.

Exercises:

- ✓ Distressors and Distress Symptoms
- ✓ Identifying Personal uses for self talk management
- ✓ Social support networks from which you draw and networks through which you give social support

Unit 2: Maintaining Trust

Developing and maintaining trust – being trusting and trustworthy – building interpersonal trust – re-establishing trust after it has been broken – trusting appropriately – trust and friendship. Exercises:

- ✓ Practicing Trust Building Skills
- ✓ Developing Trust

Unit 3: Resolving Interpersonal Conflicts

Understanding conflicts of Interests- conflict strategies – negotiating to win – negotiating to solve the problems – steps for effective problem solving negotiating – refusal skills.

Exercises:

- ✓ Non verbal conflict
- ✓ Confronting the opposition
- ✓ Using the conflict strategies – role playing

Unit 4: Applying Emotional Intelligence

Emotional Intelligence and emotional competence - components of emotional intelligence – behavioural skills of emotional intelligence.

Exercise: Role model using a modelling/group exercise

Unit 5: Enhancing self esteem

Self theory and the Johari window- Characteristics of fully functioning individuals – manifestations of low and high self esteem – techniques for enhancing self esteem – nurturance techniques

Exercises:

- ✓ Weakness-strength
- ✓ Managing your identified areas of self criticism and dealing with negative messages.
- ✓ Nurturing relationships

References:

- ✓ Schafer, W. (1998). Stress Management for Wellness. 4 th edition. Australia: Thomson & Wadswoth.
- ✓ Johnson, D.W. (1997). Reaching out – Interpersonal Effectiveness and Self Actualization. 6th ed. Boston: Allyn and Bacon.
- ✓ Robbins, S. P. and Hunsaker, Phillip, L. (2009). Training in Interpersonal skills. Tips for managing people at work. 5th ed. New Delhi: PHI Learning.
- ✓ Frey, D and Carlock, C. (1989). Enhancing Self Esteem. 2 nd edition. Indiana: Accelerated Development INC.

Learning Outcomes:

After completion of this paperthe students will be able to:

- ❖ Tomanage their stress better through enhanced understanding about its nature and cause.
- ❖ To practice trust building in their personal and professional lives.
- ❖ To apply conflict resolution skills appropriately.
- ❖ To relate the behaviour of self and others with emotional intelligence.
- ❖ To maintain a better self esteem irrespective of shortcomings they may encounter in life.

SEMESTER – IV

YEAR : II

Subject Name : Environmental Studies

Subject Code : ENV4B

Learning Objectives:

- To sensitize students towards environmental concerns, issues, and impacts of climate change and related mitigation strategies.
- To create and disseminate knowledge to the students about environmental problems at local, regional and global scale.

Syllabus:

Unit - I

Introduction to Environmental Studies: Multidisciplinary nature of environmental studies; Scope and importance; concept ofsustainability and sustainable development.

Unit - II

Ecosystem (2 lectures)

What is an ecosystem? Structure and function of ecosystem; Energy flow in anEco system: Food chains, food webs and ecological succession, Case studies of the following ecosystem:

a) Forest ecosystem

b) Grassland ecosystem

c) Desert ecosystem

d) Aquatic ecosystem (ponds, stream, lakes, rivers, ocean, estuaries)

Unit - III

Natural Resources : Renewable and Non – renewable Resources (6 lectures) Land resources and land use change: Land degradation, soil erosion and desertification.

Deforestation : Causes and impacts due to mining, dam building on environment, forests, biodiversity and tribal populations.

Water : Use and over –exploitation of surface and ground water, floods, droughts, conflicts over water (international and inter-state).

Energy resources : Renewable and non renewable energy sources, use of alternate energy sources, growing energy needs, case studies.

