

**FIRST YEAR
SEMESTER I**

Course Code	Title of the Course
10111A	PART 1 : TAMIL - PAPER -1

பொதுத்தமிழ்

பாடத்திட்டம்

மதிப்பெண் : 75

மதிப்பீடு : 4

நோக்கம் : மொழி அறிவு, இலக்கண அறிவை வளர்த்தல்

பிரிவு -1 : இசைப்பாடல்

கூறு 1

8. கண்ணதாசன் - ஸ்ரீ கிருஷ்ண கானம்

15. புல்லாங்குழல் கொடுத்த

16. குருவாயூருக்கு வாருங்கள்

கூறு 2

22. கோகுலத்து பசுக்கள்

23. கோகுலத்தில் ஒரு நாள் ராதை

24. ஆயர்பாடி மாளிகையில்

கூறு 3

பட்டுக்கோட்டை கல்யாண சுந்தரம்

15. நெஞ்சில் குடியிருக்கும்

16. செய்யும் தொழிலே தெய்வம்

கூறு 4

8. பாரதியார்

கண்ணன் என் விளையாட்டுப்பிள்ளை

பாரத மாதா திருப்பள்ளி எழுச்சி

பிரிவு - 2 : கவிதை, புதுக்கவிதை

கூறு 5

22. பாரதிதாசன் - உலகப்பன் பாட்டு (5)

23. நாமக்கல் கவிஞர் - நோயற்ற வாழ்வு 7 பாட்டு

24. பெ.தூரன் - நிலா பிஞ்சு

கூறு 6

22. வல்லிக் கண்ணன் - வெறும் புகழ்

23. கு.ப.இராஜகோபாலன் - எதற்காக?

24. மீரா - பதினைந்து

கூறு 7

15. சிற்பி - சர்ப்ப யாகம்

16. ஞானக்கூத்தன் - தோழர் மோசிகீரனார்

கூறு 8

15. அப்துல் ரகுமான் - கண்ணும் எழுதேம்

16. சண்முக சுப்பையா - வயிறு

பிரிவு - 3 : காப்பியம்

கூறு 9

15. சிலப்பதிகாரம் - வழக்குரை காதை

16. கம்பராமாயணம் - அயோத்தியா காண்டம்

பிரிவு - 4 : காப்பியம்

கூறு 10

8. சீறாப்புராணம் - ஈத்தங்குலை வரவழைத்த படலம் (1)

கூறு 11

தேம்பாவணி - காட்சிப்படலம்

பாடல் எண் (ஒவ்வொரு பாடலின் முதல்வரி)

- 197. இன்னவாயில்
- 198. கொழுந்துறும்
- 199. பஞ்சு அரங்கில்

கூறு 12

தேம்பாவணி - காட்சிப்படலம்

பாடல் எண் (ஒவ்வொரு பாடலின் முதல்வரி)

- 200. எண்ணுளே
- 201. ஒண்தலங்கள்
- 202. இரவியேந்த கஞ்சக்

கூறு 13

தேம்பாவணி - காட்சிப்படலம்

பாடல் எண் (ஒவ்வொரு பாடலின் முதல்வரி)

- 203. கன்னியாயதாயும்
- 204. ஏந்தி ஓங்கு உளத்து
- 205. ஆவ தேமுனர்
- 206. கொல்லும் வேலொடும்

கூறு 14

தேம்பாவணி - காட்சிப்படலம்

பாடல் எண் (ஒவ்வொரு பாடலின் முதல்வரி)

- 207. என்ற வாசகம்
- 208. அம்பினால்
- 209. வேண்டும் ஓர் வினை

Course Code	Title of the Course
10111B	PART 1 : COMMUNICATION SKILLS - I

Learning objectives:

- To make students to understand the basic skills of Communication.
- To acquaint students with the important features of Communication skills.

BLOCK I: COMMUNICATION: AN INTRODUCTION

Unit - I Communication – Meaning – Types- Importance

Unit – II Barriers to Effective Communication – Principles – Principles of Effective Communication

BLOCK II: ORAL COMMUNICATION

Unit – III Oral Communication – Meaning – Importance- Forms of Oral Communication

Unit – IV Intonation –Meaning – Function- Types Preparation of Speech- Steps Involved

Unit – V Principles of Effective Oral Communication

BLOCK III: WRITTEN COMMUNICATION

Unit – VI Written Communication – Meaning –Steps – Importance- Advantages Use of words and Phrases

Unit – VII Sentence – Meaning –Sentence formation- Characteristics of an Effective Sentence

Unit–VIII Paragraph Writing –Essay Writing –Steps Involved –Outline-Layout – Contents-Drafting-Correction- Final Draft

BLOCK IV: OFFICIAL COMMUNICATION

Unit – IX Application for Employment and Curriculum Vitae –Steps involved

Unit – X Non –Verbal Communication – Meaning –Types –Body Language – Postures-Gestures –Facial Expressions –Eye Contact

Unit – XI Report Writing –Report –Types of Reports –Format of a Report

Unit – XII Essentials of a Good Report –Preparation of Report-Procedure Involved

Unit – XIII Meetings-Purpose of the Meeting – Procedure

Unit–XIV Group Discussion–Quality of Content-Participation –Logical Presentation –Behavioural Skills

References:

- Krishna Mohan & Meera Banerjee, Developing Communication Skills, 2005.
- Geetha Nagaraj, Write to Communicate, 2004.
- Wren & Martin, English Grammar and Composition, 2002.
- Dale Carnegie, How to Win Friends and Influence People, 1981.
- Dale R Jordan, Language Skills and Use.
- Gartside L. Bahld, Nagammiah and McComas, Satterwhite, Modern Business Correspondence.
- Rajendra Pal and Kortahalli J S, Essentials of Business Communication.
- Wallace, Michael J, Study Skills in English.
- Editors of Readers Digest, Super Word Power.

Course Code	Title of the Course
10112	PART II : ENGLISH – I

Learning objective:

1. To make the students master the different topics prescribed in the Prose, Grammar and Composition.

BLOCK I: PROSE I

Unit – I	Water-the Elixir of life	- C.V. Raman
Unit – II	Mrs. Packletide's Tiger	- SAKI
Unit – III	A Deed of Bravery	- Jim Carbett
Unit – IV	The Cat	- Catharine M. Willson
Unit – V	On Letter Writing	- Alpha of the Plough

BLOCK II: PROSE II

Unit – VI	Our Ancestors	- Carl Sagan
Unit – VII	Our Civilization	- C.E. Foad
Unit – VIII	A Hero on Probation	- B.R. Nanda
Unit – IX	Dangers of Drug Abuse	- Hardin B. Fones
Unit – X	Food	- J.B.S. Haldane

BLOCK III: DEVELOPING GRAMMATICAL SKILLS

Unit – XI	- Articles-Gerunds-Participles-Infinitives-Modals- Proposition- Tenses
Unit – XII	- Direct and Indirect Speech-Transformation of sentences- Active and passive voice.

BLOCK IV: DEVELOPING WRITING SKILLS

Unit – XIII	- Letter writing - Precis writing - Developing hints.
Unit – XIV	- Dialogue writing - Paragraph writing.

References:

7. Sebastian D K, *Prose for the Young Reader*, Macmillan.
8. *Active English Grammar*, Ed. by the Board of Editors, Macmillan.
9. Modern English – *A Book of Grammar Usage and Composition* by N.Krishnaswamy, Macmillan Publishers.

Course Code	Title of the Course
10113	C AND DATA STRUCTURE

Course Objectives:

- To design, implement and apply the basic C programming concepts.
- To understand the linear and non linear data structures available in solving problems

Course Requirements:

- Before studying this course, the student has knowledge about
- Basic principles of programming
- Concepts of stack, queue and array

Course Outcome:

After the completion of this course, the student will able to

- To write programs using structures, strings, arrays, pointers and strings for solving complex computational problem.
- Use the data structures real time applications
- analyze the efficiency of Data Structures

Unit no.	Contents
	BLOCK 1 : INTRODUCTION TO C
1	Program Development styles and Basics of C. Introduction to C – Character set – Identifiers and keywords – Data types – constants – Variables – declarations – Declaring variables, - Rules for defining variables. Initializing variables - Type conversion. Operator and Expressions
2	Data input, output and Preliminaries – single character input and output – Entering input data – Writing output data – gets and puts functions –
3	control statements: Branching and looping – Nested control structures – Switch – Break – Continue and Goto.
	BLOCK 2 : FUNCTIONS, ARRAYS AND POINTERS
4	Function: defining a function – Accessing a function – Passing arguments to a function – Recursion – Library function – Macros – C preprocessor – Program structure: Storage classes – Automatic variables – Global variables – Static variables– Multiple programming – Bitwise operation.
5	Arrays – Array initialization, Definition of Array, Characteristic of Array, One dimensional array, Two dimensional array, Multidimensional arrays, Character array and strings – string handling functions.
6	Pointers – Features of Pointers, Pointer declaration, Arithmetic operation with pointers, Pointers and Arrays, Pointers and two dimensional arrays, Array of Pointers, Pointers to Pointers, Pointers and strings.

