Bsc.Computer Science

Course Code	Title of the Course
13011A	Part I: Tamil - Paper I

PART- I TAMIL

பொதுத்தமிழ்

நோக்கம் : மொழி அறிவு, இலக்கண அறிவை வளர்த்தல்

பிரிவு -1 : இசைப்பாடல்

கூறு 1

7. கண்ணதாசன் - ஸ்ரீ கிருஷ்ண கானம்

- 13. புல்லாங்குழல் கொடுத்த
- 14. குருவாயூருக்கு வாருங்கள்
- கூறு 2

19. கோகுலத்து பசுக்கள்

- 20. கோகுலத்தில் ஒரு நாள் ராதை
- 21. ஆயர்பாடி மாளிகையில்

கூறு 3

பட்டுக்கோட்டை கல்யாண சுந்தரம்

13. நெஞ்சில் குடியிருக்கும்

14. செய்யும் தொழிலே தெய்வம்

கூறு 4

கூள 5

7. பாரதியார்

கண்ணன் என் விளையாட்டுப்பிள்ளை பாரத மாதா திருப்பள்ளி எழுச்சி

பிரிவு - 2 : கவிதை, புதுக்கவிதை

-			
	<i>19.</i> பாரதிதாசன்	-	உலகப்பன் பாட்டு (5)
	<i>20.</i> நாமக்கல் கவிஞர்	-	நோயற்ற வாழ்வு 7 பாட்டு
	<i>21.</i> பெ.தூரன்	-	நிலா பிஞ்சு
கூறு 6			
	<i>19.</i> ഖல்லிக் கண்ணன்	-	வெறும் புகழ்
	<i>20.</i> கு.ப.இராஜகோபாலன்	-	எதற்காக?
	<i>21.</i> மீரா	-	பதினைந்து
கூறு 7	7		
	<i>13.</i> சிற்பி	-	சா்ப்ப யாகம்
	<i>14.</i> ஞானக்கூத்தன்	-	தோழா் மோசிகீரனாா்
கூறு 8	3		
	<i>13.</i> அப்துல் ரகுமான்	-	கண்ணும் எழுதேம்
	<i>14.</i> சண்முக சுப்பையா	-	ഖധിന്വ

கூறு 9

பிரிவு - 3 : காப்பியம்

<i>13.</i> சிலப்பதிகாரம்	-	வழக்குரை காதை
<i>14.</i> கம்பராமாயணம்	-	அயோத்தியா காண்டம்
		307

பிரிவு - 4 : காப்பியம்

- கூறு 10
 - **7. சீறாப்புராணம் -** ஈத்தங்குலை வரவழைத்த படலம் (1)
- கூறு 11
 - **தேம்பாவணி -** காட்சிப்படலம்
 - பாடல் எண் (ஒவ்வொரு பாடலின் முதல்வரி)
 - *159.* இன்னவாயில்
 - 160. கொழுந்துறும்
 - 161. பஞ்(ச) அரங்கில்

கூறு 12

தேம்பாவணி - காட்சிப்படலம்

- பாடல் எண் (ஒவ்வொரு பாடலின் முதல்வரி)
- *162.* எண்ணுளே
- 163. ஒண்தலங்கள்
- 164. இரவியேந்த கஞ்சக்

கூறு 13

- **தேம்பாவணி -** காட்சிப்படலம்
- பாடல் எண் (ஒவ்வொரு பாடலின் முதல்வரி)
- *165.* கன்னியாயதாயும்
- 166. ஏந்தி ஒங்கு உளத்து
- *167.* ஆவ தேமுனர்
- 168. கொல்லும் வேலொடும்

கூறு 14

- **தேம்பாவணி -** காட்சிப்படலம்
- பாடல் எண் (ஒவ்வொரு பாடலின் முதல்வரி)
- 169. என்ற வாசகம்
- 170. அம்பினால்
- 171. வேண்டும் ஓர் வினை

Course Code	Title of the Course
13011B	PART-I: COMMUNICATION SKILLS I

Learning objectives:

- a. To make students to understand the basic skills of Communication.
- b. 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 – IIIOral Communication – Meaning – Importance- Forms of OralCommunicationIntonation – Meaning – Function- TypesVnit – IVIntonation – Meaning – Function- TypesPreparation of Speech- Steps InvolvedPrinciples of Effective Oral Communication

BLOCK III: WRITTEN COMMUNICATION

Unit – VIWritten Communication – Meaning –Steps – Importance- Advantages Use
of words and PhrasesUnit – VIISentence – Meaning –Sentence formation- Characteristics of an
Effective SentenceUnit–VIII Paragraph Writing –Essay Writing –Steps Involved –Outline-Layout – Contents-
Drafting-Correction- Final Draft

BLOCK IV: OFFICIAL COMMUNICATION

Unit – IXApplication for Employment and Curriculum Vitae –Steps involvedUnit – XNon –Verbal Communication – Meaning –Types –Body Language –Postures-Gestures –Facial Expressions –Eye ContactFacial Expressions –Eye ContactUnit – XIReport Writing –Report –Types of Reports –Format of a ReportUnit – XIIEssentials of a Good Report –Preparation of Report-Procedure InvolvedUnit – XIIIMeetings-Purpose of the Meeting – Procedure

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

References:

- *19.* Krishna Mohan & Meera Banerjee, Developing Communication Skills, 2005.
- 20. Geetha Nagaraj, Write to Communicate, 2004.
- 21. Wren & Martin, English Grammar and Composition, 2002.
- 22. Dale Carnegie, How to Win Friends and Influence People, 1981.
- 23. Dale R Jordan, Language Skills and Use.

