SARASWATHI NARAYANAN COLLEGE

(An Autonomous Institution Affiliated to Madurai Kamaraj University)

(Reaccredited with Grade 'B' by NAAC)

MADURAI – 625 022.

DEPARTMENT OF COMPUTER APPLICATIONS

Choice Based Credit System (CBCS)

Learning Outcomes-based Curriculum Framework (LOCF)

B.C.A. Programme

(For those who join in June 2022)

PRINCIPAL

Dr. M. Kannan, M.A., M.Phil., PGDTE., Ph.D.,

DEPARTMENT OF COMPUTER APPLICATIONS

1. **Mrs. R.Gandhimathi , MCA.,M.Ed., - Assistant Professor & Head**
2. **Mrs. R. Parimala Devi , MCA., - Assistant Professor**
3. **Mr. R. Suriya Prakash , MCA ., - Assistant Professor**

PROFILE OF THE COLLEGE

Thiru. L.Narayanan Chettiar, a renowned philanthropist founded Saraswathi Narayanan College at Perungudi near Madurai Airport in the year 1966. The college is a prestigious academic powerhouse catering to the educational needs of students hailing from economically weaker and socially oppressed section of our society. It imparts education of the highest quality to students irrespective of caste, creed and religion. The guiding principles of our college are duty, devotion and distinction. The institution has proved an innovative leader and a catalyst in the best educational, cultural and economic interests of students. It is committed to make the students morally upright, intellectually resourceful , socially advantaged and globally competent. It is devoted to teaching, research and extension activities with equal importance.

The college set off its academic journey with Pre-University Courses in the year 1966-67. The Institution started offering UG programmes from the academic year 1968-69. It was upgraded as Post-Graduate Institution in 1979-80 and as Research Institution in 1984-85. The Co-educational system was introduced for M.Phil programmes in the academic year 2001-02 and for PG programmes in the year 2002-03 with the noble objective of promoting higher education among girls in rural areas. Girls have been enrolled in UG programmes also since the academic year 2010-11.

The green campus of 66 acres has a built-up area of 1,70,059 sq.ft. A new library housed at Silver Jubilee building at the cost of Rs.25,00,000/- and it was inaugurated by his excellency Dr.M.Chenna Reddy, the then Governor of Tamilnadu on 04.04.1994. The library was dedicated to the memory of Achi. The major donor of this building was Tmt. Saraswathi Narayanan, the better half of the Founder President Thiru. L. Narayanan Chettiar. Sri Vidhya Ganapathi Temple was built and consecrated on 27.08.2015.

The Departments of Botany, Mathematics, Commerce , English, Economics and Chemistry have been upgraded as university recognized research centres to carry out M.Phil .

and Ph.D research programmes in the college. NAAC accredited the college with grade B+ in the year 2005. UGC accorded the Status of Autonomy of our institution in the year 2007. NAAC re-accredited the college with grade B (CGPA of 2.78) in the year 2016. UGC extended the Status of Autonomy to the institution for another period of five years from the academic year 2016-17.

DEPARTMENT OF COMPUTER APPLICATIONS – UG – CBCS - LOCF - SF

(For those who join in June 2022)

COURSE STRUCTURE

Part	Course Code	Title of the Course	Hours	Credits	Exam Hours	Marks		Total 100
						Int	Ext	
I Semester								
I	LUP1TA11	Tamil	6	3	3	25	75	100
II	LUP2EN11	English	6	3	3	25	75	100
III	LUBCCT11	Core -1: Programming in C	5	3	3	25	75	100
	LUBCCL11	Core -2:Programming in C - Practical	4	3	3	40	60	100
	LUBCCT12	Core -3:Digital Computer Fundamentals and Computer Organization	3	3	3	25	75	100
	LUBCGE11	GEC – 1:Statistics	4	4	3	25	75	100
IV	LUP4ES11	AEC – 1: Environmental Studies	2	2	3	25	75	100
II Semester								
I	LUP1TA21	Tamil	6	3	3	25	75	100
II	LUP2EN21	English	6	3	3	25	75	100
III	LUBCCT21	Core -4: Object Oriented Programming with C++	5	4	3	25	75	100
	LUBCCL21	Core -5: Data Structure and C++ - Practical	4	3	3	40	60	100
	LUBCCT22	Core -6: Data Structures	3	3	3	25	75	100
	LUBCGE21	GEC – 2: Discrete Mathematics	4	3	3	25	75	100
IV	LUP4VE21	AEC – 2: Value Education	1	1	2	25	75	100
IV	LUP4YA21	AEC – 3: YOGA	1	1	-	-	50	100
V	LUP5NC21	NCC	0	1	2	40	60	100
	LUP5NS21 LUP5PE21 LUP5LS21	NSS Physical Education Library Science	0	1	2	25	75	100
Ad.Cr. Co	LUBCSC21	SLC-1: Fundamentals of Computer	-	2	-	-	50	100
	LUBCSC22	PC Maintenance and Troubleshooting						

III Semester								
I	LUP1TA31	Tamil	6	3	3	25	75	100
II	LUP2EN31	English	6	3	3	25	75	100
III	LUBCCT31	Core -7: Programming in Java	4	4	3	25	75	100
	LUBCCL31	Core -8: Programming in Java –Practical	4	4	3	40	60	100
	LUBCCT32	Core-9: Relational Database Management System	4	4	3	25	75	100
	LUBCGE31	GEC – 3: Logical Reasoning	3	3	3	25	75	100
	LUBCDL31	DSE - 1: SQL & PL/SQL – Practical	3	3	3	40	60	100
	LUBCDL32	CorelDraw – Practical			3	40	60	100
Ad Cr. Co.	LUBCSC31	SLC-2: Internet and its Applications	-	2	-	-	50	100
	LUBCSC32	Internet, Multimedia and MS Office						
		MOOC	-	-				
IV Semester								
I	LUP1TA41	Tamil	6	3	3	25	75	100
II	LUP2EN41	English	6	3	3	25	75	100
III	LUBCCT41	Core -10: Programming in Python	4	4	3	25	75	100
	LUBCCL41	Core -11: Programming in Python – Practical	4	4	3	40	60	100
	LUBCGE41	GEC - 4: Data Analytics	3	3	3	25	75	100
	LUBCDS41	DSE - 2: Open Source Technology	3	3	3	25	75	100
	LUBCDS42	Cryptography and			3	25	75	100

		Cyber Security						
IV	LUBCSE41	SEC – 1: E-Commerce	2	2	2	25	50	100
	LUBCSE43	Human Resource Management			2	25	50	100
	LUBCSL42	SEC – 2: Office Automation - Practical	2	2	3	40	60	100
	LUBCSL44	Data Analytics with Excel – Practical			3	40	60	100
Ad. Cr. Co	LUBCSC41	SLC 3: Multimedia and its Applications	-	2	-	-	50	100
	LUBCSC42	Mobile Computing						
		MOOC	-	-				

V Semester								
III	LUBCCT51	Core -12: Operating System	5	4	3	25	75	100
	LUBCCT52	Core -13: Mobile Application Development	6	5	3	25	75	100
	LUBCCL51	Core -15: Mobile Application Development – Practical	6	4	3	40	60	100
	LUBCCT53	Core -14: Software Engineering	4	4	3	25	75	100
	LUBCDS51	DSE - 3: Full Stack Technology	4	4	3	25	75	100
	LUBCDS52	Ethics in Information Security			3	25	75	100
IV	LUBCSL51	SEC – 3: Full Stack Technology –Practical	3	2	3	40	60	100
	LUBCSL52	Open Source Technology – Practical			2	40	60	100
	LUBCNM51	GEC(NME) -5 :Fundamentals of Computer	2	2	2	25	50	100
Ad. Cr.	LUBCSC51	SLC 4: Biometrics	-	2	-	-	50	100
	LUBCSC52	Digital Image Processing						

Co		MOOC	-	-				
VI SEMESTER								
III	LUBCCT61	Core -16: Internet of Things	6	5	3	25	75	100
	LUBCPJ61	Core -17: Project & Viva-Voce	6	5	3	50	50	100
	LUBCCT62	Core -18: Computer Networks	6	4	3	25	75	100
	LUBCCL61	Core -19: .NET – Practical	4	4	3	40	60	100
	LUBCDS61	DSE – 4: Quantitative Aptitude	4	4	3	25	75	100
	LUBCDS62	Soft skill development						
IV	LUBCSL61	SEC – 4: Multimedia – Practical	3	2	3	40	60	100
	LUBCSL62	R Programming – Practical						
	LUBCNM61	GEC(NME) – 6: Internet and its applications	2	2	2	25	50	100

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DEPARTMENT OF TAMIL - UG – CBCS - LOCF

PART I- TAMIL

TITLE OF THE COURSE: பழந்தமிழ் இலக்கியமும் உரைநடையும்

Semester: I

Course Code: LUPITA11 **Contact Hours: 6hrs/w** **Credit: 3**

பாடத் திட்டத்தைக் கற்றுக் கொண்ட பின்பு மாணவர்கள் பெறும் பயன்கள்:

1. சங்க நூல்களைப் படிப்பதன் மூலம் மாணவர்கள் வாழ்வியல் செய்திகளை அறிந்து கொள்ள முடிகிறது.
2. மாணவர்கள் ஒழுக்கத்தினை அற இலக்கியங்கள் வாயிலாகக் கற்றுக் கொள்கின்றனர்
3. உரை நடைக் கட்டுரைகளை வாசிக்கும் போது மாணவர்கள் சமூகக் கருத்துக்களைத் தெரிந்து கொள்கின்றனர்.
4. அக, புற, இலக்கணங்கள் மாணவர்கள் வாழ்வில் செம்மையுற உதவுகின்றன.
5. தமிழ் இலக்கிய வரலாற்றினைப் படிப்பதனால் மாணவர்கள் அறிவுத்திறன் மேம்படுத்தப்பட்டு போட்டித் தேர்வுக்குத் தயார்படுத்தப்படுகிறார்கள்.

பாடத்திட்டத்திற்குத் தேவையான முன் அறிவு :

- ❖ சங்கத் தமிழரின் வாழ்வியல் முறைகளை அறிந்து கொள்ளல்
- ❖ நீதி இலக்கியங்களைக் கற்றல்
- ❖ மாணவர்கள் வாசிப்புத் திறனை வளர்த்துக் கொள்ளல்

கூறு I: செய்யுள்

1. பத்துப்பாட்டு
   நெடுநல்வாடை முழுவதும்
   எட்டுத் தொகை
2. நற்றிணை - 5 பாடல்கள் - 1, 115, 216, 305, 388
3. குறுந்தொகை - 5 பாடல்கள் 2, 4, 43, 67, 157
4. பதிற்றுப்பத்து - 4 பாடல்கள் 62 (வென்றிச் சிறப்பு)
5. புறநானூறு - 5 பாடல்கள் 74, 112, 204, 257, 312

6. அகநானூறு - 5 பாடல்கள் 2, 10, 35, 36, 54

கூறு II: அற இலக்கியம்

1. திருக்குறள் - விருந்தோம்பல், வினைத்திட்பம், ஒழுக்கமுடைமை
2. நான்மணிக்கடிகை - முதல் 10 பாடல்கள்
3. இனியவை நாற்பது - முதல் 10 பாடல்கள்
4. மூதுரை - முதல் 10 பாடல்கள்

கூறு III: உரைநடைக் கட்டுரைத் தொகுப்பு

1. அறநெறி அண்ணல் - இரா.ராஜராஜேஸ்வரி
2. கல்வி - திரு.வி.கலியாணசுந்தரனார்
3. சூழலியல் ஒரு அறிமுகம் - ஏ.சிங்கராயர்
4. பாதை பெரிது, பயணம் தொடங்கு - கு.வெ.பாலசுப்பிரமணியன்
5. தனித்திரு, விழித்திரு பசித்திரு - பெ.பழனிராஜன்
6. நாட்டார் சிந்து கதைப்பாடல்கள் ஓர் அறிமுகம் - பா.சுபாஷ்போஸ்
7. சிறகு முளைத்த பின்பும் - ஜே.ஆர். இலட்சுமி டார்வின்

கூறு IV: இலக்கணம்

1. அகத்திணைகள் - கைக்கிளை, நடுவண் ஐந்திணை, பெருந்திணை (முதல், கரு, உரிப்பொருள்)
2. புறப்பொருள் திணைகள் - வெட்சி, வஞ்சி, காஞ்சி, உழிஞை, தும்பை, வாகை, பாடாண்

கூறு V: இலக்கிய வரலாறு

1. சங்க இலக்கிய வளர்ச்சி
2. அற இலக்கிய வளர்ச்சி
3. உரைநடை வரலாறு

பரிந்துரைக்கப்பட்ட நூல்கள்:

1. சரசுவதி (செய்யுள் தொகுப்பு)
   சரசுவதி நாராயணன் கல்லூரி
   நியூ செஞ்சுரி புக் ஹவுஸ் (பி) லிட்.அம்பத்தூர்,
   சென்னை – 600050

2. பார்வை நூல்கள் :

- சங்க இலக்கியம் - பத்துப்பாட்டு - ச.வெ.சுப்பிரமணியன் உரை
- சங்க இலக்கியக் குறுந்தொகை - தமிழண்ணல் உரை
- சங்க இலக்கிய புறநானூறு - இரா.இளங்குமரன் உரை
- திருக்குறள் - இராமசாமி உரை

- தமிழ்க்காதல் - வா.சுப.மாணிக்கம்
- சங்க இலக்கியத்தில் கைக்கிளை - மு.மணிவேல்
- உரைநடையின் தோற்றமும் வளர்ச்சியும் - இ.சிவத்தம்பி
- நற்றிமிழ் இலக்கணம் - தொ.பரமசிவம்
- நன்னூல் - வெள்ளை வாரணனார் உரை

3.இணைய ஆதாரங்கள்:

சங்க இலக்கியம்

https://ta.vikaspedia.in/education/ba4baebbfbb4bcdba8bc2bb2bcdb95bb3bcd/%E0%AE%9A%E0%AE%99%E0%AF%8D%E0%AE%95%E0%AE%87%E0%AE%B2%E0%AE%95%E0%AF%8D%E0%AE%95%E0%AE%BF%E0%AE%AF%E0%AE%AE%E0%AF%8D-%E0%AE%93%E0%AE%B0%E0%AF%8D%E0%AE%85%E0%AE%B1%E0%AE%BF%E0%AE%AE%E0%AF%81%E0%AE%95%E0%AE%AE%E0%AF% 8D

அற இலக்கியம்

http://neelamegan.blogspot.com/2020/01/blog-post_5.html?m=1

உரைநடை

https://ta.m.wikipedia.org/wiki/%E0%AE%89%E0%AE%B0%E0%AF%88%E0%AE%A8%E0%AE%9F%E0%AF%88

பொருள் இலக்கணம்

அகம், புறம்

https://ninaivukurgatamil.blogspot.com/2021/09/porul-tamil-illakkanam.html?m=1

இலக்கிய வரலாறு

https://ta.m.wikipedia.org/wiki/%E0%AE%A4%E0%AE%AE%E0%AE%BF%E0%AE%B4%E0%AF%8D_%E0%AE%87%E0%AE%B2%E0%AE%95%E0%AF%8D%E0%AE%95%E0%AE%BF%E0%AE%AF%E0%AE%AE%E0%AF%8D

DEPARTMENT OF ENGLISH – UG – CBCS-LOCF
(For those who join in June 2022)

Title of the Course: ENGLISH LANGUAGE PROFICIENCY – I **Semester: I**

Course Code: LUP2EN11 **Contact hours: 6hrs/w** **Credits: 3**

Course Learning Outcomes:

On completion of the course, the students are able to

- recognize their own ability to improve their own competence in using the language
- comprehend spoken form
- understand the importance of vocabulary in academic life
- write simple sentences without committing errors of spelling and grammar
- comprehend texts using the techniques such as skimming and scanning

Pre-required Knowledge:

- Skills of reading comprehension and interpretation
- Functional vocabulary
- Functional grammar

Unit I: Prose

1.Dand Miller Sadaker and Myra Pollack Sadaker**:** Multiple Intelligence and Emotional Intelligence

2. Swami Vivekananda : India's Message to the World
3. Robert Lynd : The Pleasures of Ignorance
4. Leo Tolstoy : The Three Questions

Unit II: Poetry

1. Rabindranath Tagore : Upagupta
2. Chinua Achebe : Refugee Mother and Child
3. D.H Lawrence : Don'ts
4. Seamus Heaney : Digging

Unit III: Short Stories

1. Ruskin Bond : The Eyes are not Here
2. H.G. Wells : The Empire of Ants
3. A.A Milne : Getting Married

Unit IV: Grammar

Noun, Pronoun, Adjective, Verb, Adverb, Preposition, Conjunction, Interjection, Articles

Unit V: Conversation and Writing Skills

1. Every Day English Part – I
2. Paragraph Writing

Suggested Topics for Presentation:

- Importance of English in the wake of globalization
- Use of English in real life situations
- Objectives of reading short stories
- Presentation of memorable events in life
- Why should we read Prose text?
- Importance of grammar in the use of English
- Demonstration of situational conversation

Suggested Readings:

i)Text Book:

Wealth of English. Ed. Department of English, Saraswathi Narayanan College, Madurai. Harrows Publications, Madurai, 2022.

ii) Reference Books:

1. Radhakrisnapillai, G. *English Grammar and Composition*. Chennai: Emerald Publishers, 2002.
2. Murphy, Raymond. *Intermediate English Grammar*. New Delhi: Foundation Books, 2005.
3. Bose, M.N.K. Ed. *Better Communication in Writing*. Madras: New Century Book House (P) Ltd, 2004.

iii) Web Sources:

http://www.indiabix.com/verbal-ability/questionand-answers/

http://www.waylink-english.co.uk/?

https://www.englishclub.com/vocabulary/

https://biblonia.com/2019/12/28/reading-and-interpretation/

DEPARTMENT OF COMPUTER APPLICATIONS –UG – CBCS - LOCF - SF

Title of the Course: Programming in C		**Semester: I**
Course Code: LUBCCT11	**Contact Hours: 5hrs/w**	**Credits: 3**

Course Learning Outcomes:

On Completion of the course, the students are able to

- gain knowledge of C programming language.
- understand the programming skills using the fundamentals and basics of C language.
- develop programs using the basic elements like Control Statement, Arrays and String.
- analyze the concept of pointers and Files.
- analyze problems efficiently and develop comprehensive logic to solve it.

Pre - Required Knowledge:

- ✓ Basic Computer Programming Terminologies
- ✓ Basic commands of C Program
- ✓ Simple file management operations in C

Unit I: C fundamentals

Character set - Identifier and key words - data types – constants - variables –Declarations – Expressions - Statements - Operators - Arithmetic, Unary, Relational and logical operators - Library functions.