	BLOCK 3 : STRUCTURE UNION AND FILES
7	Structures and Unions: defining a structure – Processing a structure – Structures and pointers– Passing structures to functions – Self referential structures – Bit fields – Unions – Enumerations.
8	Data file: Opening and Closing a data file – Creating a data file – Processing a data file – Unformatted data file – Command line parameters.
	BLOCK 4 : LINEAR DATA STRUCTURE
9	Introduction to Data Structure , Stack, Stack related terms, operation on a stack, Representation of Stack, Implementation of a stack - Polish notation.
10	Queues , Various Positions of Queue, Circular Queues. Operations on Queue , Representation of Queues. Applications of Queue..
11	List , Merging lists, Linked list, Single linked list, Double Linked List, Header Linked list, Insertion and Deletion of linked list, Traversing a linked list. Representation of Linked list
	BLOCK 5 : NON-LINEAR DATA STRUCTURE
12	Introduction – Trees, Binary Trees, Types of Binary trees,
13	Binary Tree Representation , Traversing Binary Trees,
14	Binary Search tree , Insertion and Deletion operations, trees and their applications Hashing Techniques.

TEXT BOOKS:

3. Programming in ANSI C, Fifth Edition, E.Balagurusamy, Tata McGraw-Hill Publishing Company Ltd, 2011
4. Data Structures, Seymour Lipschutz, G.A.Vijayalakshmi Pai, Second Edition , Schaum's Outlines, Tata Mc-Graw Hill Private Ltd., 2006.

REFERENCE BOOKS :

5. Fundamentals of Data structures in C, Second edition, Ellis Horowitz and Sartaj Sahini, Universities press, 2007.
6. Programming and Data Structure, Pearson Edition, Ashok N Kamthane, 2007.

Course Code	Title of the Course
10114	C AND DATA STRUCTURE LAB

Course Objectives

- To be able to solve data structure problems using C language
- To learn and implement C language programming techniques

Course Outcome

- Students can develop programming knowledge
- Students can solve any kind of problems using C language
- Data Structure based problems can be solved

Experiments based on C programming and Data Structures

Unit No.	Contents
	BLOCK 1 : C PROGRAM FUNDAMENTALS
1	Simple C Programs
2	Using if and switch constructs Programs
3	Looping statements Problems
	BLOCK 2 : FUNCTIONS,ARRAYS,STRINGS,FILEAND POINTERS
4	Functions and Recursive programs
5	Arrays ,Strings and Matrices Programs
6	File Handling Programs
7	Pointers and Arrays Programs programs
	BLOCK 3 – STRUCTURE , UNION AND FILES
8	Structure and union : Programs using structure and union
9	Files : Programs based on file handling
	BLOCK 4 : LINEAR DATA STRUCTURE PROGRAMS
10	Stacks, queues ,expression evaluation programs
11	Infix to postfix conversion
12	Linked List programs: List, Merging lists, Linked list, Single linked list, Double Linked List, Header Linked list, Insertion and Deletion of linked list, Traversing a linked list.
	BLOCK 5 : NON LINEAR DATA STRUCURE EXPERIMENTS
13	Tree Programs : Trees, Binary Trees, Types of Binary trees, Binary Tree Representation,
14	Traversing Binary Trees, Binary Search tree, Insertion and Deletion operations,

REFERENCE BOOKS:

3. Programming in ANSI C, Fifth Edition, E.Balagurusamy, Tata McGraw-Hill Publishing Company Ltd, 2011
4. Data Structures, Seymour Lipschutz, G.A.Vijayalakshmi Pai, Second Edition , Schaum's Outlines, Tata Mc-Graw Hill Private Ltd., 2006.
7. Fundamentals of Data structures in C, Second edition, Ellis Horowitz and Sartaj Sahini, Universities press, 2007.
8. Programming and Data Structure, Pearson Edition, Ashok N Kamthane, 2007.

SEMESTER II

Course Code	Title of the Course
10121A	PART 1 : TAMIL - PAPER II

பொதுத்தமிழ்
பாடத்திட்டம்

மதிப்பெண் : 75

மதிப்பீடு : 4

நோக்கம் : மொழி அறிவு, இலக்கண அறிவை வளர்த்தல்

பிரிவு 1: தேம்பாவணி

கூறு 1

தேம்பாவணி - காட்சிப்படலம்

பாடல் எண் (ஒவ்வொரு பாடலின் முதல்வரி)

- 210. சொல் தவிர்ந்த
- 211. அன்னை
- 212. அஞ்சுவார்
- 213. சொல்லக் கேட்டனள்
- 214. மற்செய்கை
- 215. மண்கனியப்
- 216. அழுது ஆர்ந்த

கூறு 2

தேம்பாவணி - காட்சிப்படலம்

பாடல் எண் (ஒவ்வொரு பாடலின் முதல்வரி)

- 217. பொய் பொதுளும்
- 218. இன்பு அருந்தி
- 219. வழுதாயின இன்பு
- 220. மறம் ஏவின்

கூறு 3

தேம்பாவணி - காட்சிப்படலம்

பாடல் எண் (ஒவ்வொரு பாடலின் முதல்வரி)

- 221. மண்ணார்கள்
- 222. பொய்யா விதியோய்
- 223. விடியா இருள்
- 224. அழுவார் எவரும்

பிரிவு 2: சிறுகதை, உரைநடை

கூறு 4

சிறுகதை - நீலபத்மநாபனின் “வான வீதியில்”

கூறு 5

உரைநடை - கம்பன் புறத்திணை - தி.சொக்கலிங்கம்

பிரிவு 3: இலக்கணம் - எழுத்தும் சொல்லும்

கூறு 6

- 15. முதலெழுத்துகள்இ சார்பெழுத்துகள்
- 16. மொழி முதலெழுத்துகள் இ மொழி இறுதி எழுத்துகள்

கூறு 7

22. ஒற்றெழுத்து மிகலும் மிகாமையுமஇ
23. ஆகு பெயர் இ அன்மொழித் தொகை.
24. வினா-விடை வகைகள்

கூறு 8

29. தமிழ்ச் சொல்லமைப்பின் சிறப்பு – பெயர் இ வினைஇ இடைஇ உரி வடிவங்கள் இ
30. பிற மொழிச் சொற்களைத் தமிழில் ஆளும் முறைகள்

கூறு 9

31. அல் வழிஇ வேற்றுமைப் புணர்ச்சிகள்
32. திணைஇ பால் இ எண் இ இட இயைபு.

பிரிவு 4: தமிழ் இலக்கிய வரலாறு

கூறு 10

8. இக்கால இலக்கிய வகைகள்
அ) மரபுக் கவிதை
ஆ) புதுக் கவிதையின் தோற்றமும் வளர்ச்சியும்

கூறு 11

1. உரை நடை இலக்கியங்கள் - தோற்றமும் வளர்ச்சியும்
- | | |
|------------|------------|
| அ) கட்டுரை | ஆ) சிறுகதை |
| இ) புதினம் | ஈ) நாடகம் |

கூறு 12

8. இக்கால இலக்கியக் களங்கள்
திரைப்படம் இ தொலைக்காட்சிஇ வானொலிஇ இதழ்கள் தமிழுக்கு ஆற்றி வரும்
பணிகள்

கூறு 13

1. தமிழும் சமயங்களும் :
அ) சைவம் ஆ)வைணவம் இ)சமணம் ஈ)பௌத்தம் உ)இசுலாம்
ஊ) கிறித்துவம்

கூறு 14

1. பிற்காலக் காப்பியங்கள் :
அ) கம்பராமாயணம் ஆ) பெரியபுராணம்
2. இணையம் - பற்றிய செய்திகள்

Course Code	Title of the Course
10121B	PART 1 : COMMUNICATION SKILLS - II

Learning objectives:

3. To make students understand the basic skills of Communication.
4. To acquaint students with the important features of Communication skills.

BLOCK I: INTRODUCTION TO COMMUNICATION SKILLS

- Unit – I** Code and Content of Communication Skills
Unit– II Stimulus and Response of Communication Skills

BLOCK II: SPEAKING SKILLS

- Unit – III** Effective Speaking Guidelines
Unit – IV Pronunciation Etiquette of Communication Skills
Unit – V Phonetics in Communication Skills

BLOCK III: LANGUAGE SKILLS

- Unit – VI** A self Assessment of Communicating Soft Skills
Unit – VII Language Skills –Ability –Skill Selected Need- Learner Centre activities
Unit – VIII Listening Skills –Importance –Types of Listening- Interview Skills
Unit – IX Conversation Skills –Modes
Unit – X Presentation Skills - Preparing –Planning-Presentation

BLOCK IV: WRITING SKILLS

- Unit – XI** Written Communication –Structure of Effective Sentences –Paragraph
Unit – XII Technical Writing-Creative Writing- Editing and Publishing
Unit – XIII Corporate Communication Skills-Internal –Effective business writing – Letters, Proposals, Resume
Unit – XIV Corporal Communication Skills-External - Press release - Newsletters- Interviewing skills

References:

44. Dutt. Kiranmai & Geeta Rajjevan. Basic Communication Skills. Rev.ed. Foundation Books Pvt.Ltd. Cambridge House, New Delhi 2006.
45. Bill R. Swetmon. Communication Skills for the 21st Century. Chennai: Eswar Press. First South Asian Edition 2006.
46. Glass. Lillian. Talk to Win. New York: Perigee Books,1987.
47. Pease. Alan. Signals: How to Use Body Language for Power, Success and Love, New York: Bantam Books, 1981.
48. Walters. Lilly. Secrets of Successful Speakers. New York: McGraw-Hill, Inc., 1993.