Unit - IV

Biodiversity and Conservation (8 lectures)

Levels of biological diversity: genetics, species and ecosystem diversity,

Biogeographic zones of India: Biodiversity patterns and global biodiversity hot spots India as a mega- biodiversity nation, Endangered and endemic species of India. Threats to biodiversity: Habitat loss, poaching of wildlife, man- wildlife conflicts, biological invasions; Conservations of biodiversity: In-situ and Ex-situ Conservation of biodiversity. Ecosystem and biodiversity services: Ecological, economic, social, ethical, aesthetic and Informational value.

Unit - V

Environmental Pollution (8 lectures)

Environmental pollution: types, causes, effects and controls: Air, Water, soil and noise Pollution. Nuclear hazards and human health risks Solid waste management: Control measures of urban and industrial waste; Pollution case studies.

Unit - VI

Environmental Policies & Practices (8 lectures) Climate change, global warming, ozone layer depletion, acid rain and impacts on human communities and agriculture Environment Laws: Environment Protection Act, Air (Prevention & Control of Pollution) Act; Water (Prevention and Control of Pollution) Act; Wildlife Protection Act; Forest Conservation Act. International agreements: Montreal and Kyoto protocols and Convention on Biological Diversity (CBD).

Nature reserves, tribal populations and rights, and human Wildlife conflicts in Indian context.

Unit - VII

Human Communities and the Environment (7 lectures) Human population growth, impacts on environment, human health and welfare. Resettlement and rehabilitation of projects affected persons; case studies. Disaster management: floods, earthquake, cyclone and landslides. Environmental movements : Chipko, Silent Valley, Bishnois of Rajasthan.

Environmental ethics : Role of Indian and other religions and cultures in environmental conservation. Environmental communication and public awareness, case studies(e.g. CNG Vehicles in Delhi)

Unit - VIII

Field Work (6 lectures) Visit to an area to document environmental assets: river / forest/ flora/ fauna etc. Visit to a local polluted site – Urban / Rural/ Industrial/ Agricultural. Study of common plants, insects, birds and basic principles of identification. Study of simple ecosystem- pond, river, Delhi Ridge etc. (Equal to 5 Lectures)

Learning Outcomes:

- Acquired fundamental knowledge of different aspects of environment and local, regional and global environmental problems.
- Acquired the knowledge and skills needed for the environmental design and management.
- Analyze and determine pollution using Environmental Analytical Techniques, Biostatistics andComputational Techniques.

SEMESTER – V

YEAR : III

Name of the Subject : SOFTWARE ENGINEERING

Subject Code :

Learning Objectives:

- To introduce the software development life cycles
- To introduce concepts related to structured and objected oriented analysis & design concepts
- Understanding of software requirements and the SRS documents.
- Understanding of the role of project management including planning, scheduling, risk management, etc.
- To provide an insight into UML and software testing techniques

Syllabus:

UNIT- I

Introduction – Evolution – Software Development projects – Emergence of Software Engineering.Software Life cycle models – Waterfall model – Rapid Application Development – Agile Model – Spiral Model

UNIT- II

Requirement Analysis and Specification – Gathering and Analysis – SRS – Formal System Specification

UNIT- III

Software Design – Overview – Characteristics – Cohesion & Coupling – Layered design – Approaches. Function Oriented Design – Structured Analysis – DFD – Structured Design – Detailed design

UNIT- IV

Object Modeling using UML – OO concepts – UML – Diagrams – Use case, Class, Interaction, Activity, State Chart – Postscript

UNIT- V

Coding & Testing – coding – Review – Documentation – Testing – Black-box, White-box, Integration, OO Testing, Smoke testing.

TEXT BOOK

1. Rajib Mall, "Fundamentals of Software Engineering", PHI 2018, 5th Edition.

REFERENCE BOOKS

1. Roger S. Pressman, "Software Engineering - A Practitioner's Approach", McGraw Hill 2010, 7th Edition.

2.PankajJalote, "An Integrated Approach to Software Engineering", Narosa Publishing House 2011, 3rd Edition.