24.Gartside L. Bahld, Nagammiah and McComas, Satterwhite, Modern Business Correspondence.

- 25. Rajendra Pal and Kortahalli J S, Essentials of Business Communication.
- 26. Wallace, Michael J, Study Skills in English.
- 27. Editors of Readers Digest, Super Word Power.

Course Code	Title of the Course
13012	Part- II: English Paper I

Learning objective:

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

BLOCK I: PROSE I

Unit – I Unit – II	Water-the Elixir of life Mrs. Packletide's Tiger	- C.V. Raman - 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
8		
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:

- 4. Sebastian D K, Prose for the Young Reader, Macmillan.
- 5. Active English Grammar, Ed. by the Board of Editors, Macmillan.

6. Modern English – A Book of Grammar Usage and Composition by N.Krishnaswamy, Macmillan Publishers.

Course Code	Title of the Course
13013	Programming in C

Course Objectives:

- > To provide an overview of working principles of C language.
- > To understand and apply the functions, arrays, pointers.
- > To implement the features of C language in real world applications

Course Outcome:

• Able to understand the C programming techniques

Unit No.	Contents	
	BLOCK 1: INTRODUCTION	
1	Introduction and Features: History of C, Importance of C, Basic Structure of C	
	program, character set, Tokens, keywords and identifiers	
2	Constants and variables and data types: declaration of variables, defining	
	symbolic constants, declaring a variable as a constant	
3	Operators and expressions: arithmetic, relational, logical, assignment operators,	
	arithmetic expression, Evaluation of expressions, precedence of arithmetic	
	operators	
	BLOCK 2 : 1/0 OPERATIONS AND DECISION MAKING	
4	Managing I/O operations: reading and writing a character, formatted input, output	
5	Decision making and branching: IF statement, Ifelse statement, nesting if else	
	statement, else if ladder, switch statement, goto statement, while statement, do	
	statement, for statement	
6	arrays: one-dimensional arrays, declaration, initialization, two dimensional	
	arrays, multi dimensional arrays, dynamic arrays	
7	Strings : Declaration, Initialization of string variables, reading and writing	
	strings, string handling functions	
	BLOCK 3 : USER DEFINED FUNCTIONS	
8	Functions basics: Elements of user defined functions, definitions, return values	
	and their types, function calls, declaration, nesting of functions, recursion	
9	Structures and Unions: Defining a structure, declaring a structure variable,	
	accessing structure members, array of structures, array within structures,	
	structures within structures, structures and functions	
	BLOCK 4 : POINTERS	
10	pointers: Basics, declaring, initialization of pointer variables, address of variable,	
11	accessing a variable through its pointer	
11	Pointer as Functions: Chain of pointers, pointer increments and scale factors	
12	Strings with Pointer: pointers and character strings, pointers and structures	
	BLOCK 5 : FILES	
13	Introduction: Introduction, Defining, opening and closing files, I/O operations on files	
14	Error Handling methods: Error Handling during I/O operations, command line	
	arguments	

TEXT BOOK:

- Programming with C, Schaum outline series, Gottfried, TataMcHill,2006
 Programming with ANSI and Turbo C, Ashok N Kamthane, Pearson Education, 2006

REFERENCE BOOK:

- 1. C: The complete reference, H Schildt, TMH Edition, 2000
- 2. Kanetkar, Let Us C, BPB publications, 1999.

Course Code		Title of the Course
13014	Lab : Programming in C	

Course Objectives

- To be able to solve real world 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

Unit No.	Contents		
	BLOCK 1: C PROGRAM FUNDAMENTALS		
1	Simple C programs		
2	Using IF and switch constructs programs		
3	Looping related problems		
	BLOCK 2 : FUNCTIONS, ARRAYS, STRINGS		
4	Programs using functions		
5	IF statement, Ifelse statement, nesting if else statement, else if ladder, switch statement, goto statement, while statement, do statement, for statement		
6	One-dimensional arrays, two dimensional arrays, multi dimensional arrays		
7	Initialization of string variables, reading and writing strings, string handling functions		
	BLOCK 3 : STRUCTURE AND UNIONS		
8	Programs using structures		
9	Programs using unions		
	BLOCK 4 : POINTERS		
10	Initialization of pointer variables, address of variable, accessing a variable through its pointer		
11	Pointer as Functions		
12	Strings with Pointer: pointers and character strings, pointers and structures		
	BLOCK 5 : FILES		
13	Programs based on file handling		
14	Error Handling methods: Error Handling during I/O operations, command line arguments		

II SEMESTER

Course Code		Title of the Course
	13021 A	Part I: Tamil Paper - II

நோக்கம் : மொழி அறிவு, இலக்கண அறிவை வளர்த்தல்

பிரிவு 1: தேம்பாவணி

கூறு 1

தேம்பாவணி - காட்சிப்படலம்

பாடல் எண் (ஒவ்வொரு பாடலின் முதல்வரி)

172.	சொல் தவிர்ந்த
173.	அன்னை
174.	அஞ்சுவார்
175.	சொல்லக் கேட்டனள்
176.	மற்செய்கை
177.	மண்கனியப்
178.	அழுது ஆர்ந்த