Unit II: Data input output functions & Flow of control

Simple C program - if, if-else, while, do-while, for loop, nested control structures-Switch, break, and continue, go to statements-comma operator.

Unit III: Functions & Storage classes

Definition- passing arguments – Recursions- Storage classes – Automatic, external, static, register variables.

Unit IV: Arrays, Structures & Unions

Defining and processing – passing arrays to function – multi dimension arrays - arrays and string, Structures – user defined data types – passing structures to functions – Self referential structures – Unions.

Unit V: Pointers & Files

Declarations - passing pointers to functions - operation in pointer - pointer and array – array of pointers - structures and Pointers – **Files**- creating a file, processing a file, opening a file and closing a file.

Suggested Topics for Group Discussion / Presentation

- ✓ Operators in C
- ✓ Control Structures in C
- ✓ Storage Classes in C
- ✓ Self referential Structures
- ✓ Files in C

Suggested Readings:

i) Text Book:

Ashok N.Kamthane, **Programming with ANSI and Turbo C**, Pearson Education, 2006.

ii) Reference Books:

1. E. Balaguruswamy, **Programming in ANSI C**, 5th Edition, Tata- McGraw-Hill Publishing Company Ltd, New Delhi, 2011.
2. **C – The Complete Reference**, Herbert schildt, McGraw-Hill, 4th Edition,2000
3. Kanetkar, Yashavant: "**Let Us C**", 17th Edition. BPB Publications, 2020
4. Gottfried, Byron S: "**Programming with C",** 4th edition, Tata McGraw-Hill, 2018.

iii) Web Sources:

1. www.tutorialspoint.com/cprogramming/c_useful_resources.htm
2. www.w3schools.in/c-tutorial/
3. www.w3spoint.com/c-tutorial
4. www.w3adda.com/c-tutorial

DEPARTMENT OF COMPUTER APPLICATIONS –UG – CBCS - LOCF - SF

Title of the Course: Programming in C – Practical	**Semester: I**
Course Code: LUBCCL11 Contact Hours: 4hrs/w	**Credits 3**

Course Learning Outcomes:

On Completion of the course, the students are able to

- develop logics which will help them to create programs, applications in C.
- write Code, compile and test C programs.
- illustrate flowchart and algorithm to the given problem.
- understand the basic structure of the C programming, declaration and usage of variables.
- implement programs with structures and arrays, perform file operation use the preprocessor.

Programs:

1. To find square root of nos. without using built in function
2. To reverse digits of a number
3. To reverse the given string
2. To check if a number is Prime or not.
3. To exchange the values of two variables using function
4. Solution of a Quadratic Equation.
5. Sum of Series (sine, cosine).
6. Ascending and descending order of numbers using Arrays (Use it to find Largest and Smallest Number).
7. Sorting of names in Alphabetical order.
8. Matrix operations (Addition, Subtraction, Multiplication using functions).
9. To find transpose of matrix
10. Finding factorials, generating Fibonacci Numbers using recursive functions.

11. String manipulations without using string functions (string length, string comparison, string copy, palindrome checking, counting words and lines in strings).
12. Prepare an address book using Structure.
13. To add two numbers using pointer
14. To illustrate the use of bitwise operators
15. To demonstrate the use of command line arguments
16. To read character from one text file; convert into upper case and write in other file.
17. Write a mark sheet program using file
18. Write a payroll program using file

Reference Book:

E. Balaguruswamy, **Programming in ANSI C**, 5th Edition, Tata- McGraw-Hill Publishing Company Ltd, New Delhi, 2011.

DEPARTMENT OF COMPUTER APPLICATIONS –UG – CBCS - LOCF - SF

Title of the Course: Digital Fundamentals and Computer Organization **Semester: I**

Course Code: LUBCCT12 **Contact Hours: 3hrs/w** **Credits: 3**

Course Learning Outcomes:

On Completion of the course, the students are able to

- gain knowledge below different types of number system and their conversions.
- simplify Boolean equations.
- design various logic gates.
- analyze, design and implement combinational logic circuits.
- design various flip flops and determining output's.

Pre – Required Knowledge:

- ✓ Basics of Number System
- ✓ Basics of Computer Memory
- ✓ Basics of Computer Input/Output Devices

UNIT I: Digital Logic

The Basic Gates **-**NOT, OR, AND Universal Logic Gates – NOR, NAND. **Number system & codes:** Binary Number System, Binary To Decimal Conversion- Decimal To Binary Conversion – Octal Numbers-Hexadecimal Numbers- Binary Addition-Binary Subtraction – 2's Complement Representation- 2's Complement Arithmetic.

UNIT II: Flipflop

Flipflops: RS Flipflops - Edge Triggered RS Flip flop - Edge Triggered D Flip flop - Edge Triggered JK Flip Flop. **Arithmetic :** Addition and Subtraction of Signed Numbers - Design of Fast Adders Multiplication of Unsigned Number-Multiplication of Signed Numbers-Fast Multiplication.

UNIT III: Basic Structure of Computers

Computer Types – Functional Units- Basic Operational Concepts – Number Representations And Arithmetic Operations-Character Representations-Performance. **Instruction Set Architecture:** Memory Location And Addresses-Memory Operations-Instructions and Instruction Sequencing-Addressing Modes-Assembly Languages-Stacks-Subroutines-Additional Instructions.

UNIT IV: Basic Input/Output

Accessing I/O Devices-Interrupts-Software-The Assembly Process-Loading and Executing Object Programs-The Linker-Libraries-The Compiler-The Debugger. **Basic Processing Unit:** Some Fundamental Concepts**-**Instruction Execution**-** Hardware Components**-**Instruction Fetch and Execution Steps-Control Signals-Hardwired Control-CISC-Style Processors.

UNIT V: Input/output Organization

Bus Structure - Bus Operation – Arbitration - Interface Circuits - Interconnection Standards. **The Memory System:** Basic Concepts **–**Semiconductor – RAM memories - Read-only Memories – Direct Memory Access Memory Hierarchy - Cache Memories - Virtual Memory.

Suggested Topics for Group Discussion / Presentation

- ✓ Number System Conversion
- ✓ Applications of Flipflops
- ✓ Addressing Modes
- ✓ Hardware Components
- ✓ Memory Hierarchy

Suggested Readings:

i) Text Book:

1. Donald P Leach, Albert Paul Malvino, Gautam Saha **"Digital Principles and Applications",** Tata McGrawHill Publishing Company Limited,New Delhi, 6th Edition.
2. V.Carl Hamacher, Zvonko G.Vranesic, Safwat G. Zaky, **"Computer Organization and Embedded Systems"** - McgrawHill International, 6th edition.

ii) Reference Books:

1. William Stallings, **"Computer Organization & Architecture",** 2003, Pearson Publication, Prentice Hall of India private Limited, New Delhi, 6th Edition.
2. Thomas C.Bartee, **"Computer Architecture and Logic Design",** 1991, Mc Graw Hill Edition, Hightown.

iii) Web Sources:

1. www.tutorialspoint.com/digital_circuits/index.htm
2. www.javatpoint.com/digital-electronics
3. www.tutorialspoint.com/computer_logical_organization/index.htm
4. www.javatpoint.com/computer-organiztion-and-architecture-tutorial

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DEPARTMENT OF COMPUTER APPLICATIONS –UG – CBCS - LOCF - SF

Title of the Course: Statistics **Semester: I**

Course Code: LUBCGE11 **Contact Hours: 4hrs/w** **Credits: 4**

Course Learning Outcomes:

On Completion of the course, the students are able to

- understand the different statistical measures of data.
- analyze Statistical data using measures of central tendency, dispersion and location.
- analyze Statistical data graphically using frequency distributions of cumulative frequency distributions.
- apply problem – solving techniques to solving real-world events.
- analyze Statistical data using correlation and regression.

Pre – Required Knowledge:

- ✓ Basic Concepts of Mean, Median and Mode
- ✓ Fundamental properties of Correlation and Regression
- ✓ Basis knowledge of Continuous and Discrete types

UNIT I : Central Tendency

Measure of Central Tendency: Mean - Combined Mean - Median – Mode – Geometric Mean – Harmonic Mean.

UNIT II: Measures of Dispersion

Measures of Dispersion: Range - Quartile Deviation - Standard Deviation.

UNIT III: Index Numbers

Index Numbers: Meaning, Uses, Price Index Numbers, Quantity Index Numbers - Methods of Construction Index Numbers – Laspeyer's, Paasche's and Fisher's Ideal Index Numbers - Cost of Living Index Number, Uses, Problems in Cost of Living Index Numbers.

UNIT IV: Time Series Analysis

Time Series Analysis: Meaning, Uses, Components of Time Series.

Secular Trends: Method of Semi Averages, Method of Moving Averages – Problems.

UNIT V: Correlation and Regression

Correlation – Rank Correlation – Regression.

Suggested Topics for Group Discussion / Presentation

- ✓ Combined mean
- ✓ Standard Deviation
- ✓ Rank Correlation
- ✓ Price and Quantity Index Numbers
- ✓ Methods of Moving Averages

Suggested Readings:

i) Text Book:

Statistics by Dr.S. Arumugam and Mr.A. Thanga pandi Issac, New Gamma Publishing house, 2015.

ii) Reference Books:

1. **Statistical methods**, Dr. S. P. Gupta, Sultan Chand and Sons, 2008.
2. **Statistical methods,** Dr.Manoharan palani paramount publications, 2004.

iii) Web Sources:

1. http://mkuniversity.ac.in/new/syllabus_aff_col/UG_PROGRAMMES_SAC/Part_III_Subjects/B.Sc_Mathematics.pdf
2. https://una.kenes.com/download/statistical-methods-by-sp-gupta-pdf-download_pdf
3. https://www.ebooknetworking.net/ebooks/statistical-methods-s-p-gupta-2008.html

PART IV – ENVIRONMENTAL STUDIES – UG – CBCS - LOCF

Title of the Paper: Environmental Studies		Semester: I
Course Code: LUP4ES11	Contact hours: 2hrs/w	Credit: 2

Learning Objectives:

- ❖ To study the basic concepts of environmental science.
- ❖ To study plant succession, methods of vegetation analysis, structure and functions of ecosystems.
- ❖ To understand the causes and consequences of various pollutions and gives an idea to the control measures.

- ❖ To understand the importance of biodiversity and conservation

Unit I:

Environment - Definition - Components of environment and types. Ecosystem and its types.

Unit II:

Global warming - Causes and consequences of global warming - global warming in Indian Context - Earth summit. Green house of uses and its effects, ozone depletion.

Unit III:

Deforestation: causes and impacts - Tree saving movement in India - Chipko movement - Apico movement - Sunderlal Bohuguna – Methapatkar, Afforestation.

Unit IV:

Radioactive pollution - Hiroshima & Nagasaki, 1945 - Chernobyl episode of 1986. Effects and control measures of Air pollution - Bhopal gas tragedy 1984. Acid rain and its impacts.

Unit V:

Water and Noise Pollution-causes, effects & control measures. Water scarcity and solutions to overcome. Road safety – Rules, Traffic Signals, Conduct of road safety awareness programme. Role of academic institutions and academicians and students in village adoption.

Learning Outcomes:

On completion of this course, the students will be able to

- ➢ acquire knowledge on ecological factors and their interactions with ecosystem; types of soil erosion and methods of conservation.
- ➢ understand the series of events in the process of plant succession in wet and dry lands;
- ➢ recognize their significance of value of biodiversity and its conservation.

Text Book:

1. Thangamani.I & Shymala - Thangamani, Environmental studies - Pranor Syndicate, Sivakasi, 2003.

Reference Books:

1. Subramanyam, N.S. and Sambamuthy, A.V.S.S. Ecology, Narosa Publishing House, New Delhi, 2000.
2. Krishnamoorthy, K.V. An advanced text book on Biodiversity. Oxford and IBH Publishing company Pvt, Ltd., New Delhi, 2004.
3. Rana, S.V.S. Essentials of Ecology and Environmental Science, Prentice Hall of India Pvt., Ltd., New Delhi, 2004.

DEPARTMENT OF TAMIL – UG – CBCS

PART I- TAMIL

TITLE OF THE COURSE: காப்பிய இலக்கியமும் நாடகமும் Semester : II

Course Code : LUPITA21 Contact Hours : 6hrs/w Credit: 3

பாடத் திட்டத்தைக் கற்றுக் கொண்ட பின்பு மாணவர்கள் பெறும் பயன்கள்:

1. காப்பிய இலக்கியம் படிக்கும்போது மாணவர்கள் தமிழப் பண்பாட்டைப் பற்றியும்,தமிழரின் வாழ்க்கை முறை பற்றியும் தெரிந்து கொள்கின்றனர்.
2. சமயம் பற்றிப் படிக்கும்போது ஆன்மீக ஈடுபாடும் ஆன்மீக அறிவும் வளர்கிறது.
3. நாடக நூல்களைப் படிப்பதனால் மாணவர்கள் பிரச்சனைகளை எதிர்கொள்ளும் திறனைப் பெறுகின்றனர்
4. மாணவர்கள் சொற்களை உருவாக்கி சிறந்த வாக்கியங்களைப் படைக்க இலக்கணம் துணை நிற்கின்றது.
5. இலக்கிய வரலாறு படிப்பதனால் மாணவர்கள் பாடத் திட்டத்தின் முழுமையான செய்திகளை அறிந்து கொள்ள உதவுகிறது.

பாடத்திட்டத்திற்குத் தேவையான முன் அறிவு:

- புராணம் மற்றும் காப்பியங்களின் தோற்றமும் வளர்ச்சியும் பற்றி அறிதல்

- நாடக இயலைப் பற்றி அறிந்து கொள்ளல்
- அடிப்படைத் தமிழ் இலக்கணத்தை அறிதல்

கூறு I: காப்பியம்

1. சிலப்பதிகாரம் - வழக்குரை காதை
2. மணிமேகலை - ஆபுத்திரன் திறன் அறிவித்த காதை
3. சீவகசிந்தாமணி - சுரமஞ்சரியார் இலம்பகம்

கூறு II: சமயக்காப்பியம்

1. பெரிய புராணம் - மெய்ப்பொருள் நாயனார்
2. கம்ப ராமாயணம் - வாலி வதைப் படலம்
3. இயேசு காவியம் - சீடர்களை அனுப்புகிறார், உவமை வழிச் செய்தி (கவியரசு கண்ணதாசன்)
4. சீறாப்புராணம் - நபி அவதாரப் படலம் (உமறுப்புலவர்)

கூறு III: நாடகம்

1. அழுக்குப் படாத அழகு - மா.கமலவேலன்

கூறு ஐஏ: இலக்கணம்

1. அணி - 10 வகைகள்

உவமை அணி, உருவக அணி, உயர்வுநவிற்சி அணி, வேற்றுமை அணி, தற்குறிப்பேற்ற அணி,வஞ்சப் புகழ்ச்சி அணி, தீவக அணி, பாவிக அணி, இல்பொருள் உவமை அணி, எடுத்துக்காட்டு உவமை அணி,

2. பாவகைகள் - வெண்பா, ஆசிரியப்பா.

கூறு V: இலக்கிய வரலாறு

1. காப்பிய இலக்கிய வளர்ச்சி
2. சமயக்காப்பிய வளர்ச்சி
3. நாடக இலக்கிய வளர்ச்சி

1. பரிந்துரைக்கப்பட்ட நூல்கள்:

சரசுவதி (செய்யுள் தொகுப்பு)
சரசுவதி நாராயணன் கல்லூரி
நியூ செஞ்சுரி புக் ஹவுஸ் (பி) லிட்.அம்பத்தூர்,
சென்னை - 600050
அழக்குப் படாத அழகு (செய்யுள் நாடகம்)

2. பார்வை நூல்கள் :

- சிலப்பதிகாரம் - அடியார்க்கு நல்லார் உரை

- சீவகசிந்தாமணி - நா.மாணிக்காவாசகன் உரை
- நற்றமிழ் - தொ.பரமசிவம்
- இரட்டை காப்பியங்கள் - வா.சுப.மாணிக்கம்
- பெரியபுராணம் - பி.ரா.நடராசன் உரை
- மணிமேகலை - புலியூர்க் கேசிகன் உரை
- நன்னூல் - வெள்ளை வாரணனார் உரை
- தமிழ் இலக்கிய வரலாறு - மு.வரதராசனார்
- தமிழ்இலக்கிய வரலாறு - சிற்பி, நீலபத்மநாபன்

3. இணைய ஆதாரங்கள்:

காப்பியம்

https://www.tamilvu.org/ta/courses-degree-a011-a0114-html-A0114111-5742

சமயக்காப்பியம்

http://www.tamilvu.org/courses/degree/a041/a0411/html/a04114l4.htm

அழுக்குப்படாத அழகு (செய்யுள் நாடகம்)

https://www.noolulagam.com/tamil-book/1496/alukku-padaatha-alagu-naadagam-book-type-iyalisai-nadakam-by-maa-kamalavelan/

இலக்கிய வரலாறு (நாடக வளர்ச்சி)

https://podhutamizh.blogspot.com/2017/09/normal-0-false-false-false-en-in-x-none.html?m=1

DEPARTMENT OF ENGLISH - UG – CBCS-LOCF

Title of the Course: English Language Proficiency II		**Semester: II**
Course Code: LUP2EN21	**Cont act Hours:6hrs/w**	**Credits: 3**

Course Learning Outcomes:

On completion to the course the students are able to

- read and understand texts of different genres
- summarise a piece of prose and poetry
- achieve conversational skills through the study of plays
- cultivate creative skill in writing
- use language for speaking and writing with confidence in an intelligible and

acceptable manner.