WEB REFERENCES

- NPTEL & MOOC courses titled Software Engineering
- https://nptel.ac.in/courses/106105182/

Learning Outcomes:

- ❖ The students should be able to specify software requirements, design the software using tools
- ❖ To write test cases using different testing techniques.
- ❖ Ability to apply software engineering principles and techniques.
- ❖ Ability to work as an effective member or leader of software engineering teams.

SEMESTER – V

YEAR : III

Subject Name: Operating Systems

Subject Code:

Learning Objectives:

- Conceptualize the components involved in designing a contemporary OS.
- To understand the fundamental concepts and role of Operating System.
- To learn the Process Management and Scheduling Algorithms
- To understand the Memory Management policies
- To gain insight on I/O and File management techniques

Syllabus:

UNIT - I

Introduction: Views - Types of System - OS Structure – Operations - Services – Interface- System Calls- System Structure - System Design and Implementation. Process Management: Process - Process Scheduling - Inter-process Communication. CPU Scheduling: CPU Schedulers - Scheduling Criteria - Scheduling Algorithms.

UNIT - II

Process Synchronization: Critical- Section Problem - Synchronization Hardware Semaphores - Classical Problems of Synchronization - Monitors. Deadlocks: Characterization - Methods for Handling Deadlocks - Deadlock Prevention - Avoidance - Detection - Recovery.

UNIT - III

Memory Management: Hardware - Address Binding – Address Space - Dynamic Loading and Linking – Swapping – Contiguous Allocation - Segmentation - Paging – Structure of the Page Table.

UNIT - IV

Virtual Memory Management: Demand Paging - Page Replacement Algorithms - Thrashing. File System: File Concept -. Access Methods - Directory and Disk Structure - Protection - File System Structures - Allocation Methods - Free Space Management.

UNIT - V

I/O Systems: Overview - I/O Hardware - Application I/O Interface - Kernel I/O Subsystem - Transforming 1/0 Requests to Hardware Operations - Performance. System Protection: Goals - Domain - Access matrix. System Security: The Security Problem - Threats – Encryption- User Authentication.

Textbook:

1.Abraham Silberschatz, Peter B Galvin, Gerg Gagne, "Operating System Concepts", Wiley India Pvt.Ltd. 2018, 9th Edition.

Reference:

1. William Stallings, "Operating Systems Internals and Design Princples", Pearson, 2018, 9th Edition.

2. Andrew S. Tanenbaum, Herbert Bos, "Modern Operating Systems", Pearson 2014, 4th Edition.

Learning Outcomes:

- To understand the basic components of a computer operating system, and the interactions among the various components.
- Understand process management, concurrent processes and threads, memory management, virtual memory concepts, deadlocks.
- Learn different types of operating systems along with concept of file systems and CPU scheduling algorithms used in operating system.
- Understand the issues in synchronization and memory management.
- Compare the performance of Scheduling Algorithms
- Analyze resource management techniques
- Identify the features of I/O and File handling methods

SEMESTER – V

YEAR : III

Name of the Subject : Relational Database Management Systems

Subject Code :

Learning Objectives:

- Gain a good understanding of the architecture and functioning of Database Management Systems
- Understand the concept of Relational Models
- Understand the use of Structured Query Language (SQL) and its syntax.
- Apply Normalization techniques to normalize a database.
- Under the concept and syntax of PL/SQL
- Understand the need of transaction processing and learn techniques for controlling the consequences of concurrent data access.