கூறு 2

தேம்பாவணி - காட்சிப்படலம்

பாடல் எண் (ஒவ்வொரு பாடலின் முதல்வரி)

1 <i>79</i> .	பொய் பொதுளும்
180.	இன்பு அருந்தி
181.	வழுதாயின இன்பு
182.	மரம் ஏவினர்

கூறு 3

தேம்பாவணி - காட்சிப்படலம்

பாடல் எண் (ஒவ்வொரு பாடலின் முதல்வரி)

- *183.* மண்ணோர்கள்
- 184. பொய்யா விதியோய்
- *185.* விடியா இருள்
- *186.* 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. முதலெழுத்துகள், சார்பெழுத்துகள்16. மொழி முதலெழுத்துகள் , மொழி இறுதி எழுத்துகள்

கூறு 7

22. ஒற்றெழுத்து மிகலும் மிகாமையும்,23. ஆகு பெயர் , அன்மொழித் தொகை.24. வினா-விடை வகைகள்

கூறு 8

29. தமிழ்ச் சொல்லமைப்பின் சிறப்பு – பெயர் , வினை, இடை, உரி வடிவங்கள் , *30.* பிற மொழிச் சொற்களைத் தமிழில் ஆளும் முறைகள்

கூறு 9

31. அல் வழி, வேற்றுமைப் புணர்ச்சிகள் *32.* திணை, பால், எண், இட இயைபு.

பிரிவு 4: தமிழ் இலக்கிய வரலாறு

கூறு 10

<i>8.</i>	இக்கா	ல 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 , தொலைக்காட்சி, வானொலி, 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
13021 B	PART-I : COMMUNICATION SKILLS - II

Learning objectives:

2.

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

BLOCK I: INTRODUCTION TO 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:

- *33.* Dutt. Kiranmai & Geeta Rajjevan. Basic Communication Skills. Rev.ed. Foundation Books Pvt.Ltd. Cambridge House, New Delhi 2006.
- *34.* Bill R. Swetmon. Communication Skills for the 21st Century. Chennai: Eswar Press. First South Asian Edition 2006.
- 35. Glass. Lillian. Talk to Win. New York: Perigee Books, 1987.
- 36 Pease. Alan. Signals: How to Use Body Language for Power, Success and Love, New York: Bantam Books, 1981.
- 37. Walters. Lilly. Secrets of Successful Speakers. New York: McGraw-Hill, Inc., 1993.
- 38 Mandal. S.K. How to Succeed in Group Discussions & Personal Interviews. Mumbai: JAICO Publishing House.
- *39.* Rogoff. Leonard and Ballenger. Grady. Office Guide to Business Letters, Memos & Reports. New York: Macmillan, 1994.
- 40. Krishna Mohan & Meera Banerjee, Developing Communication Skills, 2005.
- 41. Geetha Nagaraj, Write to Communicate, 2004.
- 42 Wren & Martin, English Grammar and Composition, 2002.
- 43. Rajendra Pal and Kortahalli J S, Essentials of Business Communication.

Course Code	Title of the Course
13022	Part II: English Paper- II

Learning objective:

2. 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 -William Wordsworth
- **Unit III** Grecian Urn 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:

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

Course Code	Title of the Course
13023	OBJECT ORIENTED PROGRAMMING and C++

Course Objectives:

- > To provide an overview of working principles of object oriented paradigm
- > To understand and apply the OOPs fundamentals
- > To implement the features of OOP in real world applications

Course Outcome:

- Able to understand the object oriented programming techniques
- Able to write real world problems with C++

Unit No.	Contents
	BLOCK 1: INTRODUCTION
1	Introduction and Features: Evolution of Object Oriented Language, Object
	oriented Paradigm, Basic concept of object-oriented programming- objects,
	classes, encapsulation and data abstraction, inheritance, polymorphism, dynamic
	binding, message passing
2	Popular OOP languages. Moving from C to C++ Introduction – Predefined
	console streams, hierarchy of console stream classes,
3	I/O operations; Unformatted I/O operations, formatted console I/O operations,
	manipulators, custom/user-defined manipulators.
	BLOCK 2 : CLASSES AND OBJECTS
4	Classes and Objects: Introduction, class specification, class objects, accessing
	class members, defining member functions, accessing member functions within a
	class, outside member functions as inline, private member function,
5	Memory allocation for objects: array of objects, function prototype, call by
	reference, return by reference, objects as function arguments, inline function,
	friend function, constant parameter and member function.
6	Object Initialization: Introduction - constructors, default constructor,
	parameterized constructors, multiple constructors in a class, dynamic
	initialization through constructors, copy constructor, dynamic constructor,
	destructor. Dynamic Objects: Introduction, pointers to objects, array of pointers
	to objects, this pointer.
	BLOCK 3 : INHERITANCE, POLYMORPHISM AND DATA
	CONVERSION
7	Inneritance: Introduction, derived class declaration, forms of inneritance,
	historrahical inheritance, hybrid inheritance,
0	Belimeers binne , later duction, Exercise, everlagding, Operator everlagding
o	introduction unary operator overloading binary operator overloading
	assignment operator overloading, overloading with friend functions
0	Deta conversion, conversion between basic data types, conversion between
9	biasts and basis types, conversion between basic data types, conversion between
	function: Introduction need for virtual functions, pure virtual functions, abstract
	classes
	BLOCK 4 · TEMPLATES AND FILES