Pre-required Knowledge:

- ✓ Comprehend reading text and respond to tasks.
- ✓ Formation of new words.
- ✓ Functional Grammar

Unit: I-Prose

Issac Bashevi s Singer	-	Menasch's Dream
Mohandas K. Gandhi	-	What is Swaraj
Jesse Owens	-	My Greatest Olympic Prize
C.P. Snow	-	Hardy and Ramanujan

Unit: II-Poetry

Rudyard Kipling	-	If
DilipChitre	-	Father Returning Home
Robert Frost	-	Road not Taken
P.B. Shelley	-	Ozymandias

Unit: III-One Act Play and Excerpt from Play

Anton Chekhov	-	A Marriage Proposal
Eugene O'Neill	-	Before Break Fast
Shakespeare	-	The Trial scene from, The Merchant of Venice

Unit: IV-Grammar

Word Formation

Tenses

Question tags

Unit: V -Conversational and Writing Skills

Every day English Part - II

Report Writing

Letter Writing (Formal)

Suggested Topics for Presentation:

- ✓ Situational uses of present perfect tense
- ✓ Demonstrate conversations in official situations

- ✓ English for survival
- ✓ Importance of English speaking skill in everyday life
- ✓ Advantages of studying poetry

Suggested Readings:

i)Text Book:

1.Wealth of English..Ed. Department of English, Saraswathi Narayanan College. Harrows Publications, Madurai, 2022.

ii)Reference Books:

1. Kirshnamurthy C.N. &Ashwini Raman. *Advanced Grammar and Composition*. New Century Book House (P) Ltd, 2010.
2. BaskaranV.H.. *English Composition Made Easy*. Shakespeare Publication, 2013.
3. Raymond, Murphy. *Intermediate English Grammar*. New Delhi: Foundation Books, 2005

iii) Web Sources:

1.https://www.englishgrammar.org/word-formation-exercise/

2.Https://byjus.com/govt-exam/tenses-exercise-question-answers/

3.https://www.englishgrammar.org/question-tag-exercise-4/

4.https://www.learncbse.in/report-writing-class-12/

5.https://digiandme.com/formal-letter-writing-topics/

DEPARTMENT OF COMPUTER APPLICATIONS –UG – CBCS - LOCF - SF

Title of the Course: Object Oriented Programming with C++ Semester: II
Course Code: **LUBCCT21 Contact Hours: 5hrs/w Credits: 4**

Course Learning Outcomes:

On Completion of the course, the students are able to

- ➢ understand C++ improves C with Object-oriented features.

- know the syntax and semantics of the C++ programming language.
- write inline functions for efficiency & performance.
- implement the copy constructors and class member functions.
- acquire knowledge in C++ specifically Stream I/O, templates and operator overloading.

Pre – Required Knowledge:

- ✓ History of C programming language
- ✓ Basics of file management operations
- ✓ Standard Template library basics

Unit I: Principles of OOP

Procedure oriented programming - OOP paradigm - Basic concepts of OOP - Benefits of OOP - Object oriented language - Applications of OOP. **Beginningwith C++:** Structure of C++ program.**Tokens, Expressions and Control Structures:** Token - Keywords- Identifiers and constants – Basic Data Types- Variables - Operators – Manipulators - Expressions - Control Structures.

Unit – II: Functions in C++

Main function - Function prototype - Inline functions – Default argument - Function overloading. **Classes and Objects:** Specifying a class – Defining Member functions - Memory allocation for objects - Static data members – Static member functions – Object as function arguments – Friend function.

Unit – III: Constructors and Destructors

Constructors-Parameterized constructor-Constructor with default arguments-Copy constructor- Destructor. **Operator overloading:** Defining Operator overloading - Overloading Unary operators - Overloading Binary operators - Rules for operator overloading.

Unit – IV: Inheritance

Single inheritance - Multilevel inheritance - Multiple inheritance - Hierarchical inheritance – Hybrid Inheritance.

Polymorphism, Virtual function: Introduction - Pure virtual function.

Unit – V: Managing console I/O operations

C++ stream classes - Unformatted I/O Operations - Formatted console I/O Operations. **Working with files:** Classes for file stream operations - Opening and closing a file – EOF - File modes - Sequential I/O Operations.

Suggested Topics for Group Discussion / Presentation

- ✓ Applications of OOP concepts
- ✓ Function Overloading
- ✓ Operator Overloading
- ✓ Polymorphism
- ✓ Sequential I/O Operations

Suggested Readings:

i) Text Book:

E.Balagurusamy, **Object Oriented Programming with C++,** Tata McGraw-Hill publishing company Ltd, Seventh Edition, 2017

ii) Reference Book:

1. Ashok Kamthane, **Programming in C++,** Pearson Education,2nd Edition, 2013.
2. Herbert Schildt, **"C++ The Complete Reference"**, Tata McGraw-Hill Publishing Company Ltd.
2. D.Ravichandran, **"Programming with C++"**, Tata McGraw – Hill Publishing Company Limited.

iii) Web Sources:

1. www.w3schools.com/cpp/cpp-intro.asp
2. https://www.tutorialspoint.com/cplusplus/cpp_object_oriented.htm
3. https://www.geeksforgeeks.org/object-oriented-programming-in-cpp/
4. https://www.javatpoint.com/cpp-oops-concepts

DEPARTMENT OF COMPUTER APPLICATIONS –UG – CBCS - LOCF - SF

(For those who join in June 2022)

Title of the Course: Data Structure and C++ - Practical

Course Code: LUBCCL21 **Semester: II**

Contact Hours: 4hrs/w **Credits: 3**

Course Learning Outcomes:

On Completion of the course, the students are able to

- identify the appropriate data structures and algorithms for solving real world problems.
- implement various kinds of searching and sorting techniques.
- implement data structures such as stacks, queue and list to solve various computing problems.
- learn inheritance & its type for code reuse..
- acquire knowledge in data structures including linked lists and searching & sorting techniques.

Programs:

1. Program to illustrate linked list
2. Program to illustrate stack
3. Program to illustrate queue
4. Program to implement binary search
5. Program to implement the merge sort
6. Prepare a student mark list using scope resolution operator
7. Program for Friend function
8. Program for operator overloading
9. Program for constructor and destructor
10. Program for inheritance.

Reference Book:

Data Structures and Algorithms in C**++,** Adam Drozdek, 4th edition, Course Technology, 2012.

DEPARTMENT OF COMPUTER APPLICATIONS –UG – CBCS - LOCF - SF

Title of the Course: Data Structures		**Semester: II**
Course Code: LUBCCT22	**Contact Hours: 3hrs/w**	**Credits: 3**

Course Learning Outcomes:

On Completion of the course, the students are able to

- understand the concepts of Abstract data type, data structure, performance measurement, time and space complexities of algorithms.
- implement linear data structures such as stacks, queues and lists and their applications.
- implement different non-linear data structure such as trees and its application.
- understand about writing algorithms and step by step approach in solving problems with the help of fundamental data structures.
- summarize searching and sorting techniques.

Pre – Required Knowledge:

- ✓ Programming Language Concepts (C &C++)
- ✓ Basic Concepts of Loop, Array, Stack and Recursion
- ✓ Basics of Algorithm Design

UNIT – I: Introduction to Data Structures

Introduction –Data and information–overview of data structure –Types of data structures–primitive, non-primitive data structures and operations. **Arrays:** Introduction-characteristics of arrays- Static and Dynamic implementation of arrays **-** one-dimensional arrays-operation with arrays-Two-dimensional arrays-Three- ormulti dimensional arrays-Strings-Array of structures.

UNIT – II: Stacks and Queues

Introduction-Stack related terms-Stack implementation operation on stack-pointers and stack-Representation of arithmetic expressions infix, prefix and postfix notations - Conversion of expression from infix to postfix .**Queues:**

Introduction-various positions of queues-queue implementation operations on queues - types of queues – circular queue.

UNIT – III: Static List and Linked List

Introduction –Implementation of list-Traversal of list-searching and retrieving an element-predecessor and successor-Insertion, Deletion-Sorting-Merging list-Linked List-important terms-memory allocation and de-allocation-operations on linked list-singly linked list-linked list with header and without header-insertion in the linked list-circular linked list-Doubly linked list

UNIT – IV: Sorting and Searching

Introduction-sorting-insertion sort-selection sort-bubble sort-quick sort- Heap sort - Radix sort. **Searching:** Introduction – Linear search- Binary search.

UNIT – V: Trees

Introduction-basic terms-binary trees-complete binary tree-Binary tree representation-operation on binary tree-traversal of a binary tree-conversion of expression into postfix. **Graph:** Introduction-Graph-terminologies of graph-graph representation-traversal in graph-spanning trees.

Suggested Topics for Group Discussion / Presentation

- ✓ Types of Data Structure
- ✓ Types of Queues
- ✓ Types of Linked List
- ✓ Searching Techniques
- ✓ Binary Tree

Suggested Readings:

i) Text book:

Ashok N.Kamthane, **Introduction to Data Structure in C,** Pearson Education,NewDelhi,2004.

ii) Reference Books:

1. Jean Paul Trembly& Paul G.Sorenson, **Introduction to Data structures with applications**, Second Edition, TMH. New Delhi, 1984.

2. Langsam, Augenstein and Tenenbaum, **Data structures using C and C++,** PHI, New Delhi,2002.
3. **Fundamentals of data structures in C++,** Elis Horrowitz, Sahnia, University Press publications, 2nd edition, 2008.
4. **Data structures with C**, Lipschutz, Tata Mc-Graw Hill, Schaum's Outline Series, 2017

iii) Web Sources:

1. www.tutorialspoint.com/data_structures_algortithms/index.htm
2. www.javatpoint.com/data-structure-tutorial
3. https://www.programiz.com/dsa
4. https://www.geeksforgeeks.org/data-structures/

DEPARTMENT OF COMPUTER APPLICATIONS –UG – CBCS - LOCF - SF

Title of the Course: Discrete Mathematics		**Semester: II**
Course Code: LUBCGE21	**Contact Hours: 4hrs/w**	**Credits: 3**

Course Learning Outcomes:

On Completion of the course, the students are able to

- understand the basic Principles of Sets and Operation in Sets.
- apply Counting Principles to determine Probabilities.
- write an argument using logical notation and determine if the argument is or is not valid.
- demonstrate different traversal methods for graphs.
- write model problems in Computer Science using graphs.

Pre – Required Knowledge:

- ✓ Basics of set operations.
- ✓ Basics of Matrix operations
- ✓ Basics of Graph

Unit –I: Set Theory

Introduction –Sets Notation and Description of Sets – Subsets – Venn – Euler diagram – Operation on Sets – Properties of Set Operations – Verification of the Basic laws of Algebra by Venn diagrams – The Principle of Duality – Problems only.

Unit – II: Matrix Algebra

Introduction – Matrix Operations – Inverse of a Square Matrix - Elementary Operations and Rank of a matrix – Simultaneous Equations.

Unit – III: Logic

Introduction – TF-Statements – Connectives – Truth table of a formula – Tautology – Tautological implications and Equivalence of formulae.

Unit – IV: Graphs and Subgraphs

Introduction – Definition and examples – Degrees – Subgraphs – Isomorphism.

Unit – V: Connectedness

Walks, Trails and Paths – Connectedness and Components, Blocks – Connectivity.

Suggested Topics for Group Discussion / Presentation:

- ✓ Properties of Set Operations
- ✓ Inverse of a Square Matrix
- ✓ Tautology concepts
- ✓ Subgraphs
- ✓ Walks, Trails and Paths

Suggested Readings:

i) Text Books:

1. Discrete Mathematics by Dr. M.K. Venkataraman, Dr. N. Sridharan, Dr.N. Chandrasekaran, The National Publishing Company, 2012(for unit I,II, III)
2. Invitation to Graph Theory by S. Arumugam S.Ramachandran, Scitech Publications – 2007 (for units IV ,V).

ii) Reference Books:

1. Discrete Mathematical Structures with applications to computer science, J.P.Tremblay and R.Manohar, Tata McGraw Hill, 1997.
2. Graph Theory with Application to engineering and computer science, Narsingh Deo, Prentice Hall India Learning Private Ltd, 2002.

iii) Web Sources:

1. https://dokumen.tips/documents/discrete-mathematics-venkataramanpdf.html
2. https://pdfgoal.com/downloads/invitation_to_graph_theory_by_s_arumugam_pdf
3. https://pdfcoffee.com/discrete-mathematical-structures-with-applications-to-computer-science-by-jp-tremblay-r-manoharpdf-pdf-free.html

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DEPARTMENT OF COMPUTER APPLICATIONS –UG – CBCS - LOCF - SF

Title of the Course: Computer Concepts and Applications Semester: II

Course Code: LUBCSC21 Contact Hours: - 0 Credits: 2

Course Learning Outcomes:

On Completion of the course, the students are able to

- understand the basics of computer like History, Generation, Characteristics and Applications.
- know the basic structure of Computer system.
- realize peripherals of Computer System.
- know about the number system.
- know about the computer memory

Pre – Required Knowledge:

- ✓ Basics of Computer
- ✓ Basics of Hardware and Software
- ✓ Basic Number System

Unit-I: Basics of Computer

Introduction – Digital and Analog computers – Characteristics of Computers – History of Computer – Generation of computers – Classification of Computers – The Computer System – Applications of Computers.

Unit-II: The Computer System Hardware

Introduction – Central Processing Unit – Memory Unit Microprocessor - Interconnecting the Units of a Computer – Performance of a Computer – Inside a Computer cabinet.

Unit-III: Computer Memory

Introduction – Memory Representation – Hierarchy – CPU Registers – cache memory - Primary memory – Secondary memory – Magnetic tape – Magnetic Disk – Optical Disk – Magnetic – Optical disk.

Unit-IV: Input and Output devices

Introduction – Input-Output Unit – Input devices – Human Data Entry Devices – Source Data Entry Devices – Output Devices – Hard copy devices – Soft copy devices.

Unit-V: Data Representation

Introduction – Number System – Conversion – Binary Coding Schemes – Logic gates.

Suggested Topics for Group Discussion / Presentation:

- ✓ Applications of Computer
- ✓ Inside a Computer Cabinet
- ✓ Secondary Memory
- ✓ Output Devices
- ✓ Logic Gates

Suggested Readings:

i) Text Book:

Anita Goel, **Computer Fundamentals**, Pearson Education, New Delhi, 2010.

ii) Reference Books:

1. G. Manjunath, **Computer Basics**, Vasan Publications, Chennai, 2010.

2. Sanjay Saxena, **A First Course in Computers**, Vikas Publishing House Pvt Ltd., New Delhi, 2003.

iii) Web Sources:

1. https://www.javatpoint.com/computer-fundamentals-tutorial
2. 2.https://www.tutorialsmate.com/2020/04/computer-fundamentals-tutorial.html?m=1
3. https://www.tutorialspoint.com/computer_fundamentals /index.htm

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DEPARTMENT OF COMPUTER APPLICATIONS –UG – CBCS - LOCF - SF

Title of the Course: PC Maintenance and Troubleshooting Semester: II
Course Code : LUBCSC22 Contact Hours: 0 Credits : 2

Course Learning Outcomes:

On completion of the course, the students are able to

- gain knowledge and competency to diagnose the faults
- identify the Peripheral Devices
- know installation and service
- understand troubleshoot for systematic repair and maintenance of computers and computer peripherals.
- understand the Test Equipment.

Pre – Required Knowledge:

- ✓ Basics of System configuration
- ✓ Assembling Computer parts
- ✓ Basics of Troubleshooting

Unit- I: Computer Systems and Peripherals

The Microcomputer System: Introduction – System configuration – Inside the IBM PC System Unit – Tech tips and Troubleshooting.

Unit – II: Memory Peripherals

Introduction – Cleaning and Preventive Maintenance – The Winchester Disk Subsystem - Tech tips and Troubleshooting. **Peripheral Devices:** Introduction – Keyboards – Video Displays – Printers - Tech tips and Troubleshooting.

Unit – III: Installation and Servicing

Introduction – Configurations – Switch settings – Cables and Connectors – Operation – Power-On-Self-Test (POST) – Preventive Maintenance – Customer relations - Tech tips and Troubleshooting.

Unit – IV: Diagnostics and Troubleshooting

Introduction – Starting the advanced Diagnostics – The Home menu – Diagnostic Test Submenu – Error codes – The Dead Machine – Getting in deep - Tech tips and Troubleshooting.

Unit – V: Test Equipment

Introduction – Logic Probes and Pulsers – Meters – Oscilloscopes – Logic Analyzer – PROM burners – Power line monitors – The Universal Microcomputer Tester Project – Automatic Test Equipment - Tech tips and Troubleshooting.

Suggested Topics for Group Discussion / Presentation:

- ✓ Peripheral Devices
- ✓ Power-On-Self-Test
- ✓ Diagnostic Test Submenu
- ✓ PROM Burners

Suggested Readings:

i) Text Book:

Stuart M. Asser, Vincent J. Stigliano, Richard F. Bahrenburg, **Microcomputer Servicing, Practical Systems and Troubleshooting,** All India Traveler Book Seller, Publishers and Distributors, New Delhi, 1993.

ii) Reference Books:

1. GovindaRajalu, **IBM PC and Clones: Hardware, Troubleshooting and Maintenance,** 2nd Edition, Tata McGraw Hill Publishing Company Ltd., New Delhi, 2008.
2. Mark Minersi, **The Complete PC Upgrade and Maintenance,** 16th Edition, Wiley, Dreamtech India Pvt Ltd., New Delhi, 2004.

iii) Web Sources:

1. https://nji.gov.ng/images/Workshop_Papers/2017/IT_Workshop/s3.pdf
2. https://edu.gcfglobal.org/en/computerbasics/basic-troubleshooting-techniques/1/
3. http://h10032.www1.hp.com/ctg/Manual/c00757358.pdf

PART IV – VALUE EDUCATION – UG – CBCS - LOCF

Title of the Course: Value Education **Semester: II**

Subject Code: LUP4VE21 **Contact Hours: 2hrs/w** **Credit:**

Unit I: Education Theories

1. Gandhi
2. Tagore
3. Aristotle

Unit II: Values of Religion and Society

1. Religious Values and ideologies
2. Religious Values and Social functions
3. Impact of Religious values

Unit III: Professional Values and role of Social institutions in value formation

1. Meaning of Professional value
2. Basic concept of Values
3. Value formation through social institutions

Unit IV: Constitutional values and Fundamental Rights

1. Objectives of Constitution value
2. Significance of fundamental rights
3. Characteristics of Fundamental rights

Unit V: Directive Principles of State Policy and Fundamental Duties

1. Features and Directive Principles of State Policy
2. Classification of Directive Principles
3. Importance of Fundamental duties

Learning Outcomes:

On completion of this course, Students will be able to

- know the educational theories of Gandhi, Tagore and Nehru.
- interpret the religious values
- understand the Professional values
- discuss the value of fundamental rights.
- explain the directions of constitution to state government.

Suggested Topics:

1. Religious Values
2. Gandaian Principles
3. Professional Values
4. Constitutional Values
5. Directive Principles of State Policy

Text Books:

1. Subramanyan.K, Value Education, Ram Publication, Madurai (selected chapters) 1990.
2. Kapur. A,Cand Misra K.K, Select Constitutions, S. Chand and Co., New Delhi,1975.

Reference Books:

1. K.G.S. Ramanan, Value Education, New Century Book House, Chennai, 2016.

2. R.C.Agarwal, Constitutional Development and National Movement of India.
3. M. Laxmikanth, Indian Polity, Tata Mc Graw Hill, New Delhi, 2011.