Syllabus:

UNIT – I

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

UNIT – II

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

UNIT – III

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

UNIT – IV

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

UNIT – V

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

TEXT BOOK

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

REFERENCE BOOKS

1. Abraham Silberchatz, Henry F. Korth, S. Sudarshan, "Database System Concepts", McGrawHill 2019, 7th Edition.

2. Alexis Leon & Mathews Leon, "Fundamentals of DBMS", Vijay Nicole Publications 2014, 2nd Edition.

WEB REFERENCES

- NPTEL & MOOC courses titled Relational Database Management Systems https://nptel.ac.in/courses/106106093/
- https://nptel.ac.in/courses/106106095/

Learning Outcomes:

- Describe basic concepts of database system
- Design a Data model and Schemas in RDBMS
- Competent in use of SQL
- Students understand the usage of query languages
- Analyze functional dependencies for designing robust Database
- Able to write the programs in PL/SQL

SEMESTER – V

YEAR : III

Name of the Subject : Resource Management Techniques / Elective I

Subject Code :

Learning Objectives:

- To learn the basic concepts, models and statements of Operation Research theory which are frequently applied to business decision making.

Syllabus:

UNIT-I

Basics of Operations Research (O.R): Characteristics of O.R - Necessity of O.R in Industry-OR and Decision making - Role of computers in O.R. Linear programming: Formulations and Graphical solution (of 2 variables) canonical & standard terms of Linear programming problem. Algebraic solution: Simplex method.

UNIT-II

Algebraic solution: Charnes method of penalties - two phase simplex method - concept of Duality - properties of duality - Dual simplex method.

UNIT-III

Transportation model: Definition - formulation and solution of transportation models - the row - minima, column - minima, matrix minima and Vogel's approximation methods. Assignment model: Definition of Assignment model - comparison with transportation model- formulation and solution of Assignment model - variations of Assignment problem.

UNIT-IV

Sequencing problem: Processing each of n jobs through m machines - processing n jobs through 2 machines - processing n jobs through 3 machines - processing 2 jobs through m machines - processing n jobs through m machines - travelling salesman problem. Game Theory: Characteristics of games -Maximin, Minimax criteria of

optimality – Dominance property - algebraic and graphical method of solution of solving 2 x 2 games.

UNIT-V

Pert - CPM: Networks - Fulkerson's Rule - measure of activity - PERT computation - CPM computation - resource scheduling. Simulation: Various methods of obtaining random numbers for use in computer simulation - Additive, multiplicative and mixed types of congruence random number generators - Monte Carlo method of simulation - its advantages and disadvantages.

TEXT BOOKS:

1. Hamdy A. Taha, "Operation Research - An Introduction", Prentice Hall of India, Pvt. Ltd. New Delhi 1996, 5th Edition

2. Ackoff R.L. and Sasieni M. W, "Fundamentals of Operations Research", John Wiley and sons New York 1968.

3. Charnes A. Cooper W. and Hendersen A. , " Introduction to Linear Programming", Wiley and Sons New York 1953.

4. Srinath L.S, "PERT and CPM principles and applications", Affiliated East West Press Pvt. Ltd. New York 1973.

WEB REFERENCES:

- http://ocw.mit.in
- http://ebooks.Ipude.in.operationsresearch

Learning Outcomes:

- To make use of simplex method to solve optimization problems.
- To utilize PERT and CPM in project management
- Various models for solving different types of resource management will be learnt.
- Applications of RMT in industries will be learnt

SEMESTER – V

YEAR : III

Subject Name: OPERATING SYSTEM LAB

Subject Code :

Learning Objectives:

- To learn Process management and scheduling.
- To understand the concepts and implementation of memory management policies.
- To understand the various issues in Inter Process Communication.

Syllabus:

1. Basic I/O programming.

To implement CPU Scheduling Algorithms:

2. Shortest Job First Algorithm.
3. First Come First Served Algorithm.
4. Round Robin and Priority Scheduling Algorithms.
5. To implement reader/writer problem using semaphore.
6. To implement Banker's algorithm for Deadlock avoidance.

Program for page replacement algorithms:

7. First In First Out Algorithm.
8. Least Recently Used Algorithm.
9. To implement first fit, best fit and worst fit algorithm for memory management.
10. Program for Inter-process Communication.

Learning Outcomes:

- Understand the process management policies and scheduling process by CPU.
- Analyze the memory management and its allocation policies.
- To evaluate the requirement for process synchronization.