49. Mandal. S.K. How to Succeed in Group Discussions & Personal Interviews. Mumbai: JAICO Publishing House.
50. Rogoff. Leonard and Ballenger. Grady. Office Guide to Business Letters, Memos & Reports. New York: Macmillan, 1994.
51. Krishna Mohan & Meera Banerjee, Developing Communication Skills, 2005.
52. Geetha Nagaraj, Write to Communicate, 2004.
53. Wren & Martin, English Grammar and Composition, 2002.
54. Rajendra Pal and Kortahalli J S, Essentials of Business Communication.

Course Code	Title of the Course
10122	PART II : ENGLISH – II

Learning objective:

3. To make the students master the different topics prescribed in the Poetry and Language use Sections.

BLOCK I: POETRY - I

Unit – I Sonnet - William Shakespeare

Unit – II Lines Composed upon Westminster Bridge

Unit – III Grecian Urn - William Wordsworth
- John Keats (1795-1827)

Unit – IV Andrea Del Sarto - Robert Browning (1812-1889)

BLOCK II: POETRY - II

Unit – V The Road Not Taken - Robert Frost (1874-1963)

Unit – VI Strange Meeting - Wilfred Owen (1813-1918)

Unit – VII Gitanjali - Rabindranath Tagore (1861-1946)

Unit – VIII The Coromandel Fishers - Sarojini Naidu

Unit – IX The Express - Stephen Spender

BLOCK III: DRAMA

Unit – X Shakespeare : The Merchant of Venice

BLOCK IV: DEVELOPING LANGUAGE SKILLS

Unit – XI Essay writing

Unit – XII Note Making

Unit – XIII Report writing

Unit – XIV Comprehension

References:

7. *The Golden Quill*, P.K. Seshadri, Macmillan.
8. *The Merchant of Venice*, Shakespeare. (Any overseas edition).
9. *Active English Grammar*, Ed. by the Board of Editors, Macmillan.
4. *Modern English – A Book of Grammar Usage and Composition* by N.Krishnaswamy, Macmillan Publishers.

Course Code	Title of the Course
10123	PROGRAMMING IN C++

Course objectives:

Identify and practice object oriented Programming concepts.

Practice the use of c++ libraries

Develop applications using Object oriented programming concepts

Course Outcome:

Able to understand and design the solution to a problem using object-oriented programming concepts.

Understand and implement the features of C++ including templates, exceptions and file handling for providing programmed solutions to complex problems.

Unit No	Contents
	BLOCK I : PRINCIPLES OF OBJECT-ORIENTED PROGRAMMING
1	Principles of Object-Oriented Programming: Software Crisis – Software Evolution – Basic Concepts of Object-Oriented Programming – Benefits of OOP – Object-Oriented Languages - Applications of OOP – Application of C++ -
2	Structure of a C++ Program – Tokens – Keywords – Identifiers – Basic Data Types – User defined Data types – Derived data types – Symbolic constants – Type compatibility – Declaration of variables – Dynamic initialization of variables – Reference variables – Operators in C++ - Manipulators – Type cast operator – Expressions and their types-Implicit conversions
3	Control structures and function – The main function – Function prototyping – inline functions – Function overloading.
	BLOCK 2 : CLASSES AND OBJECTS
4	Introduction - Specifying a Class -Defining Member Function - C++ Program with Class - Making an Outside Function Inline - Nesting of Member Functions - Arrays within a Class
5	Memory Allocation for Objects - Static Data Members - Static Member Functions - Arrays of Objects - Objects as Function Arguments - Friendly Functions - Returning Objects.
6	Constructors and Destructors: Introduction - Constructors - Parameterized Constructors - Multiple Constructors in Class - Constructors with Default Arguments - Dynamic Initialization of Objects - Copy Constructor - Dynamic Constructors - Constructing Two Dimensional Arrays - Destructors.

	BLOCK 3 : INHERITANCE, POLYMORPHISM AND POINTERS
7	Inheritance: Introduction - Defining Derived Classes - Single Inheritance - Making a Private Member Inheritable - Multilevel Inheritance - Multiple Inheritance - Hierarchical Inheritance - Virtual Base classes - Abstract Classes - Constructors in Derived Classes - Member Classes: Nesting of Classes.
8	Pointers Virtual Functions and Polymorphism: Introduction - Pointers to Objects - this Pointer - Pointers to Derived Classes - Virtual Functions - Pure Virtual Functions.
9	Managing Console I/O Operations - C++ Streams - C++ Stream Classes - Unformatted I/O Operations, Formatted Console I/O Operations - Managing Output with Manipulators.
	BLOCK 4 : WORKING WITH FILES
10	Introduction - Classes for File Stream Operations - Opening and Closing a File - Detecting End of File - More About Open (): File Modes
11	File Pointers and their Manipulations - Sequential Input and output Operations - Updating a File - Random Access - Error handling During File Operations - Command Line Arguments.
	BLOCK 5 : TEMPLATES AND EXCEPTION HANDLING
12	Templates: Introduction - Function Templates - Overloaded Function Templates - Nesting of Function Calls - Multiple Arguments Function Template - User Defined Templates.
13	Exception Handling: Introduction - Error Handling - Exception Handling Model - Exception handling Constructs - Handler Throwing the Same Exception Again -
14	Other Exception Handling: List of Exceptions - Catch All Exceptions - Exceptions in Constructors and Destructors - Handling Uncaught Exceptions - Ten Rules for Handling Exceptions Successfully.

Text Book:

1. E.Balagurusamy, *Object Oriented Programming with C++, Tata McGraw Hill, New Delhi, Sixth Edition, 2013.*

Books for Reference:

1. *Object Oriented Program in C++ – Nabajyoti Barkakati, A prentice Hall of India Private Limited, New Delhi 1997.*
2. *Mastering C++ – K R Venugopal, T. Ravishankar, RajKumar, Tata Mc Graw-Hill Publishing Company Limited, New Delhi, 2006.*

Course Code	Title of the Course
10124	PROGRAMMING IN C++ LAB

Course objectives:

Identify and practice object oriented Programming concepts.

Practice the use of c++ libraries

Develop applications using Object oriented programming concepts

Course Outcome:

Able to understand and design the solution to a problem using object-oriented programming concepts.

Understand and implement the features of C++ including templates, exceptions and file handling for providing programmed solutions to complex problems.

Syllabi Based On Course : Object Oriented Programming And C++

Unit No.	Contents
	BLOCK 1
1.	Simple Programs using decisions, loops and arrays
2.	Simple functions & Inline functions
	BLOCK 2
3.	Usage of classes and Objects
4.	this pointer and Static functions
5.	Constructors and Destructors
	BLOCK 3
6.	Function overloading
7.	Operator Overloading
8.	Friend functions
	BLOCK 4
9.	Inheritance & Multiple Inheritance
10.	Pointers
11.	Polymorphism
12.	Virtual Functions
	BLOCK 5
13.	Files
14.	I/O Streams

Books for Reference:

1. E.Balagurusamy, *Object Oriented Programming with C++*, Tata McGraw Hill, New Delhi, Sixth Edition, 2013.
2. *Object Oriented Program in C++* – Nabajyoti Barkakati, A prentice Hall of India Private Limited, New Delhi 1997.
3. *Mastering C++* – K R Venugopal, T. Ravishankar, RajKumar, Tata Mc Graw-Hill Publishing Company Limited, New Delhi, 2006.