Web Sources:

1. https://www.iberdrola.com
2. https://www.edb.gov.hk
3. ttps://www.index.com

DEPARTMENT OF NSS – PART - V

Title of Course: NSS – Ideals and Approaches **Semester: II**
Course Code: LUP5NS21 **Contact Hours: 1hrs/w** **Credits: 1**

Course Learning Outcomes:

On completion of the course, the students are able to

- understand the community in which they live.
- be confident of executing responsibilities for the betterment of the community.
- acquire leadership qualities and democratic attitude.
- develop capacity to meet emergencies and disasters.
- understand historical, geographical, and social significance of adopted village.

Pre-required Knowledge

- ✓ History and Growth of NSS
- ✓ Objective and role of NSS volunteers
- ✓ Social issues
- ✓ Disaster management

Unit I: Basic concepts of NSS

1. Aims and Objectives of NSS
2. History and Philosophy of NSS
3. Motto, Symbol, NSS song and Badge of NSS
4. Gandhian Principles.

Unit II: Administrative Structure of NSS and Volunteerism

1. Organizational structure of NSS at National Level, State Level
2. University Level, Institution Level and Unit Level
3. Enrolment of NSS Volunteers – Programme Officers
4. Role of NSS Volunteers in Swatch Bharat Abhiyan and Digital India

Unit III: Programmes and Regular Activities

1. Awareness programmes on AIDS/HIV, Legal awareness, First-aid, Career guidance, Cyber Crime and Anti-Ragging.
2. Concept of Regular Activities, Traffic regulation, Working with Police Commissioner's Office, Working with Corporation of Madurai, Working with Health Department, Blind assistance & Blood Donation
3. Personality Development (Leadership, Communication Skill, Interpersonal Relations, Cultural Performance)
4. Morality values and patriotism the citizen should possess

Unit IV: Community Development and Addressing the Social Issues

1. Women Empowerment, Human Right Education – Communal Harmony
2. Entrepreneurship development - Entrepreneurial skills- government self-employment schemes
3. Rainwater harvesting – Issues with plastics and Preserve natural resources
4. National Integration and RTI

Unit V: Village Adoption & Disasters Management

1. Planning and Preparation of Camping Activities, Conducting Survey
2. Medical and Veterinary Camp, Literacy Camp, Plantation and Immunisation

3. Introduction to Disasters Management, classification of Disasters
4. Role of Volunteers in Disasters Management

SUGGESTED TOPICS FOR GROUP DISCUSSION / PRESENTATION

1. History and Growth of NSS
2. Role of NSS Volunteers
3. Blood Donation
4. RTI
5. Classification of Disasters

Suggested Readings:

i) Text Book

Training of Trainers in National Service Scheme Book, Dr. P. Ramachandra Rao and R.D. Sampath Kumar.

ii) Reference Books:

1. Department of Youth affairs and Sports, Indian youth in perspective, Govt. of India, New Delhi.
2. NSS – Manuals and Reports.

iii) Web Sources:

1. http://nss.nic.in/speccamp.asp
2. **^** National Service Scheme—NIT Calicut Chapter Retrieved 2012-08-01.
3. **^** National Service Scheme — P.G.D.A.V College, University of Delhi NSS P.G.D.A.V College, University of Delhi,
4. http://www.thebetterindia.com/140national-service-scheme-nss/

DEPARTMENT OF PHYSICAL EDUCATION– UG – CBCS-LOCF

PART - V

Title of the Paper: Physical Education **Semester: II**

Course Code : LUP5PE21 **Credit: 1**

Course learning out comes:

On completion of the course, the students are able to:

- Value the knowledge to preserve community health and well being
- Compare the relationship between general education and physical education
- Lay -out and mark the dimensions of the play court
- Will develop skills to establish daily caloric requirement and to design the balance diet plan
- Understand and prepare weight management plans

Pre-Required knowledge:

- ✓ Basic rules of cricket game
- ✓ Definition and proper steps of Suriya Namaskar
- ✓ Health Awareness concept of present scenario

Unit 1:

Physical Education-Meaning and Definition, Basic Rules of Games-Football- Kabaddi – Volleyball

Unit II:

Organization and Administration of Intramurals-Tournament- Sports meet-Olympics

Unit III:

Yoga- Asanas- Pranayama- Meditation- Relaxation Techniques

Unit IV:

Food and Nutrition, Drug addiction, Alcoholism, Smoking-Cleanliness, Personal Hygiene.

Unit V:

First Aid, Life Style Disorders- Obesity, Diabetes, Body Mass Index

Suggested topics for Group Discussion / Presentation

1. Physical Education is Health Education
2. Recent inclusions in Olympics'

3. Yoga for Mental healthiness
4. Synthetic Protein supplements
5. RICE method of injuries

Text Books:

1. Dr.T.Krishnammal, Physical and Health Education.
2. Dr. K. Chandrasekar, Sound Health through Yoga.

Reference Books:

1. C. Sathiyanesan, Hand book of Physical Education.
2. R.G. Goel, Encyclopedia of sports and games.
3. Dr. T.Ravichandran, Practical Yoga.

Web Sources:

www.swayamprabha.gov.in
www.e-yantra.org
www.vlabs.co.in
www.fossee.in

DEPARTMENT OF PHYSICAL EDUCATION– UG – CBCS-LOCF

PART IV

Title of the paper: YOGA **Semester: II**

Course Code : LUP4YA21 **Contact Hours: 1hrs/w** **Credits : 1**

Course Learning Outcomes:

On completion of the course, the students are able to

- ✓ spread the message of positive health as taught in Yoga to people in asystematic and scientific manner.
- ✓ provide a proper perspective and insight into various aspects of Yoga education to the trainees.

Pre-Required Knowledge:

- ✓ Foundations of Yoga: History, Evolution of Yoga and Schools of Yoga

- ✓ Basic Yoga Texts: Principal Upanishads Bhagavad Gita, Yoga Vasishtha
- ✓ Patanjala Yoga Sutra
- ✓ Applications of Yoga

Unit-I: NEEDSOF YOGA

Yoga -need of the hour, concept of Yoga, Definition of Yoga, Basics of Yoga, Stress & yoga, yoga for emotion culture, the science of happiness. Yoga in education, Yoga & personality

UNIT: II YOGA AND HEALTH

Yoga and Health (Definition of Health, Guidelines for Health in Yoga) – Health Related Fitness and Yoga – Yoga and Aging - Yoga for Handicapped people – Yoga as a remedy for addictions – Yoga and Social problems.

UNIT III: NUTRITION AND DIETETICS

Introduction to Nutrition and Dietetics – Diet and Digestion – Balanced Diet: Carbohydrates, fats, proteins, vitamins, and minerals. Yogic Diet: Sattvik, Rajasik, Tamasik. Diet and Diseases: Hypertension, Diabetes, Arthritis, Ulcerative, Colitis, Peptic Ulcer, Constipation, and Obesity.

Unit – IV: ASANAS

1. Ardha-Padmasana [virasana] 2. Ardha-Halasana 3. Pavana-Muktasana 4. Naukasana 5. Ardha-shalabhasana 6. Shalabhasana 7. Makarasana 8. Bhujangasana 9. Dhanurasana 10.Vakrasana 11.Chakrasana 12.Paschimottanasana 13.Ugrasana 14.Gomukhasana 15.Padmasana 16.Siddhasana 17.Bhadrasana 18.Swastikkasana 19.Vajrasana 20.Supta-Vajrasana 21.Yoga-Mudra.

Unit – V: MUDRAS, PRANAYAMAS AND MEDITATION

(i) MUDRA

1.Brahma-Mudra 2.Simha-Mudra 3.Shanmugi Mudra

4. Viparithakarani-Mudra 5.Ashwsini-Mudra

6. Suriyanamaskar

(ii) PRANAYAMAS

1.Nadi-Shuddhi 2.Nadi-Shodhana 3.Suryabhadana

4. Ujjayi 5. Bhastrika Pranayama 6. Bhramari Pranayama

7. Sitkari 8. Sitali

(iii) MEDITATION

1. Silent Meditation 2. Mantra Meditation

SUGGESTED TOPICS FOR GROUP DISCUSSION / PRESENTATIONS

Concept of Yoga

Yoga and Health

Introduction to Nutrition and Dietetics

Ardha-Padmasana [virasana],.Ardha-Halasana

Viparithakarani-Mudra

Suggested Readings:

Text Books:

1. Yoga Practice I - The World Community Service Centre - Vethathiri Publications, Erode, 1st Ed - 2009, 4 th Edition 2012
2. Mind, Vethathiri maharishi, Vethathiri publication, Erode, 1st Ed – 1999
3. Simplified Physical Exercises - Vethathiri Maharishi, 1st Edition, 1977, 44th Edition,2015, Vethathiri Publications.
4. Yoga for Modern Age - Vethathiri Maharishi, 1st Edition 1972, 19th Edition Oct. 2015 – Vethathiri Publications.
5. Body, Life - force and Mind :Vethathiri Maharishi - Ist Edition 2006, 2nd Edition May 2006 – Vethathiri publications.

References Books:

1. Asanas - Swami Kuvalayananda. Kaivalyadhama. Lonavla

2. Pranayama - Swami Kuvalayan and a Kaivalyadhama. Lonavla
3. Abstracts And Bibliography Of Articles On Yoga - Edited By
4. Dr.M.V.Bhole, From Kaivalyadhama Kaivalyadhama. Lonavla
5. Suiyanamaskar - By Dr. P. Mariayyah, Jaya Publishing House,
6. Perunthurai, Erode.
7. Sound Health Through Yoga – By Dr. K. Chandrasekaran, Prem
8. Kalyan Publications, Sedapatti, 1999.

Web Sources:

1. https://www.youtube.com/watch?v=RJ44oIxWiYI
2. https://www.youtube.com/watch?v=149Iac5fmoE
3. https://www.youtube.com/watch?v=149Iac5fmoE
4. https://www.youtube.com/watch?v=7ixtTgiVYzw
5. https://www.youtube.com/watch?v=IgzsuYggK5c
6. https://www.youtube.com/watch?v=nHnjxzMCMGg

DEPARTMENT OF LIBRARY AND INFORMATION SCIENCE

Part – V

Title of the paper: Basics of Library and Information Science **Semester: II**

Course code: LUP5LS21 **Contact Hours: 1hrs/w** **Credit: 1**

Course Learning Outcomes:

On completion of the course, the students will be able to

- Trace the History of Libraries.
- Classify information Sources.
- Follow the modern trends in the field of library science.

- Appreciate the value of books and other reading materials.
- Understand the importance of libraries in the modern society.

Pre required knowledge:

- Interest Reading.
- Basic computer knowledge to access internet.
- Basic ideas of Purushartha

Unit I – Evolution of Libraries

Evolution of writing – (Cuneiform – Hieroglyphics – Indus scripts – Tamil scripts (Tamil- Grantham – Vatteluthu)) – Evolution of writing materials – (Stones – Clay Tablets – Papyrus – Birch bark – Palm leaves – Paper) – Evolution of Libraries - Ashurbanipal library (Clay Tablets) – Library of Alexandria (Papyrus) – Government oriental manuscript library, Chennai.

Unit II – Modern Library System:

Public Libraries Academic Libraries, (School, College, University) –Research Libraries – Information Sources (Primary, Secondary and Tertiary).

Unit III – Knowledge Organisation:

Traditional Indian – Purushartha (Dharma, Artha, Kama and Moksha) – Modern Western – Dewey's Decimal classification – Modern Indian – Ranganathan's colon classification - Need for cataloging – OPAC.

Unit IV – Modern Trends:

Open Access – National Digital Library of India (NDL) – Open Library – Project Gutenberg – World Digital Library – Project Madurai – Google Books – Chennai Noolagam – Tamil Digital Library – DOAJ.

Unit V – Library and Society:

Library and Education (Formal and Non Formal) – Library legislation (Tamil Nadu Library act, Delivery of Books act) – Library and Democracy (Informed Citizens) – Connemara

Public Library, Chennai - Saraswathi Mahal Library, Thanjavur.

Suggested Topic for Group Discussion and Presentation:

- Deciphering ancient scripts.
- Importance of School Libraries.
- Web – OPACs.
- Digitalizingrare Tamil Books.
- Impact of Social medias on reading habit.

Text book:

Ranganathan, S.R,Library manual, Asia Publishing house, New Delhi, 1964.

References Books:

1. Krishnakumar, Reference service, Vani educational books, New Delhi, 1978.
2. Krishnakumar, Theory of Classification, Vikas Publishing house, New Delhi, 1993

Websites and e-Learning Sources:

- IGNOU – CLIS –Study materials.
  http://www.ignouhelp.in/ignou-clis-study-material
- Manomaniam Sundaram University – CLIS – Study Materials.
  https://www.msuniv.ac.in/Download/pdf/4e55f868a24b4a7
- Wikipedia.
- Encyclopaedia Britannica.

DEPARTMENT OF NCC – UG - CBCS - LOCF

PART V

Title of the paper: NCC – PRACTICAL **Semester: II**

Course code: LUP5NC21 **Credits: 1**

On completion of the course, the students are able to

- perform food and arms drill

- recognize the type of rifle.
- utilize map for movements
- interpret distance and signals for mobility
- apply the skills for self defense

Pre-required Knowledge

- ✓ Drill and Weapon Training.
- ✓ Map reading and Judging distance.
- ✓ Self defense.

Unit – I Drill

Drill–Open drill and Close drill – Uses of drill words of command, Arms drill, Foot Drill

Unit – II Weapon Training

0.22 Rifle – Introduction, specification, ammunition and handling - 5.66 mm INSA Rifle: Specification, stripping, assembling and cleaning. 7.62 mm Rifle: Specification, ammunition.

Unit – III Map Reading

Map Reading – Finding own Position, Ground to Map and Map to Ground

Unit – IV Judging Distance

Judging Distance – methods, under or over estimation – (Short – Medium – Long Distance). Field Signal – methods, hand Signals, signals with weapons, signals with whistle.

Unit –V Self Defence

Self defence – meaning, types, uses, Principles, unarmed combat, vulnerable parts of the body; Types of attacks – Types of holds – Types of basic throws – Precautions in self defence.

Suggested Topics / Practical Exercises

- varies Drill operations
- handling stripping and assembling of .22 riffle
- methods of finding own position
- calculation of judging distance using appropriate method.
- finding any one self defence in a critical situation.

SUGGESTED READINGS:

i) Text Books:

1. Asthana A K, Brigadier (2015).Kamptee, Commandant, Precis.
2. Major Ramasamy.R. (2010). NCC Guide – Army Wing, Karur, Priya Publications.
3. Cadets hand book (2018). Kamptee, Common subjects for SD/SW, OTA Training Materials.

ii) Reference Books:

1. Specialized Subject Army (2018).New Delhi, Govt. Of India Press.
2. Precis, (2009). Kamptee, Published by Officer Training School.
3. Cadet's diary. (2000).Chennai, Published by cadets' center.
4. Gupta.R. (2015) Ramesh Publishing House, NCC: Handbook of NCC cadets.
5. Lt. Saravanamoorthy. S.N. (2015). A hand book of NCC-Army wing. Jayalakshmi publications.

iii) Web sources:

1. https://indiancc.nic.in/
2. https://play.google.com/store/apps/details?id=com.chl.ncc&hl=en_IN&gl=US
3. https://joinindianarmy.nic.in/default.aspx
4. https://www.joinindiannavy.gov.in/
5. https://indianairforce.nic.in/

DEPARTMENT OF TAMIL – UG – CBCS

PART I- TAMIL

TITLE OF THE COURSE: இடைக்கால இலக்கியமும் புதினமும் Semester : III

Course Code: LUPITA31 Contact Hours: 6hrs/w Credit : 3

பாடத் திட்டத்தைக் கற்றுக் கொண்ட பின்பு மாணவர்கள் பெறும் பயன்கள்:

1. மாணவர்களைப் பண்படுத்துவதற்கு பக்தி நூல்கள் துணை செய்கின்றன.
2. மாணவர்கள் இயற்கை வளம் பற்றியும் தமிழின் பெருமை பற்றியும் அறிந்து கொள்ள நூல்கள் வழி வகுக்கின்றன.
3. புதினம் படிப்பதன் வாயிலாக மாணவர்கள் போட்டித் தேர்வுகளுக்கு தங்களைத் தயார்படுத்திக் கொள்ள முடிகிறது.
4. அரசுப் போட்டித் தேர்வுகளுக்கு மாணவர்களைத் தயார்படுத்த இலக்கணம் துணை புரிகின்றன.
5. படைப்பாற்றலை வளர்த்து கொள்ளும்விதத்தில் இலக்கிய வரலாறு மாணவர்களுக்கு அமைந்திருக்கிறது.