SEMESTER – V

YEAR : III

Subject Name: PL/SQL LAB

Subject Code :

Learning Objectives:

- Learn the various DDL and DML commands
- Understand queries in SQL to retrieve information from data base
- Understand PL/SQL statements: Exception Handling, Cursors, and Triggers.
- Develop database applications using front-end and back-end tools.

Syllabus:

LIST OF EXERCISES

1) DDL commands with constraints.

2) DML Commands with constraints.

3) SQL Queries: Queries, sub queries, Aggregate function

4) PL/SQL : Exceptional Handling

5) PL/SQL : Cursor

6) PL/SQL : Trigger

7) PL/SQL : Packages

8) Design and Develop Application for Library Management

9) Design and Develop Application for Student Mark Sheet Processing

10) Design and Develop Application for Pay Roll Processing

Learning Outcomes:

- Implement the DDL , DML Commands and Constraints
- Create, Update and query on the database.
- Design and Implement simple project with Front End and Back End.

SEMESTER – V

YEAR : III

Name of the Subject : VALUE EDUCATION

Subject Code :

Learning Objectives:

- Values are socially accepted norms to e valuate objects, persons and situations that form part and parcel of sociality.
- A value system is a set of consistent values and measures.
- Knowledge of the values are inculcated through education.
- It contributes in forming true human being, who are able to face life and make it meaningful

Syllabus:

UNIT - I

Value education-its purpose and significance in the present world–Value system–The role of culture and civilization – Holistic living – balancing the outer and inner – Body, Mind and Intellectual level – Duties and responsibilities.

UNIT - II

Salient values for life – Truth, commitment, honesty and integrity, forgiveness and love, empathy and ability to sacrifice, care, unity, and inclusiveness, Self esteem and self confidence, punctuality – Time, task and resource management – Problem solving and decision making skills – Interpersonal and Intra personal relationship – Team work – Positive and creative thinking.

UNIT - III

Human Rights – Universal Declaration of Human Rights – Human Rights violations – National Integration – Peace and non-violence – Dr.A P J Kalam's ten points for

enlightened citizenship – Social Values and Welfare of the citizen – The role of media in value building.

UNIT - IV

Environment and Ecological balance – interdependence of all beings – living and non-living. The binding of man and nature – Environment conservation and enrichment.

UNIT V

Social Evils – Corruption, Cyber crime, Terrorism – Alcoholism, Drug addiction– Dowry – Domestic violence – Untouchability – female infanticide – atrocities against women – How to tackle them.

Reference Book:

1. M.G. Chitakra: Education and Human Values, A.P.H. Publishing Corporation, New Delhi, 2003.

2. Chakravarthy, S.K: Values and ethics for Organizations: Theory and Practice, Oxford University Press, New Delhi, 1999.

3. Satchidananda, M.K: Ethics, Education, Indian Unity and Culture, Ajantha Publications, Delhi, 1991

SEMESTER – VI

YEAR : III

Name of the Subject : WEB DESIGN AND DEVELOPMENT

Subject Code :

Learning Objectives:

- To understand Web based programming and scripting languages.
- To learn the basic web concepts and to create rich internet applications that use most recent client-side programming technologies.
- To learn the concepts of Graphics and Animation and its usage
- To learn the basics of HTML, DHTML, XML, CSS, Java Script and AJAX.
- Gain knowledge about to design the web pages

Syllabus:

UNIT I

HTML: HTML-Introduction-tag basics- page structure-adding comments working with texts, paragraphs and line break. Emphasizing test - heading and horizontal rules - list-font size, face and color – alignment – links – tables - frames

UNIT II

Forms & Images Using Html: Graphics: Introduction-How to work efficiently with images in web pages, image maps, GIF animation, adding multimedia, data collection with html forms textbox, password, list box, combo box, text area, tools for building web page front page

UNIT III

XML & DHTML: Cascading style sheet (CSS) - what is CSS-Why we use CSS - adding CSS to your web pages - Grouping styles - extensible markup language (XML). Dynamic HTML: Document object model (DCOM) - Accessing HTML & CSS through DCOM Dynamic content styles & positioning - Event bubbling - data binding.