10	Generic Programming with Templates: Introduction - class templates – class
	template with multiple arguments
11	Function template: function template with multiple arguments. Inheritance of
	class template.
12	Streams with Files: Introduction, hierarchy of file stream classes, opening and
	closing of files, file pointers and their manipulators, sequential access to a file,
	file input/output with stream class, random access to a file.
	BLOCK 5 : EXCEPTION HANDLING
13	Exception Handling: Introduction – Basics of exception handling, exception
	handling mechanism, throwing mechanism, catching mechanism. Exceptions in
	constructors and destructors
14	Other Exception Handling methods: Handling uncaught exceptions, exceptions
	in operator overloaded functions, exception in inheritance tree, exceptions in class
	templates, memory allocation failure exception.

TEXT BOOK:

- *a.* E.Balagurusamy, Object oriented programming in C++, Third Edition, Tata McGraw Hill Publications, 2007.
- *b.* Mastering C++, K.R Venugopal and Rajkumar, T.Ravishankar, Tata McGraw Hill Publishing Company Ltd., 2006.

REFERENCE BOOK:

i. Object Oriented Programming in C++, Fourth Edition, Robert Lafore, Galgotia Publications Pvt. Ltd., New Delhi. 2010.

Course Code	Title of the Course
13024	LAB: OBJECT ORIENTED PROGRAMMING and C++

Course Objectives:

- To understand and apply the OOPs fundamentals
- To implement the features of OOP in real world applications

Course Outcome:

• Able to write real world problems with C++

Unit No.	Contents
	BLOCK 1: INTRODUCTION
1	Writing simple C++ programs
2	Using if and switch constructs Programs
3	Looping , Arrays ,Structure statements: for, while, do-while, Strings and
	Matrices Programs Problems
	BLOCK 2 : OOPs CONCEPT
4	Functions: static function, friend function ,constructor , destructor and operator
	overloading and Recursive programs
5	Inheritance : Inheritance types
6	Polymorphism : polymorphism types, Virtual function
	BLOCK 3 : FILE AND POINTERS
7	File: File Handling C++ Programs, opening and closing a data file - creating a
	data file, processing a data file.
8	Pointers : Pointers and Pointers with Arrays Programs
9	Virtual functions: Pure virtual functions
	BLOCK 4 : TEMPLATES AND FILES
10	Generic Programming with Templates: Demonstrating class templates, class
	template with multiple arguments
11	Function template: Demonstrating function template with multiple arguments.
	Inheritance of class template.
12	Streams with Files: opening and closing of files, file pointers and their
	manipulators, sequential access to a file, file input/output with stream class,
	random access to a file.
	BLOCK 5 : EXCEPTION HANDLING
13	Exception Handling: programs using exception handling, Exceptions in
	constructors and destructors
14	Other Exception Handling methods: Handling uncaught exceptions, exceptions
	in operator overloaded functions, exception in inheritance tree, exceptions in class
	templates, memory allocation failure exception.

III SEMESTER Course Code Title of the Course Part I: Tamil Paper- III 13031 A **நோக்கம்** : மொழி அறிவு, இலக்கண அறிவை வளர்த்தல் 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 – பெருங்குன்றூர்கிழார் - 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
13031B	PART-I : HUMAN SKILLS DEVELOPMENT - I

Learning objective:

1. 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:

13. Les Giblin, Skill with People, 1995.

14. Shiv Khera, You Can Win, 2002.

15. Christian H Godefroy, Mind Power.

16. Dale Carnegie, How to Enjoy Your Life and Your Job, 1985.

17. Natalie H Rogers, How to Speak without Fear, 1982.

18. Dale Carnegie, How to Develop Self-Confidence and Influence People by Public Speaking.

Course Code	Title of the Course
13032	Part II: English Paper- III

Learning objective:

2. 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 Chekhou
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	- Huge Chesterman
Unit – X	Reunion	- W.st. Joh 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:

- 2. 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.
- 3. One Act Plays, Ed. by the Board of Editors, Harrows Publications, Chennai.
- 4. Modern English A Book of Grammar Usage and Composition by N.Krishnaswamy,
- Macmillan Publishers.

5. English for Communication, Ed. by the Board of Editors, Harrows Publications, Chennai.

Course Code	Title of the Course
13033	DATA STRUCTURES AND ALGORITHMS

Course Objectives:

- The learner should be well versed with the fundamentals of Algorithms, learn various data structures, should be able to use them appropriately as per need during development of programs.
- Also, the learner should know different sorting and searching techniques so that correct techniques can be used in different programs so that the complexity of the program does not increase due the sorting/ search technique employed.