SECOND YEAR

SEMESTER III

Course Code	Title of the Course
10131A / 12731A	PART 1 : TAMIL - PAPER III

பொதுத்தமிழ்
பாடத்திட்டம்

மதிப்பெண் : 75

மதிப்பீடு : 4

நோக்கம் : மொழிஅறிவு, இலக்கணஅறிவைவளர்த்தல்

பிரிவு 1: இலக்கியம் - 1

கூறு 1: பத்துப்பாட்டு - முல்லைப்பாட்டு

கூறு 2: எட்டுத்தொகை - ஐங்குறுநூறு

கூறு 3: கபிலர் - குறிஞ்சித்திணை

கூறு 4: மஞ்ஞைப்பத்து - முதல் மூன்று பாடல்கள்

கூறு 5: குறுந்தொகை - பரணர் பாடல்கள் பா. எண். 19, 24, 36, 128, 399

பிரிவு 2: இலக்கியம் - 2

கூறு 6: நற்றிணை - பெருங்குன்றார்கிழார் - பா. எண். 5

பெருவழுதியார் - பா. எண். 55

பெருங்கௌசிகனார் - பா. எண். 139

கூறு 7: நற்றிணை - கருவூர்க்கோசிகனார் - பா. எண். 214

உலோச்சனார் - பா. எண். 249

கூறு 8: அகநானூறு - சேந்தம்பூதனார் பாடல்கள் பா.எண். 84, 207

கூறு 9: புறநானூறு - மறோக்கத்து நப்பசலையார் பாடல்கள்

பா. எண். 37, 39, 126, 226, 280

பிரிவு 3: பதினெண்கீழ்க்கணக்கு

கூறு 10: பதினெண் கீழ்க்கணக்கு - திருக்குறள் - வாழ்க்கைத் துணை நலம் (6),

அறிவுடைமை (43), பிரிவாற்றாமை (116)

கூறு 11: நான்மணிக்கடிகை - எள்ளற்க (3), பறைபடவாழா (4),

கூறு 12: நான்மணிக்கடிகை - மண்ணயறிப (5), கள்ளிவயிற்றில் (6), கல்லிற்பிறக்கும்(7)

பிரிவு 4: நாடகம் - புதினம்

கூறு 13: நாடகம் - இராசராசசோழன் - அரு. இராமநாதன்

கூறு 14: நாவல் - சுவடுகள் - இரா. பாலசுப்பிரமணியன், சத்யா வெளியீடு, மதுரை.

Course Code	Title of the Course
10131B / 12731B	PART 1 : HUMAN SKILL DEVELOPMENT- I

Learning objective:

- To Make the Students develop human skills.

BLOCK I: HUMAN SKILLS AND HABITS

Unit – I Human Skills –Developing skills-Types

Unit – II Mind-Levels of functions

Habits-Meaning-Types-Merits of good habits - Interpersonal Relationship-Features- Interpersonal Behaviour

BLOCK II: PERSONALITY AND SELF CONCEPT

Unit – III Thinking ahead- Significance of thinking ahead

Unit – IV Developing Personality-Meaning -Need- Factors influencing personality, Ways of developing personality -Building positive personality

Unit – V Self-concept-Self-esteem-Meaning-Importance - Self- efficacy- Self- acceptance-Meaning-Importance - Etiquette-Meaning- Etiquettes inusing mobile, telephones-Dais Etiquette

BLOCK III: TYPES OF SKILLS

Unit – VI Goal-setting Skills-Meaning-Types-Importance-

Unit – VII Decision-making skills-Meaning-Types-Steps in decision-making

Unit–VIII Negotiating Skills-Styles-Structure-Creating negotiation-Competitive Negotiation

BLOCK IV: HUMAN RELATIONS

Unit – IX Attitudes-Meaning-Types-Importance-Developing positive attitudes

Unit – X Coping with Change-Meaning-Characteristics-Importance of change Resistance to change-Dealing with change

Unit – XI Leadership-Meaning-Importance-Characteristics-Styles-

Unit – XII Human Relations Skill-Need-Canons of good human relations

Unit – XIII Counselling-Meaning-Importance-Forms- Conflicts- Meaning-Types- Causes-Effects-Managements of conflicts

Unit – XIV Stress-Meaning-Types-Causes-Effects-Managing the stress - Anger- Meaning-Causes-Consequences-Anger Management

References:

19. Les Giblin, Skill with People, 1995.
20. Shiv Khera, You Can Win, 2002.
21. Christian H Godefroy, Mind Power.
22. Dale Carnegie, How to Enjoy Your Life and Your Job, 1985.
23. Natalie H Rogers, How to Speak without Fear, 1982.
24. Dale Carnegie, How to Develop Self-Confidence and Influence People by Public Speaking.

Course Code	Title of the Course
10132/ 12732	PART II : ENGLISH – III

Learning objective:

3. To make the students master the different topics prescribed in the Short Stories, One Act Plays, Grammar and Composition.

BLOCK I: SHORT STORIES

Unit – I	A Hero	- R.K. Narayanan
Unit – II	The Diamond Necklace	- Guy de Maupassant
Unit – III	The Verger	- Somerset Maugham
Unit – IV	The Postmaster	- Rabindranath Tagore

BLOCK II: ONE ACT PLAYS - I

Unit – V	The Proposal	- Anton Chekhov
Unit – VI	The Boy Comes Home	- A.A. Milne
Unit – VII	The Silver Idol	- James R. Waugh
Unit – VIII	Progress	- St. John Ervine

BLOCK III: ONE ACT PLAYS - II

Unit – IX	The Pie and the Tart	- Hume Chesterman
Unit – X	Reunion	- W.st. John Tayleur
Unit – XI	A kind of Justice	- Margaret Wood
Unit – XII	The Refugee	- Asif Currimbhoy

BLOCK IV: GRAMMAR AND COMPOSITION

Unit – XIII Parts of speech-Noun- Pronoun- Adjective Degrees of Comparison- Verb- Adverb

Unit – XIV Agenda- Minutes- Notice- Descriptive Writing

References:

3. *Aroma*, Ed. by the Board of Editors, Publishers- New Century Book House, Chennai.
2. *Six Short Stories*, Ed. by the Board of Editors, Harrows Publications, Chennai.
2. *One Act Plays*, Ed. by the Board of Editors, Harrows Publications, Chennai.
3. *Modern English – A Book of Grammar Usage and Composition* by N.Krishnaswamy, Macmillan Publishers.
4. *English for Communication*, Ed. by the Board of Editors, Harrows Publications, Chennai.

Course Code	Title of the Course
10133/ 12733	RELATIONAL DATABASE MANAGEMENT SYSTEM (RDBMS)

Course Objectives:

- To understand the fundamentals of data models
- To make a study of SQL and relational database design.
- To know about data storage techniques and query processing.
- To impart knowledge in transaction processing, concurrency control techniques and External storage

Course Requirements:

- Knowledge about the basic concepts of the database.

Course Outcome:

- Design a database using ER diagrams and map ER into Relations and normalize the relations
- Acquire the knowledge of query evaluation to monitor the performance of the DBMS.
- Develop a simple database applications using normalization.

Unit No	Contents
	BLOCK 1 INTRODUCTION
1	Data base System Applications , data base System VS file System – View of Data – Data Abstraction –Instances and Schemas – data Models – the ER Model
2	Model :Relational Model – Other Models – Database Languages – DDL – DML – database Access for applications Programs – data base Users and Administrator – Transaction Management – data base System Structure – Storage Manager – the Query Processor.
3	History of Data base Systems - Data base design and ER diagrams – Beyond ER Design Entities, Attributes and Entity sets – Relationships and Relationship sets – Additional features of ER Model – Concept Design with the ER Model – Conceptual Design for Large enterprises.
	BLOCK 2 : RELATIONAL MODEL
4	Introduction – Integrity Constraint Over relations – Enforcing Integrity constraints – Querying relational data – Logical data base Design – Introduction to Views – Destroying / altering Tables and Views.
5	Relational Algebra – Selection and projection set operations – renaming – Joins – Division – Examples of Algebra overviews –
6	Relational calculus – Tuple relational Calculus – Domain relational calculus – Expressive Power of Algebra and calculus.
	BLOCK 3 : SQL QUERY
7	Form of Basic SQL Query – Examples of Basic SQL Queries – Introduction to Nested Queries – Correlated Nested Queries Set – Comparison Operators – Aggregative Operators – NULL values – Comparison using Null values – Logical connectivity's – AND, OR and NOT – Impact on SQL Constructs – Outer Joins – Disallowing NULL values – Complex Integrity Constraints in SQL Triggers and Active Data bases. Schema refinement
8	Normal forms :Problems Caused by redundancy – Decompositions –

	Problem related to decomposition – reasoning about FDS – FIRST, SECOND, THIRD Normal forms – BCNF–
9	Join: Lossless join Decomposition – Dependency preserving Decomposition – Schema refinement in Data base Design – Multi valued Dependencies – FORTH Normal Form.
	BLOCK 4 TRANSACTION
10	Introduction : Transaction Concept- Transaction State- Implementation of Atomicity and Durability – Concurrent – Executions – Serializability-Recoverability – Implementation of Isolation – Testing for serializability
11	Protocols : Lock Based Protocols – Timestamp Based Protocols- Validation-Based Protocols – Multiple Granularity.
12	Recovery and Atomicity – Log – Based Recovery – Recovery with Concurrent Transactions – Buffer Management – Failure with loss of nonvolatile storage-Advance Recovery systems- Remote Backup systems
	BLOCK 5 STORAGE
13	Data on External Storage – File Organization and Indexing – Cluster Indexes, Primary and Secondary Indexes – Index data Structures – Hash Based Indexing – Tree base Indexing – Comparison of File Organizations – Indexes and
14	Performance Tuning- Intuitions for tree Indexes – Indexed Sequential Access Methods (ISAM) – B+ Trees: A Dynamic Index Structure.