UNIT IV

JavaScript : Client side scripting, What is JavaScript, How to develop JavaScript, simple JavaScript, variables, functions, conditions, loops and repetition, Advance script, JavaScript and objects, JavaScript own objects, the DOM and web browser environments, forms and validations

UNIT V

Ajax: Introduction, advantages & disadvantages, Purpose of it, Ajax based web application, alternatives of Ajax Java Script & AJAX: Introduction to array-operators, making statements - date & time – mathematics – strings - Event handling form properties. AJAX. Introduction to jQuery and Angular JS.

TEXT BOOKS:

1. Pankaj Sharma, “Web Technology”, SkKataria & Sons Bangalore 2011. (UNIT I, II, III & IV).
2. Mike Mcgrath, “Java Script”, Dream Tech Press 2006, 1st Edition. (UNIT V: JAVASCRIPT)
3. Achyut S Godbole&AtulKahate, “Web Technologies”, 2002, 2nd Edition. (UNIT V: AJAX)

REFERENCE BOOKS:

1. Laura Lemay, RafeColburn , Jennifer Kyrnin, "Mastering HTML, CSS & Javascript Web Publishing", 2016.

2. DT Editorial Services (Author), "HTML 5 Black Book (Covers CSS3, JavaScript, XML, XHTML, AJAX, PHP, jQuery)", Paperback 2016, 2nd Edition.

3. C. Xavier, "World Wide Web Design with HTML", TMH Publishers 2001.

4.Wendy Willard, "A Beginners Guide HTML", Tata McGraw Hill 2009, 4th Edition.

WEB REFERENCES:

- NPTEL & MOOC courses titled Web Design and Development.
- https://www.udemy.com/topic/web-design/

Learning Outcomes:

- Ability to Develop and publish Web pages using Hypertext Markup Language (HTML).
- Ability to optimize page styles and layout with Cascading Style Sheets (CSS).
- Ability to Understand, analyze and apply the role of languages to create a capstone.
- Ability to insert the graphics and animation in the web pages.
- Website using client-side web programming languages like HTML, DHTML, CSS, XML, JavaScript, and AJAX.

SEMESTER – VI

YEAR: III

SUBJECT NAME : DATA MINING

SUBJECT CODE :

Learning Objectives:

- To learn about data mining Concepts
- To study the different data mining techniques
- Understand various data mining functionalities
- Inculcate knowledge on data mining query languages
- Know in detail about data mining algorithms

Syllabus:

UNIT - I

Basic Data Mining Tasks – Data Mining Versus Knowledge Discovery in Data Bases – Data Mining Issues – Data Mining Matrices – Social Implications of Data Mining – Data Mining from Data Base Perspective.

UNIT - II

Data Mining Techniques – a Statistical Perspective on data mining – Similarity Measures – Decision Trees – Neural Networks – Genetic Algorithms.

UNIT - III

Classification: Introduction – Statistical – Based Algorithms – Distance Based Algorithms – Decision.

UNIT - IV

Clustering Tree – Based Algorithms – Neural Network Based Algorithms – Rule Based Algorithms – Combining Techniques: Introduction – Similarity and Distance Measures – Outliers – Hierarchical Algorithms. Partitioned Algorithms.

UNIT - V

Association Rules: Introduction - Large Item Sets – Basic Algorithms – Parallel & Distributed Algorithms – Comparing Approaches – Incremental Rules – Advanced Association Rules Techniques – Measuring the Quality of Rules.