பாடத்திட்டத்திற்குத் தேவையான முன் அறிவு:

- அறுவகைச் சமயங்கள் பற்றி அறிந்து கொள்ளல்
- போட்டித் தேர்வில் வெற்றி பெறுவதற்கான உத்திகளைத் தெரிந்து கொள்ளல்
- படைப்பாற்றலை வளர்த்துக் கொள்ளல்

கூறு I: பக்தி இலக்கியங்கள்

1. திருஞானசம்பந்தர் - திருஆலவாய்ப் பதிகம் (முதல் 5 பாடல்கள்)
2. திருநாவுக்கரசர் - நமச்சிவாயப் பதிகம் (முதல் 5 பாடல்கள்)
3. சுந்தரமூர்த்தி நாயனார் - திருப்புனவாயில் பதிகம் (முதல் 5 பாடல்கள்)
4. மாணிக்கவாசகர் - திருவெம்பாவை (முதல் 5 பாடல்கள்)
5. குலசேகர ஆழ்வார் - பெருமாள் திருமொழி (முதல் 10 பாடல்கள்)
6. ஆண்டாள் - நாச்சியார் திருமொழி (திருப்பாவை முதல் 10 பாடல்கள்)
7. சித்தர் பாடல்கள்

(அ) திருமூலர் - மலமில்லை, மாசில்லை, பார்ப்பான் அகத்திலே, அன்பும், சிவமும்

(ஆ) பட்டினத்தார் - ஐயிரண்டு திங்களாய், ஓடாமல் பாழுக்கு, முதல் சங்கு அமுதூட்டும்

(இ) சிவவாக்கியார் - எங்குமுள்ள, ஒசையுள்ள, ஓடி ஓடி ஓடி ஓடி உட்கலந்த

கூறு II: சிற்றிலக்கியங்கள்

1. திருக்குற்றாலக் குறவஞ்சி - மலைவளம்
2. முக்கூடற் பள்ளு - நகர்வளம்
3. தமிழ் விடு தூது - சீர்கொண்டகூடற் சிவராசதானி முதல் - கல்லாதார் சிவலிங்கம் வரை 15 கண்ணிகள்
4. சேக்கிழார் பிள்ளைத்தமிழ் - அம்புலிப் பருவம் : முதல் 5 பாடல்

பாடுமதியோன் - எம்மை இனிது ஆள்பவன்

கூறு III: புதினம்

1. திக்கற்ற பயணம் - ராமன் மதி

கூறு IV: இலக்கணம்

1. முதல் எழுத்து, சார்பெழுத்து
2. மொழி முதல், இறுதி எழுத்துக்கள்
3. வலி மிகும், வலிமிகா இடங்கள்
4. ஓர் எழுத்து ஒரு மொழி
5. மரபுப் பிழை நீக்கம்

கூறு V: இலக்கிய வரலாறு

1. பக்தி இலக்கிய வளர்ச்சி
2. சிற்றிலக்கிய வளர்ச்சி
3. புதின இலக்கிய வளர்ச்சி

II. எழுத்துப் பயிற்சி :

1. கட்டுரை எழுதுதல் (இலக்கியம், சமூகம், அறிவியல்)
2. விளம்பரம் (உபயோகப் பொருள், இயந்திர விளம்பரம்)
3. நூல் விமர்சனம் (புதினம்)
4. குறும்படம் அல்லது திரைப்பட விமர்சனம்

1. பரிந்துரைக்கப்பட்ட நூல்கள்:

சரசுவதி (செய்யுள் தொகுப்பு)
சரசுவதி நாராயணன் கல்லூரி
நியூ செஞ்சுரி புக் ஹவுஸ் (பி) லிட். அம்பத்தூர்,
சென்னை - 600050
திக்கற்ற பயணம் (புதினம்)
சரசுவதி நாராயணன் கல்லூரி
நியூ செஞ்சுரி புக் ஹவுஸ் (பி) லிட். அம்பத்தூர்,

சென்னை – 600050

2. பார்வை நூல்:

- இந்திய தத்துவ ஞானம் - சி.லெட்சுமணன்
- திருமந்திரம் - நா.மாணிக்கவாசகன் உரை
- நாலாயிர திவ்யப் பிரபந்தம் - கமலக்கண்ணன்
- தமிழ் இலக்கிய வரலாறு - தமிழண்ணல்
- இலக்கிய வரலாறு - மு.அருணாச்சலம்
- சிற்றிலக்கிய வளர்ச்சி - நிர்மலா மோகன்
- நற்றிமிழ் இலக்கணம் - தொ.பரமசிவம்
- நன்னூல் - வெள்ளை வாரணனார் உரை

3. இணைய ஆதாரங்கள் :

தமிழ்விடு தூது

https://www.tamilvu.org/ta/courses-degree-p103-p1033-html-p103331-26009

முக்கூடற்பள்ளு

https://www.tamilvu.org/ta/courses-degree-c012-c0124-html-c01243l3-15342

குற்றாலக்குறவஞ்சி

https://www.tamilvu.org/ta/courses-degree-c012-c0123-html-c01233l2-15036

DEPARTMENT OF ENGLISH – UG – CBCS-LOCF

Title of the Course: English Language Proficiency –III **Semester: III**

Course Code: LUP2EN31 **Contact hours: 6hrs/w** **Credits: 3**

Course Learning Outcomes:

On completion of the course, the students are able to

- use English confidently for communication in day to day life.
- speak and write in academic English intelligibly.
- read and analyze texts in English.
- achieve the skill of writing creatively.
- acquire practical command of English in speaking, reading, and writing.

Pre-required Knowledge:

- ✓ Usage of Tense
- ✓ Active Vocabulary in frequent use
- ✓ Language and style of poetry

UNIT I-PROSE

O'Henry - The Gift of the Magi
Robert Lynd - On Forgetting
C.V.Raman - Water, The Elixir of Life
A.P.J.AbdulKalam - My Early Days from "Wings of Fire"

UNIT II -POETRY

Rabindranath Tagore - Leave This Chanting
LalDed - LalDed'sVakhs
William Wordsworth - The World is too much With Us
Walt Whitman - O Captain! My Captain!

UNIT III -NOVEL

Charles Dickens - Oliver Twist

UNIT IV- GRAMMAR

Voices
Transformation of Sentences
Idioms and Phrases

UNIT V COMPOSITION

Curriculum Vitae
Memoranda, Notices, Agenda & Minutes
E-Mail Writing

Suggested Topics for Presentation:

- ✓ Importance of English as an International Language.
- ✓ The pleasure of reading poetry
- ✓ Functional uses of Grammar
- ✓ Organizing data in CV
- ✓ Dickens as a social realist

Suggested Readings:

i)Text Book:

1.Wealth of English. Ed. Department of English, Saraswathi Narayanan College, Harrows Publications, Madurai, 2022.

ii)Reference Books:

1.Raman. C.V.A *Creative Mind Par Excellence*. *Hindustan Times*, 8th July 2014.

2.Sinha, Sasadhar. *Social Thinking of Rabindranath Tagore.* London, 1962.

iii)Web Sources:

1.https://english.washington.edu

2.https://www.lavc.edu>writingcentre.

3.https://poligo.com>articles>writing

4.https://www.athena.edu>book-review

5.https://poemanalysis.com>ocaptain

DEPARTMENT OF COMPUTER APPLICATIONS –UG – CBCS - LOCF - SF

Title of the Course: Programming in Java		**Semester: III**
Course Code: LUBCCT31	**Contact Hours: 4hrs/w**	**Credits: 4**

Course Learning Outcomes:

On Completion of the course, the students are able to

- understand the features of Java and the architecture of JVM
- write, compile, and execute Java programs that may include basic data types and control flow constructs and how type casting is done
- identify classes, objects, members of a class and relationships among them needed for a specific problem and demonstrate the concepts of polymorphism and inheritance
- demonstrate programs based on interfaces and threads and explain the benefits of JAVA's

Exceptional handling mechanism compared to other Programming Language

- write, compile, execute Java programs that include GUIs and event driven programming and also programs based on files

Pre – Required Knowledge:

- ✓ Basics of Programming (C &C++)
- ✓ OOPS Concept basics
- ✓ Basics of Loop, Function and File Management operation

Unit I: Fundamentals of java programming

Features of java-Introduction to java-Difference between Application and Applets-Creating and Executing java program-Java Tokens-Comments in a java program-Data Types- Variables-Arrays Operators and Control Statements: Operators –Control Statements-Looping Statements-Jump Statement.

Unit II: Classes and Objects

Class-Constructor-Method Overloading-Access Control-Static and Fixed Methods- String Buffer Class.

Unit III: Inheritance

Inheritance-Overriding methods-Using Super Keyword-Abstract class: **Packages and Interfaces:** Packages-Class path-Importing Packages-Interface-Creating our own packages-Interface

Unit IV: Exception Handling

Exception Handling –Throw Statement-Finally block. **Applet:** Applet –HTML Tags-Life Cycle of Applet-Applet Tags in HTML

Unit V: Multithreading

Thread –Life Cycle of a Thread-Creating a thread-Synchronization-Inter-thread communication-Deadlock I/O Stream: I/O Stream-File Stream

Suggested Topics for Group Discussion / Presentation

- ✓ Java applications and applet
- ✓ String Buffer Class
- ✓ Packages
- ✓ Multithreading
- ✓ Deadlock concepts

Suggested Reading:

i) Text Book:

Java Programming, P.Rizwan Ahama, Margham Publications. 2019.

ii) Reference Books:

1. **Java - The Complete Reference** – McGraw Hill publication, 12th edition, 2021.
2. Sachin Malhotra & Saurabh Choudhary, "**Programming in Java**", 2nd Ed, Oxford Press, 2013
3. Sagayaraj, Denis, Karthik and Gajalakshmi, "**JAVA Programming for Core and Advanced Learners**", 2018
4. Herbert Schildt & Dale Skrien, "**Java Fundamentals – A Comprehensive Introduction",** McGraw Hill, 1st Edition, 2013
5. Programming with Java A Primer, E.Balagurusamy, Second Edition, Tata McGraw Hill publishing company Ltd., 2019.

iii) Web Sources:

1. https://www.guru99.com/java-tutorial.html
2. https://java.sun.com/javase
3. https://www.oracle.com/technetwork/java/index.html
4. https://docs.oracle.com/javase/tutorial

Title of the Course: Programming in Java – Practical			Semester: III
Course Code :	LUBCCL31	Contact Hours: 4hrs/w	Credits: 4

Course Learning Outcomes:

On Completion of the course, the students are able to

- understand software development skills using Java programming real world applications.
- implement inheritance and polymorphism as programming techniques.
- apply exception handling.
- implement design console based, GUI based & web-based applications.

Programs

1. Arithmetic operations using switch case
2. Sum of Digits and Reverse of a number
3. Sorting list of numbers.
4. Finding Maximum and Minimum Number
5. Searching the number in the list
6. Perform Armstrong, Perfect number checking
7. Fibonacci series
8. Transpose Matrix using function
9. Sorting the Strings.
10. String Manipulations
11. Calculate Area of circle, rectangle, triangle, square using function overloading.
12. Calculate Area of circle, rectangle using method overloading
13. EB bill calculation using Single Inheritance
14. Student mark list using Multi-level Inheritance.
15. Salary calculation using Interface.
16. String Comparison using Exception Handling.
17. Perform Bank Operation using Package.
18. Perform arithmetic operation using Package

19. Draw basic Symbols using an Applet
20. Drawing a face picture using an Applet.

Reference Book:

Programming with JAVA, E.Balagurusamy, McGraw hill 2019

Title of the Course: Relational Database Management System **Semester: III**

Course Code: LUBCCT32 **Contact Hours: 4hrs/w** **Credits: 4**

Course Learning Outcomes:

On Completion of the course, the students are able to

- understand about the basic data-modeling building blocks & why data models are important.
- know normalization and role it plays in the database design process.
- utilize SQL data for administration and data manipulation.
- understand the ER model & relational model.
- apply various normalization techniques.

Pre – Required Knowledge:

- ✓ Fundamental Concepts of Database system in database design
- ✓ SQL Queries and Commands
- ✓ Basics of Computer Server (back end) knowledge

UNIT – I: Introduction

Database System Applications-DBMS Vs. File System - View of Data-Data Model Database Languages - Database users and Administrators - Transaction Management - Database System Structure - Application Architecture. Data Models: Basic Concepts - Constraint- Keys- ER Diagram - Weak Entity - Extended ER Features - UML; Relational Model: Structure of Relational Databases - Relational Algebra - Views.

UNIT – II: SQL

Background-Basic Structure-Set Operation-Aggregate Function-Null Values-Nested Sub Queries - Views - Modification of the Database - Data Definition Language - Embedded SQL - Dynamic SQL.

UNIT-III : **Advance SQL**

Integrity and Security: Domain - Constraint - Referential Integrity - assertions - Triggers - Security and Authorization - Authorization in SQL - Encryption and Authentication.

UNIT – IV: Relational Database Design

First Normal Form - Pitfalls in Relational Database Design-Functional Dependencies (Second Normal Form) - Boyce-Codd Normal Form - Third Normal Form - Fourth Normal Form - Overall Database Design Process.

UNIT-V : Transaction Management

Transaction concepts - States - Serializability. Lock based concurrency control: Locks - Granting - Two-Phase Locking protocol. Time stamp based protocol: Timestamps - Timestamp ordering protocol - Dead lock handling.

Suggested Topics for Group Discussion / Presentation

- ✓ Database application architecture
- ✓ Data Definition Language
- ✓ Encryption and Authentication
- ✓ Normalization procedure
- ✓ Deadlock Handling

Suggested Readings:

i) Text Book:

Database Management System, Alexis Leon, Mathews Leon, Leon Vikas publishing house Pvt Ltd, 1999.

ii) Reference Books:

1. **Database System Concepts** by Henry Korth and A.Silberschatz, The McGraw Hill Companies, 3rd edition,2000.

2. **File Structure** by Michael J.Greg, Riccardi, Pearson Publications,2000.

iii) Web Sources:

1. www.tutorialspoint.com/sql/sql-rdbms-concepts.htm
2. www.javatpoint.com/wha-is-rdbms
3. www.tutorialspoint.com/Relational-Database-Management-System-RDMS

Title of the Course: Logical Reasoning **Semester: III**

Course Code: LUBCGE31 **Contact Hours: 4hrs/w** **Credits: 4**

Course Learning Outcomes:

On Completion of the course, the students are able to

- understand the basic concepts of logical reasoning skills
- acquire satisfactory competency in use of reasoning
- understand the basic concepts of mental ability problems
- solve campus placements aptitude papers covering reasoning ability
- compete in various competitive exam like TANCET, UPSC, TNPSC etc.

Pre – Required Knowledge:

- ✓ Basics of reasoning concepts
- ✓ Basics of Mathematical Operations
- ✓ Basics of Statements and Assumptions

Unit – I: Reasoning Ability – I

Classification – Coding and Decoding

Unit – II: Reasoning Ability – II

Blood Relations – Direction Sense Test

Unit – III: Reasoning Ability – III

Logical Venn Diagrams – Number, Ranking and Time Sequence Test

Unit – IV: Reasoning Ability – IV

Mathematical Operations – Inserting the missing character

Unit – V: Logical Reasoning Ability:

Statement – Assumptions – Statements - Conclusions

Suggested Topics for Group Discussion / Presentation

- ✓ Coding and Decoding
- ✓ Blood Relations
- ✓ Logical Venn Diagrams
- ✓ Mathematical Operations
- ✓ Statements and Conclusions

Suggested Readings:

i) Text Book:

"A Modern Approach to Verbal Reasoning", R.S. Agarwal, S. Chand & Company Ltd., 2017

ii) Reference Book:

1. **"Analytical and Logical Reasoning",** B S Sijwali, Arihant Publications, 2014.

iii) Web Sources:

1. www.tutorialspoint.com
2. www.javatpoint.com

Title of the Course: SQL & PL/SQL – Practical		**Semester: III**
Course Code: LUBCDL31	**Contact Hours: 3hrs/w**	**Credits: 3**

Course Learning Outcomes:

On Completion of the course, the students are able to

- ➢ run data manipulation statements (DML) to update data in the oracle database.
- ➢ design PL/SQL anonymous block that execute efficiently.
- ➢ handle runtime errors.
- ➢ develop programming PL/SQL including stored procedures, stored functions, cursors, packages.

- learn Application development using PL/SQL & front-end tools.

Programs:

1. Create a table for student and find total, average and rank for it using SQL commands.
2. Create a table for employee and find gross pay and net pay using SQL commands.
3. Create a table and apply all the aggregate functions using SQL commands.
4. Create a table and perform arithmetic and comparison operations using SQL commands.
5. Create a PL/ SQL program for Control Statements.
6. Create a PL/ SQL program for implicit cursor.
7. Create a PL/ SQL program for explicit cursor.
8. Create a PL/ SQL program for trigger.
9. Create a PL/ SQL program for system defined exception.
10. Create a PL/ SQL program for user defined exception.
11. Create a PL/ SQL program for function concept.
12. Create a PL/ SQL program for procedure concept.
13. Create a PL/ SQL program for package concept.

Reference Book:

SQL, PL/SQL – The Programming Language of Oracle, 3rd Revised Edition, BPB publications, 2010.

Title of the Course: Corel Draw – Practical		**Semester: III**
Course Code: LUBCDL32	**Contact Hours: 3hrs/w**	**Credits: 3**

Course Learning Outcomes:

On Completion of the course, the students are able to

- create designs really from scratch and gets the freedom to express ideas whatever one wants with CorelDraw
- create all original art works using vector can be done in CorelDraw which puts logo designing first in line.

- develop Objects and drawings could be done realistically in CorelDraw. Using the gradient tool, and mesh tool, one can make objects look real.
- resize and scale the graphics/designs without losing the quality of the picture. It won't be distorted and the details will still be clear.
- conceptualize and create logos, various types of print designs.

Programs

1. Insert a picture in the existing image background
2. Create a 3D text in Corel Draw.
3. Create an advertisement for a textile company in Corel draw.
4. Design a business card for a company embed photo in it.
5. Design a banner for a marriage function.
6. Design a page for newspapers in Corel draw.
7. Design a logo and pamphlets in Corel draw.
8. Design an own book for 10 pages in Corel draw.
9. Design Your Personal Visiting Card.
10. Draw Our College Logo.
11. Design an Invitation Using Corel Draw.

Reference Book:

Corel DRAW 2018 in simple steps, DT Editorial Services, Dreamtech press, 2018

Title of the Course: Internet and its Applications		**Semester: III**
Course Code: LUBCSC31	**Contact Hours: 0**	**Credits : 2**

Course Learning Outcomes:

On Completion of the course, the students are able to

- understand the basic concept of computer and internet.
- gain the knowledge of types of web browsers and its features.

- know how to create, send and receive email.
- know the basic concepts of HTML.
- implement how to create a web page using basic HTML tags.

Pre – Required Knowledge:

- ✓ History of Internet
- ✓ Types of Search Engines
- ✓ Basic HTML Tags

Unit I: Introduction to Computers

Types of computers – History of Internet - History of World Wide Web – Web Sources.

Unit II: Web Browsers and FTP

Web Browsers - Internet Explorer - Connecting to Internet - Features of internet explorer6 searching the internet – File Transmission Protocol (FTP)

Unit III: Electronic mail

Creating an E-mail id - Sending and Receiving mails - Attaching a file – Instance messaging – Other web browsers

Unit IV: Introduction to HTML

HTML headers – HTML Tags – Images – special characters and line break –HTML Lists- simple HTML programs

Unit V: HTML frames, Forms, Bookmarks, Tables &Link

HTML frames – Forms – Bookmarks – Tables - Link- Simple Web Page Creation.

Suggested Topics for Group Discussion / Presentation:

- ✓ History of World Wide Web
- ✓ File Transmission Protocol
- ✓ E-mail – Instance Messaging
- ✓ HTML Lists
- ✓ HTML Tables

Suggested Readings:

i) Text Books:

1. **Fundamentals of Information Technology** - Alexis Leon, Mathews Leon, Vikas publishing House Pvt Ltd, 2005

2. **Web Technology** L.Mathu Krithiga Venkatesh, Margham publications, 2010.

ii) Reference Books:

1. **Internet and World Wide Web** Third Edition H.M.Deitel, P.J.Deitel and A.B.Goldberg-PHI
2. **The Internet- Complete Reference** Harley hahn, Tata McGraw-Hill.

iii) Web Sources:

https://www.tutorialspoint.com/internet_technologies/internet_services.htm

Title of the Course: Internet, Multimedia and MS Office		**Semester: III**
Course Code: LUBCSC32	**Contact Hours: 0**	**Credits : 2**

Course Learning Outcomes:

On Completion of the course, the students are able to

- understand the concept of Internet and services of Internet.
- know the basics of Multimedia.
- Know the computer security.
- understand Word and Power point.