Text Books:

5. Raghurama Krishnan, Johannes Gehrke, Data base Management Systems, 3rd Edition, TATA McGrawHill.2003.
6. Silberschatz, Korth, Data base System Concepts, 6th Edition, Tata McGraw Hill, 2011.

Reference Books:

9. Relational Database Principles 2nd Edition, Colin Ritchie, 2004
10. Sharad Maheswari and Ruchin Jain, Database management systems Complete Practical Approach, Firewall media, 2006
11. Peter Rob & Carlos Coronel, Data base Systems design, Implementation, and Management, 7th Edition.
12. Elmasri Navrate , Fundamentals of Database Systems, Pearson Education.

Course Code	Title of the Course
10134/ 12734	RELATIONAL DATABASE MANAGEMENT SYSTEM (RDBMS) - LAB

Course Objectives:

Use the concepts like data normalization, link between table by means of foreign keys and other relevant database concepts for the following applications. The implementation of each should have necessary input screen (forms) Menu-driven query processing and reports. Necessary validations should be made for each table;

Unit No.	Contents
	BLOCK 1 : TABLE MANIPULATION
1	Table creation, Renaming a Table, Copying another table, Dropping a Table
2	Table Description: Describing Table Definitions, Modifying Tables, Joining tables, Number and Date functions.
	BLOCK 2 : SQL QUERIES AND SUB QUERIES
3	SQL Queries: Queries, Sub Queries, and Aggregate functions
4	DDL: Experiments using database DDL SQL statements
5	DML: Experiment using database DML SQL statements
6	DCL: Experiment using database DCL SQL statements
	BLOCK 3 : INDEX AND VIEW
7	Index : Experiment using database index creation, Renaming a index, Copying another index, Dropping a index
8	Views: Create Views, Partition and locks
	BLOCK 4 : EXCEPTION HANDLING AND PL/SQL
9	Exception Handling: PL/SQL Procedure for application using exception handling
10	Cursor: PL/SQL Procedure for application using cursors
11	Trigger: PL/SQL Procedure for application using triggers
12	Package: PL/SQL Procedure for application using package
13	Reports: DBMS programs to prepare report using functions
	BLOCK 5 : APPLICATION DEVELOPMENT
14	Design and Develop Application: Library information system, Students mark sheet processing, Telephone directory maintenance, Gas booking and delivering, Electricity bill processing, Bank Transaction, Pay roll processing. Personal information system, Question database and conducting Quiz and Personal diary

Reference Books:

13. Raghurama Krishnan, Johannes Gehrke, Data base Management Systems, 3rd Edition, TATA McGrawHill.2003.
14. Silberschatz, Korth, Data base System Concepts, 6th Edition, Tata McGraw Hill, 2011.
15. Relational Database Principles 2nd Edition, Colin Ritchie, 2004

16. Sharad Maheswari and Ruchin Jain, Database management systems Complete Practical Approach, Firewall media, 2006
17. Peter Rob & Carlos Coronel, Data base Systems design, Implementation, and Management, 7th Edition.
18. Elmasri Navrate , Fundamentals of Database Systems, Pearson Education.

SEMESTER IV

Course Code	Title of the Course
10141A/ 12741A	PART 1 : TAMIL – PAPER IV

இளங்கலை இரண்டாமாண்டு
நான்காம் பருவம்
10141 ∴ 12741- பொதுத்தமிழ்
பாடத்திட்டம்

மதிப்பெண் : 75
மதிப்பீடு : 4

நோக்கம் : மொழி அறிவு, இலக்கண அறிவை வளர்த்தல்

பிரிவு 1: செய்யுள் உறுப்புகள்

- கூறு 1: செய்யுள் உறுப்புகள் - யாப்பு - எழுத்து, அசை, சீர்,
கூறு 2: செய்யுள் உறுப்புகள் - யாப்பு - தளை, அடி, தொடை
கூறு 3: வெண்பா, ஆசிரியப்பா, கலிப்பா, வஞ்சிப்பா,
கூறு 4: புதிய யாப்பு வடிவங்கள் - சிந்து, கண்ணி, கீர்த்தனை
கூறு 5: புதுக்கவிதையில் குறியீடு – படிமம்.

பிரிவு 2: அகப்பொருள் - புறப்பொருள்

- கூறு 6: அகப்பொருள் - புறப்பொருள் - ஐந்திணை விளக்கம்
கூறு 7: அகப்பொருள் துறைகள் - வரைவு கடாதல், அறத்தொடு நிறறல்,
உடன்போக்கு
கூறு 8: புறப்பொருள் துறைகள் - வஞ்சினக்காஞ்சி, கையறுநிலை, செவியறிவுறாஉ

பிரிவு 3: அணி

- கூறு 9: அணி இலக்கணம் - உவமை, உருவகம், வேற்றுமை, பிறிது மொழிதல்,
தற்குறிப்பேற்றம், சிலேடை, பின்வருநிலை.
கூறு 10: நிறுத்தல் குறிகள்.

பிரிவு 4: காப்பியம் - சங்க இலக்கியம்

- கூறு 11: தொல்காப்பியம் - சங்கஇலக்கியம் - எட்டுத்தொகை, பத்துப்பாட்டு,
கூறு 12: பதினெண்கீழ்க்கணக்கு.
கூறு 13: ஐம்பெருங்காப்பியங்கள் - பிற்காலக் காப்பியங்கள் - கம்பராமாயணம் -
பெரியபுராணம்.
கூறு 14: இக்காலக் காப்பியங்கள் - பாரதியின் பாஞ்சாலி சபதம் - பாரதிதாசனின்
பாண்டியன் பரிசு - கண்ணதாசனின் இயேசு காவியம் இ
சிற்பியின் - மௌன மயக்கங்கள்.

Course Code	Title of the Course
10141B/ 12741B	PART 1 : HUMAN SKILL DEVELOPMENT- II

Learning objective:

2. To Make the Students develop human skills.

BLOCK I: GUIDENCE AND COUNSELLING

Unit – I Guidance & Counselling – Role of Counsellor - Importance and Techniques of counselling

Unit – II Managerial skill- Need – Importance

Unit – III Human relational skills-Communication-Attention

BLOCK II: TECHNICAL SKILLS

Unit – IV Conceptual skills-Meaning-Importance

Unit – V Technical skills-Techniques-Practices-Tools-Procedures

Unit – VI Presentation skills-Planning-Preparation-Delivery

Unit – VII Organization skills-Meaning-Nature-Importance-Types

Unit – VIII Multi-Tasking skills Responsibilities-Causes

Unit – IX Leader- Qualities of a good leader

BLOCK III: UNDERSTANDING SKILLS

Unit – X Understanding Skills -Human systems: Individual, Group, organization, and their major interactions

Unit – XI Understanding Skills -Human systems: Community and Society, and their major interactions

BLOCK IV: SOCIETY BASED SKILLS

Unit – XII Problem solving skills – Handling –Facing - Importance

Unit – XIII Cooperative Learning Skills

Unit – XIV Making Social Responsibilities-Causes

References:

19. Les Giblin, Skill with People, 1995.
20. Shiv Khera, You Can Win, 2002.
21. Christian H Godefroy, Mind Power.
22. Dale Carnegie, How to Enjoy Your Life and Your Job, 1985.
23. Natalie H Rogers, How to Speak without Fear, 1982.
24. Dale Carnegie, How to Develop Self-Confidence and Influence People by Public Speaking.

Course Code	Title of the Course
10142 / 12742	PART II : ENGLISH – IV

Learning objective:

3. To make the students master the different topics prescribed in the Short Stories, Drama, Fiction, Tales from Shakespeare, Biographies, Grammar and Composition.

BLOCK I: SHORT STORIES

Unit – I	Lalajee	- Jim Corbett
Unit – II	A Day's Wait	- Hemmingway
Unit – III	Two old Men	- Leo Tolstoy
Unit –IV	Little Girls wiser than	- Men Tolstoy
Unit – V	Boy who wanted more Cheese	- William Elliot Griffir

BLOCK II: DRAMA AND FICTION

Unit – VI	Pygmalion	- G.B. Shaw
Unit – VII	Swami and Friends	- R.K. Narayanan

BLOCK III: SHAKESPEARE

Unit – VIII	- The Merchant of Venice
Unit – IX	- Romeo and Juliet
Unit – X	- The Winter's Tale

BLOCK IV: BIOGRAPHIES, GRAMMAR AND COMPOSITION

Unit – XI	- Martin-Luther king	- R.N. Roy
Unit – XII	- Nehru	- A.J. Toynbee
Unit – XIII	- Concord- Phrases and Clauses-Question Tag	
Unit – XIV	- Expansion of Proverbs	
	- Group Discussion	
	- Conversation (Apologizing, Requesting, Thanking)	

References:

11. *Sizzlers*, by the Board of Editors, Publishers:-Manimekala Publishing House, Madurai.
12. *Pygmalion* – G.B. Shaw
13. *Swami and Friends* – R.K. Narayan
14. *Tales from Shakespeare* Ed. by the Board of Editors, Harrows Publications, Chennai.
15. *Modern English – A Book of Grammar Usage and Composition* by N.Krishnaswamy, Macmillan Publishers.