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.
- Using the data structures real time applications
- Able to analyze the efficiency of Data Structures

Unit No	Contents	
	BLOCK 1 : INTRODUCTION	
1	Introduction to Data Structure : Types of Data Structure , Primitive data	
	types	
	Algorithms: –Time and space Complexity of algorithms	
2	Arrays: Array initialization, Definition of Array, Characteristic of Array	
	,One-dimensional Array, Two-dimensional array and Multi dimensional	
	array	
	BLOCK 2 : LINEAR DATA STRUCTURE	
3	Stack : Stack related terms, Operations on a stack,	
4	Representation of Stack: Implementation of a stack – application of Stack.	
	Expression Evaluation Polish notation.	
5	Queues: Operations on queue Circular Queue, Representation of Queues,	
	Application of Queues	
6	List: Merging lists, Linked list, Single linked list, Double Linked List,	
	Header Linked list	
7	Operation on Linked List : Insertion and Deletion of linked list	
8	Traversal: Traversing a linked list, Representation of linked list.	
	BLOCK: 3 NON-LINEAR DATA STRUCTURE	
9	Trees: Binary Trees, Types of Binary trees, Binary Tree Representation	
10	Binary Tree operations / Applications : Traversing Binary Trees, Binary	
	Search tree,	
11	Operations on Binary Tree: Insertion and Deletion operations, Hashing	
	Techniques.	
	BLOCK 4 : SEARCHING TECHNIQUES	
12	Searching : Introduction, Searching, Linear Search, Binary Search	
	BLOCK 5: SORTING TECHNIQUES	
13	Sorting: Bubble sort, Insertion sort, Radix sort	
14	Other sorting Techniques: Selection sort, Quick sort, Tree sort.	

Text Books:

- 1. Fundamentals of Data structures , Second edition, Ellis Horowitz and Sartaj Sahini, Universities press, 2007.
- 2. Data Structures, Seymour Lipschutz, G.A.Vijayalakshmi Pai, Second Edition, Schaum's Outlines, Tata Mc-Graw Hill Private Ltd., 2006.

Reference Books:

1. Programming and Data Structure, Pearson Edition, Ashok N Kamthane, 2007.

Course Code	Title of the Course
13034	Lab : Data Structures and Algorithms

Course Objectives

- To be able to solve data structure problems using C++ language
- To learn and implement C++ language programming techniques
- To introduce the efficiency of the algorithm

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	Contents
No.	
	BLOCK 1 : SIMPLE C++ PROGRAMS
1	Introduction Simple C++ Programs
2	Control Structures: Using if and switch constructs Programs
3	Looping , Arrays , Structure statements: for, while, do-while, Strings and
	Matrices Programs Problems
	BLOCK 2 : OOPs CONCEPTS
4	Functions: static function, friend function, constructor, destructor and operator
	overloading and Recursive programs
5	Inheritance and polymorphism: Inheritance types and polymorphism types,
	Virtual function
6	File: File Handling C++ Programs, opening and closing a data file - creating a data
	file, processing a data file.
1	Pointers : Pointers and Pointers with Arrays Programs
0	BLOCK 3: LINEAR DATA STRUCUTURE
8	Stacks : Stack Implementation, expression evaluation, Polish notation
9	Queues: Queue Implementation, Applications of Queue
10	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
	IIIKEU IISI. DI OCK A : NON LINEAD DATA STRUCTURE
11	DLOCK 4 : NON LINEAR DATA STRUCTURE
11	Tree Programs : Trees, Binary Trees, Types of Binary trees, Binary Tree Depresentation, Trevensing Dinary Trees, Dinary Search tree, Insertion and Deletion
	Representation, Traversing Binary Trees, Binary Search tree, Insertion and Deletion
12	Cranha
14	Graphs: Shortest Dath Algorithms
	o Dijkstra's Algorithm
	o Granhs with Negative Edge costs
	o Acvelic Graphs
	o All Pairs Shortost Paths Algorithm
	Minimum cost Sponning Trees
	o Kruskal's Algorithm
	o Prime's Algorithm
	o Applications
	□ Breadth First Search

	BLOCK 5 : SEARCHING AND SORTING ALGORITHMS
13	Searching Techniques: Linear and Binary search Programs
14	Sorting techniques: Bubble sort, Quick sort, Insertion sort, Merge sort

Reference Books:

- 1. Data Structures, Seymour Lipschutz, G.A.Vijayalakshmi Pai, Second Edition, Schaum's Outlines, Tata Mc-Graw Hill Private Ltd., 2006.
- 2. Fundamentals of Data structures in C, Second edition, Ellis Horowitz and Sartaj Sahini, Universities press, 2007.
- 3. Programming and Data Structure, Pearson Edition, Ashok N Kamthane, 2007.

IV SEMESTER

Course Code	Title of the Course
13041 A	Part I: Tamil Paper - IV

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 நிற்றல், உடன்போக்கு
- **கூறு 8:** புறப்பொருள் துறைகள் வஞ்சினக்காஞ்சி, கையறுநிலை, செவியறிவுறூஉ பி**ரிவு 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 , சிற்பியின் - மௌன மயக்கங்கள்.

Course Code	Title of the Course	
13041 B	PART-I : HUMAN SKILLS DEVELOPMENT - II	
Learning obj	ective:	
3. To Mak BLOCK I:	e the Students develop human skills. 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 Unit – XIV	Cooperative Learning Skills Making Social Responsibilities Causes	
References:	Waking Social Responsionnes-Causes	
13 Les Giblin Sl	kill with People, 1995	
14 Shiy Khore You Can Win 2002		
15. Christian H G	odefroy. Mind Power.	

- 16. Dale Carnegie, How to Enjoy Your Life and Your Job, 1985.
- 17. Natalie H Rogers, How to Speak without Fear, 1982.
- Dale Carnegie, How to Develop Self-Confidence and Influence People by Public Speaking.