Pre – Required Knowledge:

- ✓ Basics of Internet connections
- ✓ Basics of Multimedia elements
- ✓ Basics of Office Automation

Unit-I Internet and Internet Services

Introduction – History of the Internet – Internetworking protocol – The Internet Architecture – Managing the Internet – Connecting to Internet – Internet Connections – Internet Address – Internet Services – Uses of Internet.

Unit-II: Multimedia

Introduction – Definition – Characteristics of Multimedia system – Elements of Multimedia – Multimedia system – Multimedia Applications.

Unit-III: Computer Security

Introduction – Security threat and Attack - Malicious Software – Hacking – Security Services – Users identification and authentication – Security awareness.

Unit-IV: MS-Word

Introduction – Starting Word – Screen and its Components – The Office Button - The Ribbon – Examples.

Unit-V:MS-PowerPoint

Introduction – Basics of PowerPoint – Start MS-PowerPoint – Screen and its components – Office Button – The Ribbon – Examples.

Suggested Topics for Group Discussion / Presentation:

- ✓ History of Internet
- ✓ Multimedia Applications
- ✓ Security Threat and Attack
- ✓ Components of Word
- ✓ Components of Powerpoint

Suggested Reading:

i) Text Book:

Anita Goel, **Computer Fundamentals**, Pearson Education, New Delhi, 2010.

ii) Reference Books:

1. Vikas Gupta, **Comdex Computer Course Kit Windows 2007 with Office 2010**, Dream Tech Press, New Delhi, 2011.
2. Vikas Gupta, **Comdex Multimedia and Web Design Course Kit Windows 2007 with Office 2010**, Dream Tech Press, New Delhi, 2012.

iii) Web Sources:

1.https://www.tutorialspoint.com/internet_technologies/internet_services.htm

2.https://www.tutorialspoint.com/multimedia/multimedia_introduction.htm

DEPARTMENT OF TAMIL – UG – CBCS

PART I- TAMIL

TITLE OF THE COURSE: புனை கதை இலக்கியமும் சிறுகதையும் **Semester : IV**

Course Code : LUPITA41 **Contact Hours : 6hrs/w** **Credit: 3**

பாடத் திட்டத்தைக் கற்றுக் கொண்ட பின்பு மாணவர்கள் பெறும் பயன்கள்:

1. மாணவர்கள் சிறந்த கவிஞர்கள் ஆவதற்கும், எழுத்தாளராக உருவாவதற்கும், இந்த பாடநூல்கள் வகை செய்கிறது.
2. நாட்டில் நடக்கும் அன்றாட நிகழ்வுகளை, சமூகச் செய்திகளைச் சுருங்கச் சொல்லி மாணவர்களுக்கு விளக்குவதாக ஹைக்கூ கவிதைகள் அமைகின்றன.
3. சமூகத்தில் நடக்கும் அவலங்களை மாணவர்களுக்கு எடுத்துக் காட்டுவனவாக இப்பாட நூல்கள் இருக்கின்றன.
4. தமிழில் சொற்கள் எவ்வாறு தோன்றுகின்றன என்பதை மாணவர்கள் இலக்கணம் வாயிலாக அறிய முடிகிறது.
5. மாணவர்கள் மரபுக் கவிதை பற்றியும் , புதுக் கவிதை பற்றியும் தெரிந்து கொள்ள இலக்கிய வரலாறு உதவுகின்றன.

பாடத்திட்டத்திற்கு தேவையான முன் அறிவு :

- ❖ கவிதை படைப்பதை அறிந்து கொள்ளல்
- ❖ உரைநடையின் தோற்றம், ஆசிரியர்கள் பற்றி தெரிந்து கொள்ளல்
- ❖ படைப்பாற்றலை மேம்படுத்துதல்

கூறு I: கவிதை

1. பாரதியார் - நல்லதோர் வீணை செய்தே
2. பாரதிதாசன் - நீங்களே சொல்லுங்கள்
3. கவிமணி தேசியவிநாயகம் பிள்ளை - ஆசிய ஜோதி
4. முடியரசன் - கடவுளர் விரும்பும் மொழி
5. கண்ணதாசன் - கமலப்பூவே
6. வாலி - இலக்கிய நாயகன் இராமன்
7. அப்துல்ரகுமான் - உழவர்களைப் பாடுவோம்
8. மு.மேத்தா - தேசப்பிதாவுக்கு ஒரு தெருப்பாடகனின்அஞ்சலி
9. வைரமுத்து - இருபது கட்டளைகள்
10. நாட்டுப்புறப்பாடல் - உழவர்பாட்டு நா.வானமாமலை

11. மீரா - போலிகளை நம்புகிறாய்
12. சண்முகம் சரவணன் - துறவியின் இசைக் குறிப்புகள்

கூறு II: ஹைக்கூ கவிதைகள்

1. 40 கவிதைகள்

கூறு III: சிறுகதை

1. புதுமைப்பித்தன் - காலனும், கிழவியும்
2. கு.ப.ராஜகோபாலன் - விடியுமா?
3. ஜெயகாந்தன் - சுமைதாங்கி
4. நிர்மலா பெருமாள் - நிரந்தரமற்ற நிழல்
5. ராஜநாராயணன் - கதவு
6. பி.எஸ்.ராமையா - நட்சத்திரக் குழந்தைகள்
7. பிரபஞ்சன் - பிரும்மம்

கூறு IV: இலக்கணம்

1. நால்வகைச் சொற்கள் - பெயர், வினை, இடை, உரி

கூறு ஏ: இலக்கிய வரலாறு

1. மரபுக் கவிதை, புதுக் கவிதை , ஹைக்கூ கவிதை, - தோற்றமும் வளர்ச்சியும்
2. சிறுகதையின் தோற்றமும் வளர்ச்சியும்

II. எழுத்துப் பயிற்சி :

1. கடிதம் எழுதுதல்
2. கவிதை எழுதுதல்
3. சிறுகதை எழுதுதல்
4. தன் விவரக் குறிப்பு எழுதுதல்

1. பரிந்துரைக்கப்பட்ட நூல்:

சரசுவதி (செய்யுள் தொகுப்பு)
சரசுவதி நாராயணன் கல்லூரி
நியூ செஞ்சுரி புக் ஹவுஸ் (பி) லிட். அம்பத்தூர்,
சென்னை - 600050

2. பார்வை நூல்:

- தமிழ் இலக்கிய வரலாறு - மு.வரதராசன் வகைமை நோக்கில்
- தமிழ் இலக்கிய வரலாறு - பாக்கிய மேரி
- நற்றமிழ் இலக்கணம் - தொ.பரமசிவம்
- வகைமை நோக்கில்

- தமிழ் இலக்கிய வரலாறு - ஈஸ்வரன்
- தாய் வழி இலக்கணம் - மீ.முத்துராணி
- நன்னூல் - வெள்ளை வாரணனார் உரை
- நவீன இலக்கியப் போக்குகள் - முருகேசப் பாண்டியன்
- தமிழில் சிறுகதை பிறக்கிறது - சி.சு.செல்லப்பா
- படைப்பாக்க உத்திகள் - சவரிமுத்து

3. இணைய ஆதாரங்கள்:

சிறுகதைகளின் தோற்றமும் வளர்ச்சியும்

https://podhutamizh.blogspot.com/2017/09/blog-post_42.html?m=1

புதுக்கவிதையின் தோற்றமும் வளர்ச்சியும்

http://www.tamilvu.org/library/nationalized/pdf/81-vallikannan/111-puthukkavithaiyinthottramumvalarchchiyum.pdf

மரபுக் கவிதையின் தோற்றமும் வளர்ச்சியும்

http://neelamegan.blogspot.com/2015/09/blog-post.html?m=1

DEPARTMENT OF ENGLISH – UG – CBCS-LOCF

Title of the Course: English Language Proficiency-IV **Semester: IV**

Course Code: LUP2EN41 **Contact hours: 6hrs/w** **Credits:3**

Course Learning Outcomes:

On Completion of the Course the students are able to

- speak and write clearly in fair English.
- listen and read carefully the various viewpoints of different writers and engage with them.
- understand the world with the help of English language.
- develop an awareness of the linguistic –cultural richness of India.
- practise language skills for successful communication

Pre-required Knowledge:

- ✓ Comfortability on language skills
- ✓ Functional Grammar competence

- ✓ Active vocabulary package

UNIT-I-PROSE

Martin Luther King	:	I Have a Dream
A.K.Ramanujan	:	Arts of Money
SunitiNamjoshi	:	Duty Distance
R.K.Lakshman	:	The Gold Frame

UNIT-II-POETRY

Alfred Lord Tennyson	:	The Brook
Henry Derozio	:	The Harp of India
William Blake	:	The Little Black Boy
D.H.Lawrence	:	Money Madness

UNIT-III-DRAMA

William Shakespeare	:	As You Like it

UNIT-IV-GRAMMAR

Direct and Indirect speech

Degrees of Comparison

One word substitution

UNIT-V-COMPOSITION

Interview Skills

Group Discussion

Meeting, Seminars and Conferences

Suggested Topics for Presentation:

- ✓ Martin Luther King and civil rights movement.
- ✓ A.K.Ramanujan's writing style.
- ✓ Money is a madness-How?
- ✓ Shakespeare and his major comedies.
- ✓ Grammar and Language competence

Suggested Readings:

i)Text Book:

1.*Wealth of English*. Ed. Department of English, Saraswathi Narayanan College. Harrows Publications, Madurai, 2022.

ii)Reference Books:

1.Plumge : Communication skills in English: Orient & Black Swan, 2021.

2.Glimpses of Infinity: Orient & Black Swan, 2021.

3.Literary Adventures: Orient & Black Swan, 2021.

iii)Web Sources:

1.https://www.inc.com

2.https://www.litbullseye.com

3.https://studentscantwait.edtrust.org/wpcontent/uploads/sites/2/2017/06/EnglishLanguageProficiency-1-1.pdf

DEPARTMENT OF COMPUTER APPLICATIONS –UG – CBCS - LOCF - SF

Title of the Course: Programming in Python **Semester: IV**

Course Code: LUBCCT41 **Contact Hours: 4hrs/w** **Credits: 4**

Course Learning Outcomes:

On Completion of the course, the students are able to

- understand python variables, operators and data types
- get an idea about python control structures
- understand python complex data types
- work on Python files and databases
- get an idea about python packages and GUI programming

Pre – Required Knowledge:

- ✓ Basics of Programming concepts
- ✓ Basics of File Operations
- ✓ Basics of Database concepts

Unit I: Introduction to Python

Python variables, Python basic Operators, Understanding python blocks. Python Data Types, Declaring and using Numeric data types: int, float etc.

Unit II: Python Program Flow Control Conditional blocks

if, else and else if, Simple for loops in python, For loop using ranges, string, list and dictionaries. Use of while loops in python, Loop manipulation using pass, continue, break and else. Programming using Python conditional and loop blocks.

Unit III: Python Complex data types

Using string data type and string operations, Defining list and list slicing, Use of Tuple data type. String, List and Dictionary, string manipulation methods, List manipulation. Dictionary manipulation, Programming using string, list and dictionary in-built functions. Python Functions, Organizing python codes using functions.

Unit IV: Python File Operations

Reading files, Writing files in python, Understanding read functions, read(), readline(), readlines(). Understanding write functions, write() and writelines() Manipulating file pointer using seek Programming, using file operations.

Database Programming:

Connecting to a database, Creating Tables, INSERT, UPDATE, DELETE and READ operations, Transaction Control, Disconnecting from a database, Exception Handling in Databases.

Unit V: Python packages

Simple programs using the built-in functions of packages matplotlib, numpy, pandas etc.**GUI Programming:** Tkinter introduction, Tkinter and Python Programming, Tk Widgets, Tkinter examples.

Suggested Topics for Group Discussion / Presentation

- ✓ Python Data Types
- ✓ Python Conditional Blocks
- ✓ Manipulating File Pointers
- ✓ Exception Handling in Databases

- ✓ Python Packages

Suggested Readings:

i) Text Books:

1. Wesley J. Chun, **"Core Python Applications Programming",** 3rd Edition, Pearson Education, 2016
2. Charles Dierbach, **"Introduction to Computer Science using Python",** Wiley, 2015

ii) Reference Books:

1. Jeeva Jose &P.SojanLal, **"Introduction to Computing and Problem Solving with PYTHON",** Khanna Publishers, New Delhi, 2016
2. Downey, A. et al., **"How to think like a Computer Scientist: Learning with Python",** John Wiley, 2015
3. Mark Lutz, **"Learning Python",** 5th edition, Orelly Publication, 2013, ISBN 978- 1449355739
4. John Zelle, **"Python Programming: An Introduction to Computer Science",** Second edition, Course Technology Cengage Learning Publications, 2013, ISBN 978- 1590282410
5. Michel Dawson, **"Python Programming for Absolute Beginers"**, Third Edition, Course Technology Cengage Learning Publications, 2013, ISBN 978-1435455009
6. David Beazley, Brian Jones., **"Python Cookbook",** Third Edition, Orelly Publication, 2013

iii) Web Sources:

1. https://www.tutorialspoint.com/python/index.htm
2. https://docs.python.org/3/tutorial/
3. https://www.python.org/about/gettingstarted/
4. https://www.programiz.com/python-programming
5. https://pythonprogramming.net/

DEPARTMENT OF COMPUTER APPLICATIONS –UG – CBCS - LOCF - SF

Title of the Course: Programming in Python – Practical		**Semester: IV**
Course Code: LUBCCL41	**Contact Hours: 4hrs/w**	**Credits: 4**

Course Learning Outcomes:

On Completion of the course, the students are able to

- describe python language syntax for simple program.
- examine the core data structure like conditional and loops.
- interpret the concepts of functions for structure.
- discover the capabilities of lists tuples dictionaries.
- identify the external modules for writing data operations to navigate the file systems.

Programs:

1. Create a simple calculator to do all the arithmetic operations
2. Write a program to use control flow tools like if.
3. Write a program to use for loop
4. Data structures use list as stack use list as queue tuple, sequence
5. Create new module for mathematical operations and use in your program
6. Write a program to read and write files, create and delete directories
7. Write a program with exception handling
8. Write a program using classes
9. Connect with MySQL and create address book
10. Write a program using string handling and regular expressions
11. Program to parse apache log file
12. Create a GUI program using pygtk

Reference Book:

Learn Python with 200 programs, Vaishali B.Bhagat, Notion press, 2020.

Title of the Course: Data Analytics		**Semester: IV**
Course Code: LUBCGE41	**Contact Hours: 3hrs/w**	**Credits: 3**

Course Learning Outcomes:

On completion of the course, the students are able to

- analyze the data and carry out supervised, un-supervised Learning processes and Explain the concept and challenge of big data
- interpret the components of Hadoop and Hadoop Eco-System
- develop a Map Reduce Application of the data.
- demonstrate the Hadoop environment to work with data.
- explore the concepts of Hadoop Cluster.
- understand data analysis techniques for applications handling large data.

Pre – Required Knowledge:

- ✓ Basics of SQL
- ✓ Basics of Microsoft Excel
- ✓ Basics of Data Visualization

Unit I: Introduction To Big Data

Introduction –Understanding Big Data –Capturing Big Data – Benefits-Organizing Big Data –Analyzing –Technology Challenges for Big Data. Big Data Sources and Applications: Introduction-Machine-to-Machine (M2M) Communications - Big Data Applications Big Data Architecture: Introduction – Standard Big Data Architecture –Big Data Architecture Examples.

Unit II: HADOOP

Fundamentals: History of Hadoop- Data Format – Analyzing the Data with Hadoop Scaling Out-Hadoop

Streaming. The Hadoop Distributed File System: The Design of HDFS-HDFS Concepts The Java Interface to HDFS.

Unit III: Developing a Map Reduce Application

Configuration API-Setting Up the Development Environment-Writing Unit Test with MR Unit- Running Locally to Test Data , Cluster –Map Reduce Work flows. How Map Reduce Works: Anatomy of a Map Reduce Job run-Failures-Job Scheduling-Shuffle and Sort – Task execution

Unit IV: Hadoop Environment

Setting up a Hadoop Cluster - Cluster specification - Cluster Setup and Installation - Hadoop Configuration-Security in Hadoop - Hadoop benchmarks. Administering Hadoop: – HDFS - Monitoring-Maintenance

Unit V: Frameworks

Applications on Big Data Using Pig and Hive : Data processing operators in Pig – Hive services – HiveQL – Querying Data in Hive.

Suggested Topics for Group Discussion / Presentation

- ✓ Big data applications
- ✓ HADOOP Streaming
- ✓ Job Scheduling
- ✓ Security in HADOOP
- ✓ Querying Data in Hive

Suggested Readings:

i) Text Books:

1. Anil Maheshwari" Big Data" ,Mc Graw Hill Education, 2017.
2. Tom White "Hadoop: The Definitive Guide" Third Edition, O"reilly Media, 2012.

ii) Reference Books:

1. Chris Eaton, Dirk DeRoos, Tom Deutsch, George Lapis, Paul Zikopoulos, "Understanding Big Data: Analytics for Enterprise Class Hadoop and Streaming Data", McGrawHill Publishing, 2012.

2. Anand Rajaraman and Jeffrey David Ullman, “Mining of Massive Datasets”, Cambridge University Press, 2012.
3. Big Data Analytics for beginners – Faraz Rabbani, Ali Roghani – Create space Independent Publishing Platform – 2014.

iii) Web Sources:

1. https://www.tutorialspoint.com/big_data_analytics/index.htm
2. https://www.edureka.co/blog/big-data-analytics/

Title of the Course: Open Source Technology **Semester: IV**
Course Code: LUBCDS41 **Contact Hours: 3hrs/w** **Credits: 3**

Course Learning Outcomes:

On Completion of the course, the students are able to

- gain the knowledge of open source software
- understand the open source software history, philosophy and copyrights
- know the basics of Community
- understand the Apache server.
- know the basics of open source ethics

Pre – Required Knowledge:

- ✓ Basics of Open source software
- ✓ Basics of Server
- ✓ Basics of types of Server

Unit I: Introduction

Open Source, Free Software, Free Software vs. Open Source software, Public Domain Software, FOSS does not mean no cost. History : BSD, The Free Software Foundation and the GNU Project.

Unit II: History and Philosophy

Open Source History, Initiatives, Principle and methodologies. Philosophy : Software Freedom, Open Source Development Model Licences and Patents: What Is A License, Important FOSS Licenses (Apache, BSD, GPL,

LGPL), copyrights and copylefts, Patents Economics of FOSS : Zero Marginal Cost, Income-generation opportunities, Problems with traditional commercial software, Internationalization

Unit III: Community Building:

Importance of Communities in Open Source Movement- JBoss Community- Starting and Maintaining an Open Source Project - Open Source Hardware

Unit IV: HTTP Server:

Apache HTTP Server and its flavors- WAMP server (Windows, Apache, MySQL, PHP)- Apache, MySQL, PHP, JAVA as development platform.