Course Code	Title of the Course
10143 / 12743	INTERNET AND JAVA PROGRAMMING

Course Objectives:

To provide an overview of working principles of internet, web related functionalities
To understand and apply the fundamentals core java, packages, database connectivity for computing

Course Requirements:

- Basic knowledge of internet and programming principles

Course Outcome:

- Able to understand the internet standards and recent web Technologies
- Able to implement, compile, test and run Java program,
- Able to make use of hierarchy of Java classes to provide a solution to a given set of requirements found in the Java API

Unit No.	Contents
	BLOCK 1 : INTRODUCTION
1	Basic Internet Concepts: Connecting to the Internet – Domain Name System – E-mail
2	The World Wide Web – Internet Search Engines – Web Browsers – Chatting and conferencing on the Internet
3	Online Chatting –Messaging – Usenet Newsgroup – Internet Relay chat (IRC) – FTP – Telnet.
	BLOCK 2 : FUNDAMENTALS OF OBJECT-ORIENTED PROGRAMMING
4	Basic concepts of OOP – Benefits – Applications . Java Evolution: Features – how java differs from C and C++ - java and internet- java support system – java environment
5	Overview of Java Language –Introduction – Simple Java Program – Comments – Java Program Structure – Tokens – Java Statements – Implementing a Java Program – JVM – Command Line Arguments. Constants – Variables – Data Types – Type Casting..
6	Operators and Expressions: Arithmetic Operators – Relational, Logical, Assignment, Increment and Decrement, Conditional, Bitwise, Special Operators – Arithmetic Expressions, Evaluation of Expression – Precedence of Arithmetic Operators – Type Conversions – Operator Precedence and associativity – Mathematical Functions. Decision Making and Branching: If –if.....else –Nesting of if..... Else – else if–switch. Decision Making and Looping: While – do – for – jump in loops – labeled loops.
	BLOCK 3 : CLASSES, OBJECTS AND METHODS
7	class: Defining a class –fields –methods –creating objects – accessing class members – constructors – methods overloading –static members –nesting of methods – Inheritance –overriding methods –final variables-classes –

	methods
8	Arrays, Strings and Vectors :One dimensional Arrays –creating of array – Two dimensional arrays- strings –vectors –Wrapper classes – Enumerated Types - Interfaces: Multiple Inheritance
9	Packages: Defining interface –Extending interfaces – Implementing Interfaces -Putting Classes Together
	BLOCK 4: MULTITHREADING , EXCEPTION AND APPLETS
10	Multithreaded Programming – Creating Threads –Extending the thread class –Stopping and Blocking a thread –Life cycle of a thread –using thread methods –Thread Exceptions –Priority –Synchronization – Implementing the ‘Runnable’ Interface
11	Managing Error and Exceptions: Types of errors –Exceptions –Syntax of Exception Handling code – Multiple Catch statements –using finally statement – Throwing our own Exceptions – using exceptions for Debugging - Graphics Programming: The Graphics Class – Lines and Rectangles – Circles and Ellipses – Drawing Arcs – Drawing Polygons – Line Graphs – Using Control Loops in Applets – Drawing Bar Charts.
12	Applet Programming: How applets differ from Applications – preparing to write applets – Building Applet Code – Applet life cycle – creating an Executable Applet – Designing a Web Page – Applet Tag – Adding Applet to HTML file – Running the Applet – Passing parameters to Applets – Displaying Numerical values – Getting input from the user
	BLOCK 5 : MANAGING INPUT/OUTPUT FILES IN JAVA
13	Introduction – concept of streams –stream classes – byte stream classes – character Stream
14	I/O classes: –using stream –using the file class –Input / output Exceptions – creation of files – Reading / writing characters – reading writing bytes Random access files- Interactive input and output –Other stream classes

Text Books:

3. R. Krishnamoorthy and S. Prabhu, Internet and Java Programming, New Age International Publishers, 2004 (Unit I).
4. Programming with Java, 4e, E. Balagurusamy, Tata McGraw-Hill, 2010.

Reference books:

9. Deitel, Deitel and Nieto, Internet and World Wide Web – How to program, Pearson Education, 2000.
10. Naughton and H.Schildt, Java 2 - The complete reference, Tata McGraw-Hill, Fourth edition, 2006.
11. Elliotte Rusty Harold, Java Network Programming, O'Reilly Publishers, 2000.
12. B.Mohamal Ibrahim , Java : J2SE – A Practical Approach, Firewall media, 2006.
13. Cay S. Horstmann, Gary Cornell, Core Java, Volume I and II, 5th Edition, Pearson Education, 2003.
14. Topley, J2ME in A Nutshell, O'Reilly Publishers, 2002.
15. Hunt, Guide to J2EE Enterprise Java, Springer Publications, 2004.
16. Ed Roman, Enterprise Java Beans, Wiley Publishers, 1998.

Course Code	Title of the Course
10144 / 12744	INTERNET AND JAVA PROGRAMMING - LAB

Course Objective:

- To understand and practice markup languages
- To understand and practice embedded dynamic scripting on client side Internet Programming
- To understand and practice web development techniques on client-side

Course Requirement:

- Basic concepts of Web and Java programming

Course Outcome:

- Explore markup languages features and create interactive web pages using them
- Learn and design Client side validation using scripting languages
- Acquire knowledge about Open source JavaScript libraries
- Able to design front end web page and connect to the back end databases.

Experiments based on Internet Programming Theory

Unit No.	Contents
	BLOCK 1 : JAVA FUNDAMENTAL PROBLEMS:
1	Simple Java Problems
2	class and objects
3	Conditional control using java
4	Looping using java
	BLOCK 2 : OOP CONCEPTS
5	Function overloading programs
6	Operator overloading programs
7	Inheritance programs, Packages
8	Polymorphism programs Message passing programs

	BLOCK 3 : THREAD & VIRTUAL FUNCTION
9	Threads
10	Virtual function programs
	BLOCK 4 : I/O AND EXCEPTION HANDLING
11	Exception handling programs
12	I/O manipulation programs,
	BLOCK 4 :NETWORK PROGRAMMING
13	Applet programs
14	Implementation of simple network programs using java

Reference books:

7. R. Krishnamoorthy and S. Prabhu, Internet and Java Programming, New Age International Publishers, 2004 (Unit I).
8. Programming with Java, 4e, E. Balagurusamy, Tata McGraw-Hill, 2010.
9. Deitel, Deitel and Nieto, Internet and World Wide Web – How to program, Pearson Education, 2000.
10. Naughton and H.Schildt, Java 2 - The complete reference, Tata McGraw-Hill, Fourth edition, 2006.
11. Elliotte Rusty Harold, Java Network Programming, O'Reilly Publishers, 2000.
12. B.Mohamal Ibrahim , Java : J2SE – A Practical Approach, Firewall media, 2006.
13. Cay S. Horstmann, Gary Cornell, Core Java, Volume I and II, 5th Edition, Pearson Education, 2003.
14. Topley, J2ME in A Nutshell, O'Reilly Publishers, 2002.
15. Hunt, Guide to J2EE Enterprise Java, Springer Publications, 2004.
16. Ed Roman, Enterprise Java Beans, Wiley Publishers, 1998.

THIRD YEAR

SEMESTER V

Course Code	Title of the Course
10151 / 12751	ACCOUNTING FUNDAMENTALS

Course Objectives:

- To understand the process of estimating the cost of a particular product.
- To Prepare the estimate for various business activities such as purchase, sale, production and cash budgets

Course Requirements:

- Basic principles of Accounting
-

Course Outcome:

- Able to do balance sheet preparation and do analysis
- Able to do the budget preparation, ratio analysis and control of a company.

Unit No.	Contents
	BLOCK 1 : ACCOUNTING FUNDAMENTALS
1	Introduction: Accounting - Definition - Accounting for historical function and managerial function
2	Scope of accounting - Financial accounting - Cost accounting and management accounting
3	Managerial uses - Differences.
	BLOCK 2 : FINANCIAL ACCOUNTING:
4	Accounting concepts - Conventions - Principles
5	Accounting standards - International Accounting standards.
	BLOCK 3 : DOUBLE ENTRY SYSTEM OF ACCOUNTING
6	Double entry system of accounting - Accounting Books - Preparation of Journal and Ledger
7	Subsidiary books Errors and rectification
8	Preparation of a Trial balance and Final accounts
	BLOCK 4 : ACCOUNTING FROM INCOMPLETE RECORDS
9	Introduction: Accounting from incomplete records – Statement of affairs methods – Conversion method

10	Preparation of Trading, Profit and Loss Account from incomplete records.
11	Balance Sheet from incomplete records.
	BLOCK 5 : RATIO ANALYSIS
12	Ratio Analysis - Types - Profitability ratios - turnover ratios - liquidity ratios - propriety ratios - Market Earnings Ratios
13	Factors affecting efficiency of ratios - How to make effective use of ratio analysis - Uses and limitation of ratios.
14	Construction of Profit & Loss account and Balance sheet with ratios and relevant figures - Inter-firm, Intra-firm comparisons.