Course Code	Title of the Course
13042	Part II: English Paper - IV

Learning objective:

2. 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 Corbelt
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 TagUnit XIV- Expansion of Proverbs
 - Group Discussion Conversation (Apologizing, Requesting, Thanking)

References:

- 6. Sizzlers, by the Board of Editors, Publishers-: Manimekala Publishing House, Madurai.
- 7. Pygmalion G.B. Shaw
- 8. Swami and Friends R.K. Narayan
- 9. Tales from Shakespeare Ed. by the Board of Editors, Harrows Publications, Chennai.
- Modern English A Book of Grammar Usage and Composition by N.Krishnaswamy, Macmillan Publishers.

Course Code	Title of the Course
13043	JAVA PROGRAMMING

Course objective

- To understand the basics of Java programming
- To understand Java packages, multithreaded programming

Course outcome

- Able to learn, write Java programs
- Able to develop applets graphics programs

Unit No	Contents
	BLOCK 1 INTRODUCTION
1	Java Evolution: Java history, features, java and Internet, WWW, web
	browsers
2	Overview :simple java program, program structure, tokens, statements
3	Writing Java programs: JVM, constants, variables, data types, type casting
	BLOCK 2 : OPERATORS AND EXPRESSIONS
4	Operators : arithmetic, relational, logical, assignment, increment and
	decrement, conditional, bitwise, special operators
5	Expressions : arithmetic, Evaluation of expression, operator precedence and associatively
6	Decision making and branching: If If Else nesting of If Else else if
Ŭ	switch. ? Operators, while, do, for jump in loops
	BLOCK 3 : CLASSES.OBJECTS
7	Defining a class: adding variables, methods, creating objects, accessing
-	members, constructors, method overloading, nesting of methods, inheritance,
	overriding methods, final classes
8	Arrays, strings and vectors: arrays, one dimensional arrays, two dimensional
	arrays, strings, vectors, wrapper classes
9	Interfaces : multiple inheritance, defining interfaces, extending interfaces,
	implementing interfaces, accessing interface variables
	BLOCK 4 PACKAGES AND MULTITHREADED PROGRAMMING
10	API packages : using system packages, naming conventions, creating
	packages, accessing packages, using a package, adding a class to a package
11	Basics : creating threads, extending the thread class, stopping and blocking a
	thread, life cycle of a thread, using thread methods, thread exceptions,
	synchronization, implementing the _Runnable' interface
12	Managing Errors : types of errors, exception handling code, multiple catch
	statements, using finally statement
	BLOCK 5 APPLET AND GRAPHICS PROGRAMMING
13	INTRODUCTION: preparing to write applets, applet life cycle, applet tag,
	adding applet to a HTML file, running the applet
14	The Graphics class: lines and rectangles, circles and ellipses, drawing arcs,
	drawing polygons, line graphs

Course Code	Title of the Course
13044	LAB : JAVA PROGRAMMING

Course Objectives:

To understand and apply the fundamentals of Java, Packages

Course requirement

Basic knowledge in programming principles

Course outcomes

- Able to create, test and run Java programs
- Able to write applet programs

Unit No	Contents
	BLOCK 1 JAVA FUNDAMENTALS
1	Simple Java programs
2	Programs using classes and objects
3	Conditional statements using Java
4	Looping statements using Java
	BLOCK 2 : OOP CONCEPTS
5	Operator overloading programs
6	Function overloading programs
7	Inheritance, packages
8	Polymorphism and message passing programs
	BLOCK 3 : VIRTUAL FUNCTION & THREADS
9	Threads
10	Virtual functions
	BLOCK 4 : I/O AND EXCEPTION HANDLING
11	Exception handling programs
12	I/O manipulation programs
	BLOCK 5 : APPLET AND NETWORK PROGRAMMING
13	Simple applet programs
14	Simple network programs using Java

SEMESTER V

Course Code	Title of the Course
13051	OPERATING SYSTEMS

Course objective

- To understand the operating system basics
- To understand the real and virtual memory management

Course outcome

- Able to know the memory organization, memory management
- Able to file and disk management

Unit No	Contents
110	BLOCK 1 INTRODUCTION
1	Introduction, components and goals, operating system architecture
2	Process concepts: Introduction, process states, process management
3	Interrupts, Interprocess communication
	BLOCK 2 : ASYNCHRONOUS CONCURRENT EXECUTION
4	Introduction, mutual exclusion, implementing mutual exclusion primitives
5	Software solution to the mutual exclusion problem, hardware solution to mutual exclusion problem, semaphores
6	Concurrent Programming, introduction, monitors
	BLOCK 3 : DEADLOCK AND INFINITE POSTPONEMENT
7	Introduction : Examples of deadlock, Related problem indefinite postponement, resource concepts
8	Conditions for Deadlock: Deadlock solution, prevention, avoidance with Dijkstra's banker algorithm, Deadlock detection, Recovery
9	Processor scheduling: Introduction, scheduling levels, preemptive vs nonpreemptive scheduling priorities, scheduling criteria, scheduling algorithms
	BLOCK 4 REAL MEMORY AND VIRTUAL MEMORY MANAGEMENT
10	Introduction, memory organization, memory management, hierarchy, management strategies
11	Contiguous vs non-contiguous memory allocation, fixed partition multiprogramming, variable partition multiprogramming
12	Virtual memory management Introduction, page replacement, strategies, page fault frequency, page replacement, page release, page size
	BLOCK 5 DISK PERFORMANCE & FILE, DATABASE SYSTEMS
13	Introduction, disk scheduling strategies, rotational optimization
14	File and database system introduction, data hierarchy, files, file systems, file optimization, file allocation, free space management, file access control

Text Book:

i. Operating Systems, Deital&Deital, Pearson Education, Third Edition, 2008

Reference Books

- *1.* An Introduction to operating system concepts and practice, Pramod Chandra, PHI,2008
- 2. Operating system concepts, Abraham silberschatz peter Galvin, Wiley India, 2007.