Unit V: Open source ethics

Open source vs. closed source Open source government, Open source ethics. Social and Financial impacts of open source technology, Shared software, Shared source.

Suggested Topics for Group Discussion / Presentation

- ✓ Public Domain Software
- ✓ Open Source Development Model
- ✓ JBoss Community
- ✓ WAMP Server
- ✓ Social and Financial Impacts of open source technology

Suggested Readings:

i) Text Books:

1. Sumitabha Das “Unix Concepts and Applications, Tata McGraw Hill Education, 2006.
3. The Official Ubuntu Book, 8th Edition, 2014.
4. Kailash Vedera, Bhavyesh Gandhi, “Open Source Technology”, University Science press, 2009.

ii) Reference Books:

1. Paul Kavanagh, “Open Source Software: Implementation and Management”, Elsevier Digital Press, 2004.

2. The Linux Documentation Project : http://www.tldp.org
3. Docker Project Home : http://www.docker.com

iii) Web Sources:

1. http://www.tldp.org
2. http://www.docker.com

Title of the Course: Cryptography and Cyber Security		**Semester: IV**
Course Code: LUBCDS42	**Contact Hours: 3hrs/w**	**Credits: 3**

Course Learning Outcomes:

On Completion of the course, the students are able to

- understand the need of security and various encryption techniques
- use of public key crypto system
- authentication and integrity to the messages
- develop the digital signature standards and its application in real world
- know the concept of cyber crimes and digital forensics

Pre – Required Knowledge:

- ✓ Basics of Security Threats
- ✓ Basics of Cryptography techniques
- ✓ Basics of Cyber Crimes

Unit I: Introduction to Cyber Security

Types of Attacks, Goals for Security, Security threat and vulnerability, Cybersecurity models (the CIA triad, the star model). Classical encryption techniques, substitution ciphers and transposition ciphers, cryptanalysis, steganography, Stream and block ciphers - Modern Block Ciphers: Block ciphers principles, Shannon's theory of confusion and diffusion. Data encryption standard (DES), Strength of DES,

Unit II: Principals of public key crypto systems

RSA algorithm, security of RSA. **Key Management and distribution**: Symmetric key distribution, Diffie-Hellman Key Exchange, Public key distribution,

Unit III: Message Authentication Codes

Authentication requirements, authentication functions, message authentication code, hash functions, birthday attacks, security of hash functions,

Unit IV: Digital Signatures

Digital Signatures, Elgamal Digital Signature Techniques, Digital signature standards (DSS), proof of digital signature algorithm.

Unit V: Introduction to Cyber Crime and security

Cyber Crimes, types of Cyber Crime, hacking, attack vectors, Cross Site Scripting (XSS). Cyber Space and criminal behaviour, traditional problems associated with Cyber Crime, Introduction to Incident Response, Digital Forensics - Phishing.

Suggested Topics for Group Discussion / Presentation

- ✓ Steganography
- ✓ RSA Algorithm
- ✓ Hash Functions
- ✓ Types of Cyber Crime
- ✓ Digital Forensics

Suggested Readings:

i) Text Book:

William Stallings, "**Cryptography and Network Security: Principles and Practice**", Pearson Education, Seventh Edition, 2017

ii) Reference Books:

1. Nina Godbole and SunitBelapure, **Cyber Security: Understanding Cyber crimes, Computer Forensics and Legal Perspectives,** Willey India Pvt.Ltd., 1st edition, 2011.
2. Dr T R Padmanabhan N Harini,"**Cryptography and Security**", Wiley India, 2011.

iii) Web Sources:

1. https://www.tutorialspoint.com/cryptography/index.htm

2. https://gatevidyalay.com/tag/cryptography-and-network-security-tutorial/
3. https://www.mygreatlearning.com/blog/cryptography-tutorial/

Title of the Course: E-Commerce		**Semester: IV**
Course Code: LUBCSE41	**Contact Hours: 2hrs/w**	**Credits: 2**

Course Learning Outcomes:

On Completion of the course, the students are able to

- understand the concept of Ecommerce and its types
- know the various online payment and marketing on Web
- know the Various E-business Strategies.
- know the various E-Commerce Technologies
- understand Various Network and Mobile Commerce Technologies

Pre – Required Knowledge:

- ✓ Online Shopping concepts
- ✓ Basics of E-Payment
- ✓ Basics of Wireless Technologies

UNIT- I: History of E-commerce and Indian Business Context

E-Commerce -Emergence of the Internet - Emergence of the WWW - Advantages of E-Commerce - Transition to E-Commerce in India - The Internet and India - E-transition Challenges for Indian Corporate.

UNIT- II: Business Models for E-commerce

Business Model - E-business Models Based on the Relationship of Transaction Parties - E-business Models Based on the Relationship of Transaction Types.

UNIT- III: Enabling Technologies of the World Wide Web

World Wide Web - Internet Client-Server Applications - Networks and Internets - Software Agents - **E-Marketing :** Traditional Marketing - Online Marketing - E-advertising – E-branding.

UNIT- IV: E-Payment Systems

Main Concerns in Internet Banking - Digital Payment Requirements - Digital Token-based e-payment Systems - Classification of New Payment Systems - Properties of Electronic Cash - Cheque Payment Systems on the Internet.

UNIT- V: Information systems for Mobile Commerce

Introduction - Wireless Applications - Cellular Network - Wireless Spectrum - Technologies for Mobile Commerce - Wireless Technologies.

Suggested Topics for Group Discussion / Presentation

- ✓ Emergence of the World Wide Web
- ✓ E-business Models
- ✓ E-Advertising
- ✓ E-Payment System
- ✓ Wireless Spectrum

Suggested Readings:

i) Text Books:

1. P.T.Joseph, **"E-Commerce - An Indian Perspective",** 4th Edition, PHI Learning, 2012.
2. C Xavier, **"World Wide Web Design with HTML",** 13th Reprint, Tata McGraw Hill, 2006.
3. A.Leon and M.Leon, **"Introduction to Information Technology",** 1stEdition, Vijay Nicole Publications, 2013.

ii) Reference Books:

1. David Whiteley, **"E-Commerce Strategy, Technologies and Applications",** 1st Edition, Tata Mc-Graw-Hill, 2001.
2. Kamalesh K Bajaj and Debjani Nag, **"E-Commerce - The cutting edge of Business",** 2nd Edition, Tata McGraw-Hill Education, 2005.
3. Alexis Leon and Mathews Leon, **"Internet for Everyone",** 15th Edition, Leon Tech world, UBS Publications, 2012.

4. Ritendra Goel, **"e-commerce",** New Age International Publishers, 2016.

iii) Web Sources:

1. https://www.geeksforgeeks.org/e-commerce/
2. https://www.tutorialspoint.com/e_commerce/index.htm
3. https://www.geeksforgeeks.org/e-commerce-and-security-threats-to-e-commerce/
4. https://www.tutorialspoint.com/mobile_marketing/m_commerce.htm
5. https://magenest.com/en/mobile-commerce-technology/

Title of the Course: Human Resource Management **Semester: IV**
Course Code : LUBCSE43 **Contact Hours: 2hrs/w** **Credits: 2**

Course Learning Outcomes:

On Completion of the course, the students are able to

- describe trends in the labor force composition and how they impact human resource management practice.
- develop strategically plan for the human resources needed to meet organizational goals and objectives.
- define the process of job analysis and discuss its importance as a foundation for human resource management practice.
- know the legislation impacts human resource management practice.
- compare and contrast methods used for selection and placement of human resources.

Pre – Required Knowledge:

- ✓ Basics of HR Role
- ✓ Basics of Recruitment
- ✓ Basics of planning

UNIT- I: Nature and Scope of Human Resource Management

Evolution of Human Resource Management- HR environment - Functions of a human resources management –Role of HR professionals -Emerging HR Trends.

UNIT –II: Human Resource Planning

Strategic Human Resource Management - HR Policies – Job analysis and Design - Use of Human Resource Information System –**Recruitment:** sources and choice – Selection process: types of tests, Group discussion, Interviews and its types and medical test.

UNIT- III: Socialising

Training and development –HRD programmes - Performance appraisal –**Career Planning and Development** - Disciplinary Procedures - Collective Bargaining.

UNIT- IV: Motivation Theories

Hawthorne Studies –Motivation and Morale –Participative Management –Quality Circle –Empowerment.

UNIT- V: Compensation Management

Reward system –Labour relations –Knowledge creation and Management- Employee Welfare, Safety and Health – Employee benefits and services –Promotion, Transfers and separation –**Human resource Accounting and Audit** – Ethical issues in HR Management and International Human Resource Management.

Suggested Topics for Group Discussion / Presentation

- ✓ Emerging HR Trends
- ✓ HR policies
- ✓ HRD Programmes
- ✓ Empowerment
- ✓ Ethical Issues in HR Management

Suggested Readings:

i) Text Books:

1. Prasad L.M., **Human Resource Management**, 2nd edition, Sultan Chand, New Delhi, 2001.
2. Ivancevich, **Human Resource Management**, 9th edition, McGraw-Hill, New Delhi, 2003.

ii) Reference Books:

1. Biswajeet Pattanayak, **Human Resource Management**, 3rd edition, Eastern Economy Edition,New Delhi, 2006.
2. Dessler, **Human Resource Management**, 3rd edition, Pearson Education Limited, New Delhi,2002.
3. Aswathappa, **Human Resource and Personnel Management**, 7th edition, Tata McGraw Hill,New Delhi, 2005.
4. Leon G.Schiffman, **Consumer Behaviour**, 9th edition, Prentice Hall India Ltd, New Delhi, 2007.

iii) Web Sources:

1. https://www.tutorialspoint.com/human_resource_management/index.htm
2. https://www.javatpoint.com/what-is-hr
3. https://www.hrexam.com/hrm-tutorial
4. https://www.w3spoint.com/hr-tutorial
5. https://www.vskills.in/certification/tutorial/certified-human-resources-manager/

Title of the Course: Office Automation – Practical **Semester: IV**
Course Code: LUBCSL41 **Contact Hours: 2hrs/w** **Credits: 2**

Course Learning Outcomes:

On Completion of the course, the students are able to

- create document.
- perform calculations in Microsoft Excel using both manually inputting formula and built-in functions.
- perform accounting operations.
- gain knowledge of presentation skills.

I. MS-WORD

1. Text Manipulation: Write a paragraph about your institution and Change the font size and type, Spell check, Aligning and justification of Text
2. Bio data: Prepare a Bio-data.
3. Find and Replace: Write a paragraph about yourself and do the following. Find and Replace - Use Numbering Bullets, Footer and Headers.

2. Tables and manipulation: Creation, Insertion, Deletion (Columns and Rows). Create a mark sheet.
3. Mail Merge: Prepare an invitation to invite your friends to your birthday party. Prepare at least five letters.

II. MS-EXCEL

1. Data sorting-Ascending and Descending (both numbers and alphabets)
2. Mark list preparation for a student
3. Individual Pay Bill preparation.
4. Invoice Report preparation.
5. Drawing Graphs. Take your own table.

III. MS-POWERPOINT

1. Create a slide show presentation for a seminar.
2. Preparation of Organization Charts
3. Create a slide show presentation to display percentage of marks in each semester for all students
   a. Use bar chart (X-axis: Semester, Y-axis: % marks).
   b. Use different presentation template different transition effect for each slide.

i) Reference Book:

MS Office 2010 Traning Guide, Satish Jain, M.Geeta, Kratika, BPB Publications, 2010.

ii) Web Sources:

1.https://ptgmedia.pearsoncmg.com/images/9780735623026/samplepages/9780735623026.pdf

2.https://www.dit.ie/media/ittraining/msoffice/MOAC_Excel_2016_Core.pdf

3.https://ptgmedia.pearsoncmg.com/images/9780735697799/samplepages/9780735697799.pdf

Title of the Course: Data Analytics with Excel – Practical Semester: IV
Course Code: LUBCSL42 Contact Hours: 2hrs/w Credits: 2

Course Learning Outcomes:

On completion of the course, the students are able to

- apply advanced formulae to lay data in readiness for analysis
- use advanced techniques for report visualizations
- leverage on various methodologies of summarizing data
- understand and apply basic principles of laying out Excel models for decision making
- use spreadsheet package MS – Excel for business applications.

Programs:

1. Lookup & Functions
2. Conditional Formatting
3. Data Validation
4. Sorting and Filtering
5. Pivot Tables
6. Data Visualization
7. Data Analysis tools (Correlation and Regression)

Reference Book:

Data Analysis using Microsoft Excel, Excel books publisher, Ash Narayanan Sah, 2009.

Title of the Course: Multimedia and its Applications **Semester: IV**
Course Code : LUBCSC41 **Contact Hours: 0** **Credits: 2**

Course Learning Outcomes:

On completion of the course, the students are able to

- work with different font styles and design tools.
- develop projects using drawing techniques.
- understand image types and color models
- compress images, videos and audios using data compression methods
- encode videos and audios using MPEG

Pre – Required Knowledge:

- ✓ Basics of Multimedia elements

- ✓ Basics of Animation
- ✓ Basics of Text, audio, and video editing

UNIT- I: Introduction to multimedia

Components - Uses of multimedia - Stages of a multimedia project- Requirements to make good multimedia - Multimedia Hardware - Macintosh and Windows production Platforms, Hardware peripherals

UNIT – II: Text - Fonts & Faces

Using Text in Multimedia- **Font Editing & Design Tools**- Hypermedia – Hypertext - Images – Making Still Images – Bitmaps - Vector Drawing - 3D Drawing & rendering, Color – understanding Natural Light and Colors - Computerized Colors - Color Palettes - Image File Formats

UNIT – III: Sound

Digital Audio- preparing digital audio files – Making MIDI Audio- Audio File Formats -MIDI vs Digital Audio- adding sound to your multimedia project

UNIT – IV: Video

How Video Works- Analog Video- Digital Video- digital video resolution – digital video architectures- digital video compression- Video File Formats- Shooting and Editing Video.

UNIT – V: Animation

Principle of Animations- Animation Techniques- Animation File Formats- Making animations that works – A rolling ball – a bouncing ball – creating an animated scene

Suggested Topics for Group Discussion / Presentation:

- ✓ Uses of Multimedia
- ✓ 3D drawing and Rendering
- ✓ MIDI Audio
- ✓ Shooting and Editing Video
- ✓ Making Animations

Suggested Readings:

i) Text Books:

1. Tay Vaughan, “Multimedia: Making it work”, Tata McGraw-Hill Publishing, Seventh edition. 2008.

2. Ralf Steinmetz and Klara Naharstedt, “Multimedia: Computing, Communications Applications”, Pearson, 1995.

ii) Reference Books:

1. 1.Walterworth John A - Multimedia Technologies and Application - Ellis Horwood Ltd. - London - 1991.
2. John F Koegel Buford - Multimedia Systems - Addison Wesley - First Indian Reprint - 2000.

iii) Web Sources:

1. https://www.tutorialspoint.com/multimedia/multimedia_introduction.htm
2. https://www.geeksforgeeks.org/what-is-multimedia/

DEPARTMENT OF COMPUTER APPLICATIONS –UG – CBCS - LOCF - SF

(For those who join in June 2022)

Title of the Course: Mobile Computing **Semester: IV**

Course Code: LUBCSC42 **Credits: 2**

Course Learning Outcomes:

On Completion of the course, the students are able to:

- understand the architecture, application and services of mobile computing.
- know the architecture of Global System for Mobile communication.
- know the 802.11 standards, WAP architecture.
- know the GPRS
- understand the Security Issues

Pre – Required Knowledge:

- ✓ Internet usages
- ✓ Basics of Networking
- ✓ Generation of Networks

UNIT – I: Introduction

Mobility of Bits & Bytes – Wireless – The Beginning – Mobile Computing – Dialogue Control – Networks –

Middleware and Gateways –Application and Services – Developing mobile computing applications – Security in mobile computing. **Mobile Computing Crchitecture:** Internet – The ubiquitous network – Architecture for mobile computing – Three-tier architecture – Design considerations for mobile computing – Mobile computing through internet.

UNIT – II: Mobile Computing through Telephony

Evolution – Multiple access procedures– Satellite communication systems – Mobile computing through telephone –developing an IVR application – Voice XML – TAPI – Computer supported telecommunication application. **Emerging Technologies:** Introduction –Bluetooth – RFID – Wireless broadband-Mobile IP – IPV6 – Java card.

UNIT – III: Global System for mobile communications (GSM)

GSM – GSM Architecture –GSM Entities – Call routing in GSM – PLMN interfaces – GSM addresses &identifiers – Network aspects in GSM – Mobility management – GSM frequency allocation – Personal communication service – Authentication & security.

General Packet Radio Service (GPRS)

Introduction – GPRS & Packet data network – Network architecture – Network operations – Data Services – Applications – Limitations – Billing & Charging – EDGE.

UNIT – IV: Wireless Application Protocol (WAP)

Introduction – WAP – MMS – GPRS –Applications. **CDMA and 3G:** Spread Spectrum Technology – IS-95 – CDM Aversus GSM – Wireless data – Third generation networks - Applications on 3G.

UNIT – V: Wireless LAN

Advantages – IEEE 802.11 standards – Wireless LAN Architecture – Mobility – Deploying – Mobile Ad hoc networks and Sensor networks – Wireless LAN - Security – Wireless access in Vehicular environment- Wireless local loop – Hiper LAN – WIFI versus 3G.

Security Issues in mobile computing

Information Security – Security techniques and algorithms – Security Protocols – Public key infrastructure – Trust – Security models – Security Frameworks for mobile environment.

Suggested Topics for Group Discussion / Presentation:

- ✓ Developing Mobile Computing Applications
- ✓ Mobile Computing through Telephone
- ✓ GSM Frequency Allocation
- ✓ Applications on 3G
- ✓ Security issues

Suggested Readings:

i) Text Book:

Asoke k Talukder, Hasan Ahmed, Roopa R Yavagal, **Mobile Computing - Technology, Applications and Service Creation**, Second Edition, Tata McGraw Hill, New Delhi,2012.

ii) Reference Books:

1. Jochen Schiller, **Mobile Communications**, 2nd Edition, Pearson Education, Delhi, 2003.
2. William Stallings, **Wireless Communications and Networks**, 2nd Edition, Pearson Education, Delhi, 2004.

iii) Web Sources:

1.https://www.cet.edu.in/noticefiles/270_Lecture%20note%20@%20MC.pdf

2. https://kosmi.snubi.org/APAMI/resource/Tutorials/T2-Leong.pdf

Title of the Course: Operating System **Semester: V**

Course Code: LUBCCT51 **Contact Hours: 5hrs/w** **Credits: 4**

Course Learning Outcomes:

On Completion of the course, the students are able to

- know the role of OS in their management policies and algorithms.
- understand the process management policies and scheduling of process by CPU.
- evaluate the requirement for process synchronization.
- describe and analyze the memory management and its allocation policies.