REFERENCE BOOKS:

1. M.A.Arulanandam & K.S.Raman - Advanced Accounting
2. R.C.Gupta & Radaswamy - Advanced Accounting
3. M.C.Shukla & T.S.Grewal - Advanced Accounting
4. Jain & Narang - Advanced Cost Accounting
5. P. Das Gupta - Advanced Studies in Cost Accounting
6. S.N.Maheswari - Management Accounting & Financial Control
7. Manmohan & Goyal - Principles of Management Accounting
8. N.K.Prasad - Advanced Cost Accounting

Course Code	Title of the Course
10152 / 12752	COMPUTER GRAPHICS

Course Objectives:

- To understand computational development of graphics
- To provide in-depth knowledge of display systems, image synthesis, shape modeling of 3D application.

Course Outcome:

- Enhance the perspective of modern computer system with modeling, analysis and interpretation of 2D and 3D visual information.
- Able to develop interactive animations.

Unit No.	Contents
	BLOCK 1 : INTRODUCTION
1	Introduction Application areas of Computer Graphics, overview of graphics systems, video-display devices, raster-scan systems, random scan systems, graphics monitors and work stations and input devices.
2	Output primitives: Points and lines, line drawing algorithms, mid-point circle and ellipse algorithms.
3	Filled area primitives: Scan line polygon fill algorithm, boundary-fill and flood-fill algorithms.
	BLOCK 2 : 2 D TRANSFORM AND CLIPPING
4	2-D geometrical transform: Translation, scaling, rotation, reflection and shear transformations
5	2D Matrix representations: homogeneous coordinates, composite transforms, transformations between coordinate systems.
6	2-D viewing: The viewing pipeline, viewing coordinate reference frame, window to view-port coordinate transformation, viewing functions,
7	Clipping Algorithms: Cohen-Sutherland and Cyrus-beck line clipping algorithms, Sutherland –Hodgeman polygon clipping algorithm.
	BLOCK 3 : 3D OBJECT REPRESENTATION
8	Introduction: Polygon surfaces, quadric surfaces, spline representation,
9	Curve and surfaces: Hermite curve, Bezier curve and B-Spline curves, Bezier and B-Spline surfaces. Basic illumination models, polygon rendering methods.
	BLOCK 4 : 3D GEMETRIC TRANSFORMATION
10	3-D Geometric transformations: Translation, rotation, scaling, reflection and shear transformations, composite transformations.
11	3-D viewing: Viewing pipeline, viewing coordinates, view volume and general projection transforms and clipping.
	BLOCK 5 : VISIBLE SURFACE DETECTION METHODS AND ANIMATION
12	Classification, back-face detection, depth-buffer, scan-line, depth sorting, BSP-tree methods, area sub-division and octree methods.
13	Computer animation: Design of animation sequence, general computer

	animation functions, raster animation,
14	Other Animation Techniques: Computer animation languages, key frame systems, motion specifications.

Text Books

1. Donald Hearn and M.Pauline Baker, Computer Graphics C version, Pearson Education, 2007.

Reference Books:

1. M. Newman and F. Sproull, Interactive Computer Graphics, McGraw Hill 2004
2. Foley, VanDam, Feiner and Hughes, Computer Graphics Principles and Practice, 2nd Edition in C, Pearson Education, 2004.
3. Plastok and Gordon Kalley, Computer, McGraw Hill 2000.

Course Code	Title of the Course
10153 / 12753	OPERATING SYSTEMS

Course Objective

- Able to understand the operating system principles
- Able to know the Principles of Deadlock, processor scheduling and memory management.

Course Requirements:

- To be aware of the evolution and fundamental principles of operating system, processes and their communication

Course Outcome

- Students have acquired the knowledge about the types of operating systems
- Students have acquired the knowledge about the functions of operating system

Unit No.	Contents
	BLOCK 1 : INTRODUCTION
1	Introduction: Definition of Operating Systems – Computer System Organization
2	Computer System Architecture – Operating System Structure – Operating System Operations
3	System Structures: Operating System Services – System Calls – System Programs – Operating System Design and Implementation.
	BLOCK 2 : PROCESS CONCEPT
4	Process Concept: Process Scheduling – Operations on Processes – Inter Process Communication
5	Process Scheduling: Scheduling Concepts – Scheduling Criteria – Scheduling Algorithms – Multiple Processor Scheduling
	BLOCK 3 : SYNCHRONIZATION
6	Synchronization: The Critical Section Problem – Synchronization Hardware – Semaphores – Classic Problems of Synchronization – Monitors
7	Deadlocks: Deadlocks Characterization – Methods for Handling Deadlocks
8	Deadlock Prevention – Avoidance – Detection – Recovery from Deadlock.
	BLOCK 4 : MEMORY MANAGEMENT
9	Memory Management Strategies: Swapping – Contiguous Memory Allocation – Paging – Segmentation
	BLOCK 5 : FILE SYSTEM
10	File Concept – Access Methods – Directory
11	Structure – File System Mounting – File Sharing – Protection.
12	Implementing File Systems: File System Structure – File System Implementation
13	Directory Implementation – Allocation Methods – Free Space Management
14	Secondary Storage Structure: Overview of Mass Storage Structure – Disk Structure – Disk Attachment – Disk Scheduling – Disk Management.

TEXT BOOK:

2. Abraham Silberschatz, Peter Baer Galvin and Greg Gagne, “Operating System Principles”, 7th Edition, Wiley India Edition, 2008.

REFERENCE BOOKS:

3. Andrew S.Tanenbaum, Operating Systems Design and Implementation, 3rd edition, Prentice Hall, 2006.
4. Harvey M. Deitel, An Introduction to Operating Systems, 3rd Edition, Addison Wesley 2007.

Course Code	Title of the Course
10154 / 12754	UNIX & SHELL PROGRAMMING LAB

Syllabi based on operating system theory

Objective of the course

- To learn and get familiar with unix/ubundo operating system
- To understand the functions unix/ubundo operating system through basic commands

Course outcome On completion of the course

- Students will attain hands on experience in linux operating system.
- Basic unix commands their syntax and purpose can be well understood by the students
- Shell commands and their syntax and purpose can be well understood by the students

Unit No.	Contents
	BLOCK 1 INTRODUCTION
1	Introduction Operating system ,objective, History, Features of Unix
2	Kernal and shell
3	Unix file system: File and common commands-Shell-More about files-Directories-Unix system-Basics of file-Directories and filenames-
	BLOCK 2 : UNIX PERMISSIONS
4	Permissions- Inodes-Directory hierarchy-Devices-the grep family-Other filters
5	Stream editor sed - awk pattern scanning and processing language-files and good filters.
6	Wild card characters
	BLOCK 3 : UNIX COMMANDS
7	Unix commands with syntax: Syntax and unix commands
8	Unix shells: History of unix shells
9	Deciding on a shell
	BLOCK 4 : SHELL COMMADS - FILES
10	Shell Command files
11	Bourne shell: Bourne shell programming
12	Shell programming files: Shell programming on files
	BLOCK 5 : MENU DRIVEN SHELL PROGRAM:
13	Menu Driven File handling
14	Menu Driven shell program – file: edit, create and delete file using menu

REFERENCE BOOKS:

1. Abraham Silberschatz, Peter Baer Galvin and Greg Gagne, “Operating System Principles”, 7th Edition, Wiley India Edition, 2008.
2. Andrew S.Tanenbaum, Operating Systems Design and Implementation, 3rd edition, Prentice Hall, 2006.
3. Harvey M. Deitel, An Introduction to Operating Systems, 3rd Edition, Addison Wesley 2007.

SEMESTER VI

Course Code	Title of the Course
10161 / 12761	MANAGEMENT PRINCIPLES AND TECHNIQUES

Course Objectives

To learn about the concept of management

To understand the Linear Programming problems

To know about PERT/CPM and replacement theory

Course Outcome

Can solve the liner programming and PERT/CPM problems

Unit No.	Contents
	BLOCK 1 : INTRODUCTION TO MANAGEMENT
1	Introduction : Concept and Definition of Management - Management Functions
2	Planning : Principles - Planning - Planning Process - Decision-making
3	Organising - Structure - Delegation - Staffing - Direction - communication - Motivation - Leadership - Control.
	BLOCK 2 : LINEAR PROGRAMMING
4	Introduction - History of OR - Meaning of OR - Principles of Modelling - Application of OR
5	Formulation of LP models - Graphical solution in Maximization problem and Minimization Problem - Algebraic solutions
6	Simplex method - Feasibility - Optimality - Artificial variables - Duality - Dual - simplex Algorithm
7	Transportation problem - finding Optimal solution - Assignment problem - Least Time Transportation problems.
	BLOCK 3 : PERT / CPM
8	PERT/CPM : Arrow (network) diagram representations - Time estimates - critical path - Floats
9	Construction of Time chart and Resource Levelling
10	Probability and cost considerations in project scheduling - Shortest Route Problem - Project control.