Course Code	Title of the Course
13052	RELATIONAL DATABASE MANAGEMENT SYSTEMS
	(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:

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

Reference Books:

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

Course Code	Title of the Course
13053	COMPUTER ARCHITECTURE

Course objective:

- To understand the computer design
- To understand the addressing modes

Course outcome:

- Able to know the storage devices
- Able to know the memory, I/O cache performance

Unit No	Contents
	BLOCK 1 INTRODUCTION
1	Fundamentals: Measuring and reporting performance, quantitative principles
	of computer design, classifying instruction set architecture
2	Memory addressing, addressing modes, types and size of operands, operations
	in the instruction set, operands and operations for media and signal processing
3	Instructions for control flow, Encoding an instruction set, Example
	architecture, MIPS and TM32
	BLOCK 2 : INSTRUCTION LEVEL PARALLELISM
4	Instruction Level Parallelism: Pipelining and Hazards - Concepts of ILP -
	Dynamic scheduling
5	Dynamic Hardware prediction - Multiple issues - Hardware based speculation
6	Limitations of ILP - Case studies: IP6 Micro architecture
	BLOCK 3 : ILP WITH SOFTWARE APPROACH
7	Instruction Level Parallelism With Software Approaches: Compiler
	techniques for exposing ILP - Static branch prediction
8	Static multiple issue : VLIW - Advanced compiler support - Hardware support
	for exposing parallelism
9	Hardware Vs software speculation. Mechanism - IA 64 and Itanium
	Processor.
	BLOCK 4 MEMORY AND I/O
10	Memory And I/O: Cache performance - Reducing cache miss penalty and
	miss rate - Reducing hit time - Main memory and performance - Memory
	technology
11	Types of storage devices - Buses - RAID - Reliability, availability and
10	dependability
12	1/O performance measures - Designing 1/O system.
	BLUCK 5 MULTIPROCESSOR AND THREAD LEVEL PARALLETISM
13	Multiprocessors And Thread Level Parallelism: Symmetric and distributed
15	shared memory architectures - Performance issues - Synchronization
14	Models of memory consistency - Multithreading
17	models of memory consistency multiuncuding.

TEXT BOOKS

- John L. Hennessey and David A. Patterson," Computer Architecture: A Quantitative Approach", Third Edition, Morgan Kaufmann, 2003.
- D. Sima, T. Fountain and P. Kacsuk, "Advanced Computer Architectures: A Design Space Approach", Addison Wesley, 2000.

REFERENCE BOOKS

- a. Kai Hwang "Advanced computer architecture Parallelism ScalabilityProgrammability" Tata Mcgraw Hill Edition 2001.
- b. Vincent P.Heuring, Harry F.Jordan, -Computer System Design and Architecture II, Addison Wesley, 2nd Edition 2004.

Course Code 13054

Title of the Course RELATIONAL DATABASE MANAGEMENT SYSTEMS (RDBMS) LAB

Course objective:

- To understand the SQL commands
- To understand the cursor, triggers, packages

Course outcome:

- Able to write from simple SQL queries to PL/SQL statements
- Able to write database applications using SQL

Unit	Contents
No.	
	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:

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

SEMESTER VI

Course Code	Title of the Course
13061	COMPUTER NETWORKS

Course Objectives:

- > To understand applications of computer networks
- > To provide in-depth knowledge of OSI layer, multiple access protocols

Course Outcome:

- > Enhance the perspective of routing algorithms, remote procedure call
- > Able to gain the knowledge in network security, symmetric/asymmetric key cryptography.

Unit	Contents
No.	
	BLOCK 1 : INTRODUCTION
1	Introduction : computer networks applications, line configuration, topology,
	transmission modes
2	Categories of Networks: LAN, WAN, MAN, OSI layers
3	Physical Layer: analog and digital signals performance, transmission media
	BLOCK 2: DATA LINK LAYER
4	Introduction: Error detection and correction, block coding, cyclic redundancy
	check, framing, flow and error control
5	Data link layer protocols: stop and wait protocol, sliding window protocol,
	ARQ, go-back-n ARQ, selective-repeat ARQ
6	Multiple access protocols: ALOHA, CSMA, CSMA/CD, CSMA/CA
	BLOCK 3 : NETWORK LAYER
7	Introduction: Circuit switching, Packet switching, Message switching, virtual
	circuit and datagram subnets
8	Routing Algorithms: state routing, shortest path routing, dynamic routing,
	distance vector routing
9	Multicast Routing: algorithms, congestion, control algorithms
	BLOCK 4 : TRANSPORT LAYER
10	introduction: process to process delivery, UDP, TCP, connection oriented vs
	connection less services
11	Application and Services: Domain Name system, Remote login, Mail
	exchange, File transfer, RPC, Remote file access, WWW and HTTP, SNMP
	BLOCK 5 : NETWORK SECURITY
12	Introduction: cryptography, Encryption models, Transposition and substitution
	chipers, Cryptographic principles
13	Symmetric key cryptography: DES, AES
14	Asymmetric key cryptography: RSA, security services