TEXT BOOK:

1. Jiawei Han & MichelineKamber, "Data Mining Concepts & Techniques", 2011, 3rd Edition.

REFERENCE BOOK:

1. Margaret H.Dunbam, "Data Mining Introductory and Advanced Topics", Pearson Education 2003.

WEB REFERENCES:

- NPTEL & MOOC courses titled Data Mining
- https://nptel.ac.in/courses/106105174/

Learning Outcomes:

- To have knowledge in Data mining concepts
- To apply Data mining concepts in different fields
- Extract knowledge using data mining techniques
- Adapt to new data mining tools
- Explore recent trends in data mining

SEMESTER – VI

YEAR: III

SUBJECT NAME: MOBILE APPLICATION DEVELOPMENT

SUBJECT CODE:

Learning Objectives:

- To make the student understand the basic concepts of mobile application development, be aware of Characteristics of mobile applications, User-interface design, basics of graphics and multimedia.
- To gain knowledge about testing and publishing of Android application

Syllabus :

UNIT - I

Mobile Application Development - Mobile Applications and Device Platforms - Alternatives for Building Mobile Apps -Comparing Native vs. Hybrid Applications - The Mobile Application Development Lifecycle-The Mobile Application Front-End-The Mobile Application Back-End-Key Mobile Application Services-What is Android-Android version history-Obtaining the Required Tools- Launching Your First Android Application-Exploring the IDE-Debugging Your Application-Publishing Your Application

UNIT - II

Understanding Activities-Linking Activities Using Intents-Fragments-Displaying Notifications- Understanding the Components of a Screen-Adapting to Display Orientation-Managing Changes to Screen Orientation- Utilizing the Action Bar-Creating the User Interface Programmatically Listening for UI Notifications

UNIT - III

Using Basic Views-Using Picker Views -Using List Views to Display Long Lists-Understanding Specialized Fragments - Using Image Views to Display Pictures - Using Menus with Views-Using Web View- Saving and Loading User Preferences-Persisting Data to Files-Creating and Using Databases.

UNIT - IV

Sharing Data in Android-Creating Your Own Content Providers -Using the Content Provider- SMS Messaging -Sending Email-Displaying Maps- Getting Location Data-Monitoring a Location.

UNIT - V

Consuming Web Services Using HTTP-Consuming JSON Services- Creating Your Own Services - Binding Activities to Services -Understanding Threading .

TEXT BOOK:

1. Jerome DiMarzio, "Beginning Android Programming with Android Studio", 4thEdition.

REFERENCE BOOKS:

1. Dawn Griffiths, David Griffiths, "Head First Android Development: A Brain-Friendly Guide", 2017.

2. Neil Smyth , "Android Studio 3.0 Development Essentials: Android", 8th Edition.

3. Pradeep Kothari, "Android Application Development (With Kitkat Support)", Black Book 2014.

WEB REFERENCES:

- https://developer.android.com/guide
- https://en.wikipedia.org/wiki/Android_10
- Develop App for Free
- https://flutter.dev/
- http://ai2.appinventor.mit.edu
- https://en.wikipedia.org/wiki/Android_version_history
- https://aws.amazon.com/mobile/mobile-application-development/ (Unit 1)
- https://en.wikipedia.org/wiki/Mobile_app_development

Learning Outcomes:

- To explain the basics of mobile application development
- Develop Android application with User interface, networking and animation.
- Use simulator tools to test and publish the application.

SEMESTER – VI

YEAR: III

SUBJECT NAME: IOT & ITS APPLICATIONS / Elective II

SUBJECT CODE:

Learning Objectives:

- To understand the concepts of Internet of Things and the application of IoT.
- To Determine the Market perspective of IoT.
- To Understand the vision of IoT from a global context

Syllabus:

UNIT - I

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

UNIT - II

M2M to IoT – A Basic Perspective– Introduction, Some Definitions, M2M Value Chains, IoT Value Chains, An emerging industrial structure for IoT, The international driven global value chain and global information monopolies. M2M to IoT-An Architectural Overview– Building an architecture, Main design principles and needed capabilities, An IoT architecture outline, standards considerations.