	BLOCK 4 : REPLACEMENT THEORY
11	Replacement Theory : Introduction - Various replacement situations
12	Replacement policy - Variable maintenance costs and fixed money value - Variable maintenance costs and Variable money value
	BLOCK 5 ; REPLACEMENT POLICY
13	Individual replacement policy - Group replacement policy
14	Reliability - Applications of Replacement problems in real life problem.

REFERENCE BOOKS:

1. Hamdy A Taha, Operations Research An Introduction, Macmillan Publishing Company (1982)
2. Don.T.Philps, A.Ravindran, James.J.Solberg, Operations Research - Principles and Practice, John Wiley & Sons (1976).
3. Richard I Lenin, Charles A.Kirkpatrick, David S Rubin, Quantitative Approach to Management.

Course Code	Title of the Course
10162 / 12762	SYSTEM ANALYSIS AND DESIGN

Course Objectives

To understand about the system and its Development life cycle

To be able to analyze, design, develop, implement and maintain software system.

Course Outcome

On Successful completion of the course the students should have:

- Understood the life cycle of the software development.
- Able to prepare software system documentation

Unit No.	Contents
	BLOCK 1 : SYSTEM CONCEPTS AND SYSTEM DEVELOPMENT LIFE CYCLE
1	System Concepts - Characteristics - Elements of a system - Types of Systems: Abstract, Physical, Open, Closed and Man-made Information system - Computer Based Information Systems: MIS, DSS, TPS and OAS
2	System Development Life Cycle - Problem Definition - Feasibility Study - Analysis - Design - Development - Implementation - Post Implementation and Maintenance
3	System Analyst : Interpersonal Skills - Technical Skill - Communication Skills - Role of Systems Analyst.
	BLOCK 2 : SYSTEM ANALYSIS
4	System Analysis : Bases for planning in System Analysis - Preliminary Investigation - Determining the User's information requirements, Case Scenario, Problem Definition and Project Initiation, Background Analysis
5	Fact Finding Techniques : Interview - Questionnaire - Record Review - Observation. Systems Analysis: Analysing Systems data - Feasibility Study: Technical, Economical and Operational - Steps in Feasibility Analysis, Feasibility Report, Oral Presentation
6	Systems Costs & Benefits: Categories of Cost - Benefits - Cost Benefit Analysis: Break Even, Present Value, Pay Back and Cash Flow. Analysis Tools : Data flow concept - Data Flow Diagram - Data Dictionary - Decision Table - Decision Tree - Structured English.
	BLOCK 3 : SYSTEM DESIGN
7	System Design : Process and stages of System Design : Logical and Physical Design. Design Methodologies: Structured design - Form Driven Methodology - Major Development Activities
8	Input Output and Form Design: Input Design : Capturing Data for input - Input Validation - Input Design of on-line systems. Output Design - Printed,

	Display and Audio.
9	Forms Design : Definition - Classification of Forms, Requirements of Forms Design - Types of Forms - Forms Control.
	BLOCK 4 : FILE AND DATABASE DESIGN:
10	File concepts - Types of Files - Methods of File Organization - Sequential - Direct - Indexed - Database Design: Database concept
11	Types of Databases : Hierarchical, Network and Relational.
12	System Development: Software Design - Top Down Approach - Flow Chart: System Flow Chart - Program Flow Chart - HIPO - IPO - VTOC - Warnier Orr Diagram - Structured Walkthrough - Quality Assurance - Levels of Assurance - System Testing - Special Systems Tests
	BLOCK 4 : SYSTEM EVALUATION,IMPLEMENTATION AND MAINTENANCE
13	System Evaluation and Implementation Training Personnel - Training Methods - Conversion: Conversion Methods - Parallel, Direct, Pilot and Phase-in. Conversion Plan - Site Preparation - Data and File Preparation - Post Implementation Review -
14	System Maintenance : Corrective - Adaptive - Hardware and Software Selection : Computer Industry - Software Industry - Procedure of Hardware and Software Selection: Major phases in Hardware and Software selection - Evaluation Process - Financial considerations.

Text Book

Elias M.Awad, Systems Analysis and Design, 1990, Galgotia Publication Pvt. Ltd.

Reference Book:

1. James A. Sen, Analysis and Design of Information System, 1985, McGraw Hill.

COURSE CODE	TITLE OF THE COURSE
10163 / 12763	VISUAL BASIC PROGRAMMING

Course objectives

- To be able to understand the fundamentals of windows GUI
- To be able to run variable applications on windows
- To be able to understand visual Basic Programming concepts

Course outcome

- Students can develop GUI based applications using VB

Unit No	Concepts
	BLOCK 1: VISUAL BASIC CONCEPTS
1	Introduction to GUI - Visual Basic : Starting and Exiting Visual Basic Project Explorer Working with Forms Properties Window
2	Using the Toolbox Toolbars Working with Projects Programming Structure of Visual Basic applications Event and Event driven Procedures
3	Program Design - Form and Controls - Writing the Code - Saving, Running and Testing - Making EXE File - Printouts
	BLOCK 2 : VISUAL BASIC CODE,EVENTS AND CONTROLS
4	Adding code and using events: Using literals data types - declaring and using variables using the operator subroutines and functions
5	Looping and decision control structures: if then else ,structure select structure , for next , do.. loop and while.. wend.
6	Using intrinsic Visual basic Controls with methods and Properties: Label ,Text box, Command button, Frame, Checkbox, option button, List box, Combo box, Drive List box, directory List box and file list box Formatting controls control arrays, Tab order
	BLOCK 3 : VISUAL BASIC PROCEDURES, FUNCTIONS AND ARRAYS
7	Creating Procedures, functions - String functions, date and Time function , numeric functions- Recursive Functions
8	Multiple Forms - Startup Forms - SubMain Procedure
9	Arrays - Control Arrays - Indexing and Event Handling - Graphics
	BLOCK 4 : MENUS AND MDI FORMS

10	Menus: creating menus, adding code to menus
11	Using MDI forms - MDI form basic building MDI form creating MDI Child Forms
	BLOCK 5: DATABASE OBJECT (DAO) AND PROPERTIES
12	Database object (DAO) and properties -accessing Recordset objects- Move first, MoveLast, MovePrevious and MoveNext methods Begin , Commit and Rollback transaction accessing Microsoft Access files.
13	Active Data Objects (ADO) ADO and OLE DB and ADO Primer What are OLE DB and ADO? ADO object Model Converting DAO Code to Use ADO.
14	Connecting to the database Retrieving a recordset Creating a query dynamically Using a parameterized query using action queries - Adding records Editing records closing the database connection.

Text Books

2. Gary Cornwell Visual basic 6 , Tata McGraw Hill

Reference Books:

4. Scott warner Teach yourself Visual basic 6 , Tata McGraw-Hill
5. Noel Jerke The Complete Reference , Tata McGraw-Hill
6. Eric A. Smith, Valar Whisler, and Hank Marquis Visual Basic 6 programming

COURSE CODE	TITLE OF THE COURSE
10164 / 12764	VISUAL BASIC PROGRAMMING LAB

Course objectives

- To be able to understand the fundamentals of windows GUI
- To be able to run variable applications on windows
- To be able to understand visual Basic Programming concepts

Course outcome

- Students can develop GUI based applications using VB

Unit No.	Contents
	BLOCK 1
1	Building simple applications
2	Working with intrinsic controls ,Control Arrays
	BLOCK 2
3	Application with multiple forms
4	Application with dialogs
5	Application with Menus
6	Application using data controls
7	Application using Common Dialogs
	BLOCK 3
8	Drag and Drop Events
9	Database Management
10	Creating ActiveX Controls
11	Database object (DAO) and properties
12	Active Data Objects (ADO) ADO and OLE DB
	BLOCK 4
13	Connecting to the database ,Retrieving a recordset Creating a query dynamically Using a parameterized query using action queries - Adding records Editing records closing the database connection
	BLOCK 5

14	Simple Application development: <ol style="list-style-type: none"> 1. Library information system 2. Students mark sheet processing 3. Telephone directory maintenance 4. Gas booking and delivering 5. Electricity bill processing 6. Bank Transaction 7. Pay roll processing 8. Personal information system 9. Question database and conducting Quiz 10. Personal diary
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Text Books

5. Gary Cornwell Visual basic 6 , Tata McGraw Hill

Reference Books:

2. Scott warner Teach yourself Visual basic 6 , Tata McGraw-Hill
3. Noel Jerke The Complete Reference , Tata McGraw-Hill
4. Eric A. Smith, Valar Whisler, and Hank Marquis Visual Basic 6 programming