Text Books:

Computer Networks, 3rd Edition, Andrew S Tanenbaum, 2010
 Data Communication and Networking, 4th edition, Behrouz A. Forouzan, 2008

Reference Books:

- 1. Data and computer communication, 8th edition, William stallings, prentice Hall
- 2. An Engineering approach to computer networks, 2nd edition, S.Keshav, Pearson education,2008

Course Code	Title of the Course
13062	VISUAL BASIC PROGRAMMING

Unit	CONCEPTS
No	
	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,
0	numeric functions- Recursive Functions
8	Multiple Forms - Startup Forms - SubMain Procedure
9	Arrays - Control Arrays - Indexing and Event Handling - Graphics
10	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
	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
12	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

1. Gary Cornwell Visual basic 6 , Tata McGraw Hill

Reference Books:

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

Course Code	Title of the Course
13063	SOFTWARE ENGINEERING

Course Objective:

- To know of how to do project planning for the software process.
- To learn the cost estimation techniques during the analysis of the project.
- To understand the quality concepts for ensuring the functionality of the software

Course Requirement:

• Fundamental concepts of Software Engineering

Course Outcome:

- Understand the activities during the project scheduling of any software application.
- Learn the risk management activities and the resource allocation for the projects.
- Able to create reliable, replicable cost estimation that links to the requirements of project planning and managing.

Unit No.	Contents
	BLOCK 1 : INTRODUCTION
1	Software: Role of software, Software myths. Generic view of process: A
	layered technology, a process framework, The Capability Maturity Model
	Integration (CMMI)
2	Process patterns, Process assessment, Personal and Team process models.
3	Process model: The waterfall model, Incremental process models,
	Evolutionary process models, The Unified process.
	BLOCK 2 : REQUIREMENT ENGINEERING:
4	Design and Construction, Requirement Engineering Tasks, Requirements
	Engineering Process, Validating Requirements.
5	Building the Analysis Model: Requirement analysis, Data Modeling
	concepts, Object-Oriented Analysis
6	Modeling: Scenario-Based Modeling, Flow-Oriented Modeling Class-Based
	Modeling, Creating a Behavioral Model.
	BLOCK 3: SYSTEM DESIGN
7	Design Engineering: Design process and quality, Design concepts, the design
	model.
8	Architectural Design: Software architecture, Data design, Architectural
	styles and patterns, Architectural Design.
9	User interface design: The Golden rules, User interface analysis and design,
	Interface analysis, Interface design steps, Design evaluation.
1.0	BLOCK 4 : SYSTEM TESTING
10	Testing Strategies: Approach to Software Testing, Unit Testing, Integration
	Testing, Test strategies for Object-Oriented Software, Validation Testing,
	System Testing, the art of Debugging, Black-Box and White-Box testing.
11	Product Metrics: Software Quality, Product Metrics, Metrics for Analysis
	Model, Design Model, Source code and Metrics for testing, Metrics for
	Maintenance. Metrics for Process and Projects Domains: Software
	PLOCK 5 : DISK and OUAL ITY MANACEMENT
10	DLOCK J. KISK and WOALTTT MANAGEMENT Dick Strategies: Depositive ve Drogetive Dick strategies, software risks. Dick
12	KISK Strategies. Reactive vs. Proactive KISK strategies, software fisks, KISK identification
12	Disk Protection and refinement: Disk projection Disk refinement Disk
15	Mitigation Monitoring and Management DMMM Dan
	whitigation, wontoning and wanagement, Kwiwiwi Flan.

14	Quality Management: Quality concepts, Software quality assurance,
	Software Reviews, Formal Technical reviews, Statistical Software quality
	Assurance, Software reliability, The ISO 9000 quality standards.

TEXT BOOK:

1. Roger S. Pressman Software Engineering - A practitioner's Approach McGraw-Hill 6th Edition (2010)

REFERENCE BOOKS:

- 1. Richard Fairlay Software Engineering Concepts McGraw Hill Book Company (2005)
- 2. Pankaj Jalote An Integrated Approach to Software Engineering NarosaPublishing House 3rd Edition (2005)
- 3. Software Engineering, Somzerville, 8th Edition, Pearson Education 2007.
- 4. Software Engineering K.K. Agarwal & Yogesh Singh, 3rd Edition New Age International Publishers 2007.
- 5. Software Engineering an Engineering Approach James F. Peters, Witold Pedrycz John Wiley & Sons 2000.
- 6. Software Engineering Principles and Practice Waman S Jawadekar, , Tata McGraw-Hill 2004.

Course Code	Title of the Course
13064	LAB : 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.	Contents
1	Building simple applications
2	Working with intrinsic controls Control Arrays
2	Application with multiple forms
3	
4	Application with dialogs
5	Application with Menus
6	Application using data controls
7	Application using Common Dialogs
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
13	Connecting to the database ,Retrieving a record set Creating a query
	dynamically Using a parameterized query using action queries - Adding records
	Editing records closing the database connection
14	Simple Application development:
	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. FCISOIIal ulai y

Text Books

4. Gary Cornwell Visual basic 6, Tata McGraw Hill

Reference Books:

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