UNIT - III

IoT Architecture - State of the Art – Introduction, State of the art, Architecture. Reference Model - Introduction, Reference Model and architecture, IoT reference Model, IoT Reference Architecture- Introduction, Functional View, Information View, Deployment and Operational View, Other Relevant architectural views.

UNIT - IV

IoT Applications for Value Creations Introduction, IoT applications for industry: Future Factory Concepts, Brownfield IoT, Smart Objects, Smart Applications, Four

Aspects in your Business to Master IoT, Value Creation from Big Data and Serialization, IoT for Retailing Industry, IoT For Oil and Gas Industry, Opinions on IoT Application and Value for Industry, Home Management, eHealth.

UNIT - V

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

TEXT BOOK:

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

REFERENCE BOOK:

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 da Costa, "Rethinking the Internet of Things: A Scalable Approach to Connecting Everything", Apress Publications 2013, 1st Edition,.

3.WaltenegusDargie, ChristianPoellabauer, "Fundamentals of Wireless Sensor Networks: Theory and Practice"

4. CunoPfister, "Getting Started with the Internet of Things", O"Reilly Media 2011.

WEB REFERENCES:

- https://github.com/connectIOT/iottoolkit
- https://www.arduino.cc/
- http://www.zettajs.org/

Learning Outcomes:

After learning the course, the student able to:

- ❖ 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

SEMESTER – VI

YEAR : III

Name of the Subject : MOBILE APPLICATION DEVELOPMENT LAB

Subject Code :

Learning Objectives:

- To give overall view of Mobile application development
- Develop and Publish Android applications using Graphical user interface
- Develop and Publish Android application which can use Location and network services

Syllabus:

Exercises

1. Develop an application that finds greatest among three numbers using GUI Components
2. Develop an application to display your personal details using GUI Components
3. Develop an application that uses the radio button
4. Develop an application that uses the image button
5. Develop an application that uses Alert Dialog Box
6. Develop an application that uses Layout Managers.
7. Develop an application that uses audio mode (NORMAL, SILENT, VIBRATE)
8. Develop an application that uses to send messages from one mobile to another mobile.
9. Develop an application that uses to send email

10. Develop an application for mobile calls.
11. Develop an application for Student Mark sheet processing
12. Develop an application for Login Page in Database.
13. Develop an application for Google map locator (optional)

WEB REFERENCES:

Develop the App online

- https://flutter.dev/
- http://ai2.appinventor.mit.edu

Learning Outcomes:

At the end of the course, the student should be able to:

- ❖ Use Emulator tools to design and develop applications

INTERNAL ASSESSMENT PROCEDURE

- ✓ *All Language, Major, Allied , Elective, Value Education, EVS and Non Major Elective* the assessment procedure is **25% of Internals** (conducted by College) **and 75% of External** (University Examination).
- ✓ The assessment procedure for ***Practicals*** is **40% of Internals (conducted by College) and 60% of External (University Examination)**.
- ✓ Professional English & Soft Skills the assessment procedure is **50% of Internals (conducted by College) and 50% of External (University Examination)**.

CIA ASSESSMENT SPLIT UP (INTERNALS) :

Assessment Procedure	Rubrics (Parameter)	Marks
Assignment	Creativity, relevance to the topic	5
Seminar	Communication Skills, Way of Presentation	5
Internal Test	Students Performance in the written test	5
Model Exam	Students Performance in the written test	5
Attendance	Above 95% - 5; 84% to 94% - 4; 75% to 84 % - 3; 65% to 74% -2; less than 65%-1	5
Total		**25**

SHANTHI RAVICHANDRAN

Digitally signed by SHANTHI RAVICHANDRAN
Date: 2022.11.17 15:25:50 +05'30'

Dr.R.Anandha Lakshmi
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Dr. R.Shanthi
Principal