Pre – Required Knowledge:

- ✓ Basics of Operating System services
- ✓ Basics of Hardware and Software
- ✓ Basics of Computer Memory Management

Unit I: Introduction

Definition - Mainframe, Multiprocessor, Distributed, Clustered, Real-Time, Hand held systems - I/O Structure-Storage Structure-Hardware Protection-Network Structure.

Unit II: System Components

Operating System Services-System Calls-System Program-System Structure-Process Scheduling – Operations-Cooperating Processes – Inter process Communication-Communication in Client-Server Systems – **Threads** – Overview-Multithreading Models-**CPU Scheduling**-Basic Concepts-Scheduling Criteria – Scheduling Algorithms-Multiple-Processor Scheduling –Real-Time Scheduling-Algorithm Evaluation.

Unit III: Process Synchronization

Critical-Section Problem-Synchronization Hardware – Semaphores-Classic Problems of Synchronization-Critical Regions – Monitors-Deadlocks Characterization-Prevention – Avoidance – Detection-Recovery from Deadlock.

Unit: IV: Memory Management

Swapping-Contiguous Memory Allocation – **Paging** – Segmentation-Segmentation with Paging-Demand Paging-Process Creation – Page Replacement-File Concepts-Access Methods-Directory Structure-Allocation Methods – Free Space Management.

Unit: V: Mass Storage Structure

Disk Structure-Disk Scheduling-Disk Management – Swap-Space Management-**Case Study:** Windows 2000 – History-Design Principles-System Components-Networking.

Suggested Topics for Group Discussion / Presentation

- ✓ Network Structure
- ✓ Threads
- ✓ Deadlock
- ✓ Paging
- ✓ Windows 2000

Suggested Readings:

i) Text Book:

Operating System Concepts, Silberschatz A,Galvin P.B.,Gange G., Sixth Edition,John Wiley & Sons, 2008.

ii) Reference Books:

1. **Operating Systems,** Deitel and Deitel, 3rd Edition, Pearson Education,2011
2. **Operating Systems-**E.Madnick And John J.Donavan, Tata Mcgraw Hill Book Company Ltd, 2008

iii) Web Sources:

1. https://www.tutorialspoint.com/operating_system/index.htm
2. https://www.javatpoint.com/os-tutorial
3. https://www.studytonight.com/operating-system/
4. https://www.geeksforgeeks.org/operating-systems/
5. https://www.tutorialandexample.com/operating-system-tutorial/

Title of the Course: Mobile Application Development		**Semester: V**
Course Code: LUBCCT52	**Contact Hours: 6hrs/w**	**Credits: 5**

Course Learning Outcomes:

On completion of the course, the students are able to

- know the introduction of Android, the manifest file, downloading with Installation of Android and executing the First Android Application.
- understand the use of activities, fragments and intents in Android, working with user interface using views and view groups, and binding data with the adapter view class.
- develop Applications using menus and internal, external file manipulations.
- gain knowledge of SQLite database operations with android, implementation of notification in App.
- know the network concepts in android Applications

Pre – Required Knowledge:

- ✓ Basic concept of Android applications
- ✓ Basic concept of Programming
- ✓ Basic concept of Networking

Unit-I: Getting an Overview of Android

Introducing Android–Discussing about Android Applications –The Manifest File–Downloading and Installing Android–Exploring the Development Environment–Developing and Executing the First Android Application. Using Activities, Fragments and Intents in Android: Working with Activities.

Unit-II: Using Intents

Exploring Intent Objects- Exploring Intent Resolution-Exploring Intent Filters- Resolving Intent Collision-Linking Activities using Intent-Passing Data Using Intent Object-Fragments-Fragment Implementation-Finding Fragments-Adding, Removing and Replacing Fragments- Working with User Interface Using Views and View Groups : Working with View Groups – Layouts - Working with Views –Binding Data with the Adapter View Class.

Unit-III: Working with User Interface Using Views and View Groups

Handling UI Events – Specialized Fragments – Creating Menus- Storing the Data Persistently: Introducing the Data

Storage Options – Using the Internal Storage–Using the External Storage

Unit-IV: Storing the Data Persistently

Using the SQLite Database-Working with Content Providers – Notifying the user – Creating Toast Notification-Creating Status Bar Notification-Creating Dialog Notification

Unit-V: Emailing and Networking in Android

Building an Application to send Email-Networking in android-Checking Network availability-Accessing Web Services using HTTP POST and GET Method- Working with binary data and Text Files-Consuming JSON Services-Socket Programming.

Suggested Topics for Group Discussion / Presentation

- ✓ Android Applications
- ✓ Fragments
- ✓ Data Storage Options
- ✓ SQLite Database
- ✓ Networking in Android

Suggested Readings:

i) Text Books:

Pradeep Kothari**, Android Application Development Black book**, dream Tech, 2020.

ii) Reference Books:

1. Jakob Iversen Michael Eierman-2014, **A Hands-on Guide to Building Apps with iOS and Android** , Pearson Education
2. J. Paul Cardle, 2017, **Android App Development in Android Studio Java + Android Edition for Beginners**, Manchester Academic Publisher

iii) Web Sources:

1. https://en.wikipedia.org/wiki/Android_(operating_system).html
2. https://developer.android.com/guide/components/fragments.html

3. https://www.tutorialride.com/android/android-graphics.htm

Title of the Course: Mobile Application Development – Practical **Semester: V**

Course Code: LUBCCL51 **Contact Hours: 6hrs/w** **Credits: 4**

Course Learning Outcomes:

On completion of the course, the students are able to

- know the Installation of Android and executing the First Android Application, implementing fragments.
- apply intent among the activities, Building App with different widgets.
- construct App for File manipulations through Event handling.
- develop App with SQLite database operations and notifications.
- implement the java networking concepts in App, Accessing mail from Android App.

Programs:

1. Create “Hello World” application. That will display “Hello World” in the middle of the screen In the green color with white background.
2. Write the code to display the sum of two numbers.
3. Write the code to check which toggle button is ON/OFF.
4. Write the code to display the rate of the selected food item by using checkbox.
5. Write the code to create and show the Alert Dialog.
6. Write the code to display it e month e spinner and perform event handling.
7. Write the code for simple implicit in tent that displays a webpage.
8. Simple option menu example that contains three menu items.

9. Write the code to display the context menu on press of the list view.
10. Simple option menu example that Create sample application with login module. (Check user name and password)
11. On successful login, go to next screen. And on failing login, alert user using

1. Toast. Also pass username to next screen.

12. Create an application that will change color of the screen, based on selected options from the menu.
13. Demo App for file Manipulations
14. Android with SQLite database operations
15. Android App for accessing Mail
16. Android App for utilizing JSON objects.

Web Sources:

1. http://www.jbiet.edu.in/coursefiles/Mobile-Application Development.pdf

2. https://jnec.org/lab-manuals/cse-lab-manual.html

Title of the Course: Software Engineering		**Semester: V**
Course Code: LUBCCT53	**Contact Hours: 4hrs/w**	**Credits: 4**

Course Learning Outcomes:

On completion of the course, the students are able to

- understand the softwa re crisis, myths, basics of software engineering, its phases of development etc.
- gain Knowledge of ERD, DFD, Design Methods and architectural views
- know the Testing strategies, different methods and Testability concept is provided to the students.
- know all maintenance concepts, types of changes, maintenance side effects with the idea of software re-engineering.

Pre – Required Knowledge:

- ✓ Basics of Software Development Life Cycle

- ✓ Basics of Databases
- ✓ Basics of Networking

Unit I: Introduction

Software - Software Crisis - Software Myths – Process and Product - Software characteristics- SDLC Introduction

Unit II: Software requirements specification

Approaches – Paradigms – Build and Fix - Waterfall – Prototyping – Spiral – Concurrent – RAD – Incremental – Agile Introduction.

Unit III: Analysis Modelling

Elements of Analysis Model - Data Modelling - ERD – DFD - Data Dictionary.

Introduction to Design concepts - Design Architecture, Design characteristics, Description, Principles. Object oriented diagrams - Class diagrams - Use Case Diagrams – State-transition diagrams – Object diagrams – Interaction diagrams – UML Modelling.

Unit IV: Software Testing Fundamentals

Objectives of Testing - Testing Principles – Testability - Testing Process and Methods – Introduction to Testing Strategies.

Unit V: Software Maintenance

Reverse Engineering and Reengineering

Suggested Topics for Group Discussion / Presentation

- ✓ Process and Product
- ✓ RAD
- ✓ UML Modelling
- ✓ Testing Strategies
- ✓ Reverse Engineering

Suggested Readings:

i) Text Book:

Roger S. Pressman, **"Software Engineering",** Tata McGraw-Hill Publishing Company Pvt. Ltd, Sixth Edition,2000.

ii) Reference Books:

1. Rajib Mall, **"Fundamentals of Software Engineering",** 4th Edition, Prentice Hall of India Private Limited, 2014.
2. Richard Fairley, **"Software Engineering Concepts",** TMGH Publications, 2004.
3. Shooman, **"Software Engineering",** Tata McGraw-Hill Publishing Company, Pvt. Ltd, 1987

iii) Web Sources:

1. https://www.tutorialspoint.com/software_engineering/software_engineering_quickguide.htm
2. http://moodle.autolab.unipannon.hu/Mecha_tananyag/szoftverfejlesztesi_folyamatok_angol/ch13.html
3. https://www.tutorialspoint.com/software_testing/software_testing_tutorial.pdf

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Title of the Course: Full Stack Technology **Semester: V**

Course Code: LUBCDS51 **Contact Hours: 4hrs/w** **Credits: 4**

Course Learning Outcomes:

On completion of the course, the students are able to

- know the various HTML tags and design simple web pages
- develop basic skills in website creation
- experiment with open source technologies such as HTML, CSS, Bootstrap, jQuery, Nodejs
- implement static, dynamic and interactive web pages and web applications.
- build web app development

Pre – Required Knowledge:

- ✓ Basic HTML Tags
- ✓ Basics of CSS
- ✓ Basics of Scripting language

UNIT – I: HTML & CSS

HTML Basics – HTML Headings – HTML Paragraphs – Styles – Formatting – Quotations – Computer Code – Comments – Colors – Links and Images – Tables – Lists. CSS: CSS Backgrounds – Text – 2D and 3D transforms – Tables – Dropdowns – Buttons – Filters.

UNIT – II: Bootstrap

Introduction – Bootstrap basics – Bootstrap Grids – Bootstrap Themes – Bootstrap CSS – Bootstrap JS.

UNIT – III: jQuery

Introduction to jQuery – jQuery Syntax – jQuery Selectors – jQuery Events – jQuery Effects – jQuery Traversing.

UNIT – IV: Angular

Introduction to Angular – Angular Components – Data Binding – Types of Data Binding – Angular Server Communication with Back End Server.

UNIT – V: Nodejs

Introduction to Nodejs – Architecture of Nodejs Application – Call back function in Nodejs – GET, POST, PUT, DELETE - Create the E-Commerce Back end.

Suggested Topics for Group Discussion / Presentation

- ✓ HTML Lists and Tables
- ✓ Boostrap Themes
- ✓ jQuery Effects
- ✓ Types of Data Binding
- ✓ Call back function in Nodejs

Suggested Readings:

i) Text Book:

"Web Design with HTML, CSS, JavaScript and jQuery Set", Jon Duckett, Wiley Publications, 2014

ii) References Book:

"The Full Stack Developer", Chris NorthWood, Apress Publications, 2018.

iii) Web Sources:

1. https://www.geeksforgeeks.org/web-technology/
2. https://www.javatpoint.com/
3. https://www.tutorialspoint.com/
4. https://www.w3schools.com/

Title of the Course: Ethics in Information Security		**Semester: V**
Course Code: LUBCDS52	**Contact Hours: 4hrs/w**	**Credits: 4**

Course Learning Outcomes:

On completion of the course, the students are able to

- analyze the broad perceptive of information SECURITY
- know the need of information security
- illustrate the Risk control strategies and Risk Management
- analyze the tools for biometric access

Pre – Required Knowledge:

- ✓ Basic concept of Information security
- ✓ Basics of Threats and Attacks
- ✓ Basics of Biometrics

Unit I: Introduction to Information Security

History, what is Information Security? - Components of an Information System- Balancing Information Security and-Access- The Systems Development Life Cycle-The Security-Systems Development Life Cycle- Security Professionals and Organization.

Unit II: The Need for Security

Business Needs- Threats-Attacks-Secure Software Development - Legal-Professional and Ethical Issues.

Unit III: Risk Management

Risk Assessment- Risk Control Strategies- Selecting Risk Control Strategies-Quantitative versus Qualitative Risk Control Strategies- Risk Management Discussion Points.

Unit IV: Planning for Security

Information Security Planning and Governance- Information Security Policy- Standards and Practices- Information Security Blueprint- Security Education- Training and Awareness Program- Continuity Strategies.

Unit V: Security Technology

Intrusion Detection and Prevention Systems- Scanning and Analysis Tools-Biometric Access Control- Cryptographic Methods- Algorithms.

Suggested Topics for Group Discussion / Presentation

- ✓ System Development Life Cycle
- ✓ Threats and Attacks
- ✓ Risk Assessment
- ✓ Information Security Blueprint
- ✓ Cryptographic Methods

Suggested Readings:

i) Text Book:

Michael E Whitman and Herbert J Mattord, **"Principles of Information Security"**, 6th Edition, Course Technology, Cengage Learning, 2017.

ii) Reference Books:

1. Micki Krause, Harold F. Tipton, "Handbook of Information Security Management", Vol 1-3 CRC Press LLC, 2004 (Reprint 2009)
2. Stuart McClure, Joel Scrambray, George Kurtz, "Hacking Exposed", Tata McGraw-Hill,2017.

iii) Web Sources:

1.https://www.techopedia.com/definition/10282/information-security

2.https://bedford-computing.co.uk/learning/wp-content/uploads/2016/08/Principles-of-Information-Security-4th-ed.-Michael-E.-Whitman.pdf

Title of the Course: Full Stack Technology – Practical		Semester: V
Course Code: LUBCSL51	Contact Hours: 3hrs/w	Credits: 2

Course Learning Outcomes:

On completion of the course, the students are able to

- develop basic skills in website creation
- experiment with open source technologies such as HTML, CSS, Bootstrap, jQuery, Nodejs
- implement static, dynamic and interactive web pages and web applications.
- build web app development

Programs:

1. HTML Formatting
2. HTML Lists
3. HTML Tables
4. CSS3 Animations
5. CSS3 2D transforms
6. CSS3 3D transforms
7. Bootstrap Grids
8. Bootstrap Themes
9. jQuery Events
10. jQuery Effects
11. jQuery AJAX and Misc
12. Mongodb with Nodejs
13. Create the E-Commerce Back end
14. Design the schema in Nodejs

Web Sources:

1. www.w3schools.com
2. www.simplilearn.com/fullstack/developer

Title of the Course: Open Source Technology – Practical		Semester: V
Course Code: LUBCSL52	Contact Hours: 3hrs/w	Credits: 2

Course Learning Outcomes:

On completion of the course, the students are able to

- develop the programming skills using PHP.

- develop technical solutions for problems using the open source software's readily available at free of cost.
- know how to install WampServer.
- know the programming in PHP

Programs:

1. Create a simple HTML form and accept the user name and display the name through PHP echo statement.
2. Write a PHP script to redirect a user to a different page.
3. Write a PHP function to test whether a number is greater than 30, 20 or 10 using ternary operator.
4. Create a PHP script which display the capital and country name from the given array. Sort the list by the name of the country
5. Write a PHP script to calculate and display average temperature, five lowest and highest temperatures.
6. Create a script using a for loop to add all the integers between 0 and 30 and display the total**.**
7. Write a PHP script using nested for loop that creates a chess board.
8. Write a PHP function that checks if a string is all lower case.
9. Write a PHP script to calculate the difference between two dates**.**
10. Write a PHP script to display time in a specified time zone.

Reference Book:

"Open Source Technology", Kailesh vadera, Bhavyesh Gandhi, Laxmi Publications, 2022.

Title of the Course: Biometrics		**Semester: V**
Course Code: LUBCSC51	**Contact Hours: 0**	**Credits: 2**

Course Learning Outcomes:

On completion of the course, the students are able to

- understand the state-of-the-art in biometric technologies.
- understand the survey the currently available biometric system.
- learn and implement some of the biometrics authentication.

Pre – Required Knowledge:

- ✓ Basics of finger print
- ✓ Basic of Eye Biometrics
- ✓ Basic of Liveness Testing

Unit- I: How authentication technology works

What you Know - What you have - What you are - Multifactor authentication - Subverting the system - Deploying authentication system - Economics of authentication - **How biometrics work:** Why use Biometrics? - Key elements of Biometrics.

Unit – II: Finger print and Hand Geometry

History of fingerprints - History of Hand geometry. **Facial and Voice Recognition Facial Recognition**: Application – Technologies. **Voice verification:** History- Applications - Other related software resources and technologies.

Unit – III: Eye biometrics

Iris scanning – Iris Recognition Technology - Applications – Retina scanning –Applications - Signature recognition – Applications - Key stroke dynamics – History - Applications.

Unit – IV: Esoteric biometrics

Vein pattern – DNA - Facial Thermography - Sweat pores – Hand grip - Fingernail bed - Body odour – Gait – Ear - Skin Luminescence - Brain wave pattern - Footprint and foot dynamics.

Unit – V: Biometrics liveness testing

Liveness testing – Difficulties. **Biometrics in large scale system:** Documenting the procurement process - Specifying the systems. **Biometrics testing and evaluation:** Best practices for Biometric testing - Types of testing.

Suggested Topics for Group Discussion / Presentation:

- ✓ Key elements of Biometrics
- ✓ History of Hand Geometry
- ✓ Retina Scanning
- ✓ Facial Thermography
- ✓ Biometric Testing

Suggested Readings:

i) Text Book:

John D. Woodward, Jr. Nicholas M. Orlans, Peter T. Higgins, **Biometrics - The Ultimate Reference**, Dream Tech. Publishers, New Delhi, 2003.

ii) Reference Books:

1. Paul Reid, **Biometric for Network Security,** Prentice Hall Professional, New Jersey,2004.
2. Ratha, N.K. Govindaraju, **Advances in Biometrics**, TMH, New Delhi, 2008.

iii) Web Sources:

1.https://www.tutorialspoint.com/biometrics/biometrics_quick_guide.htm

2.https://users.ece.cmu.edu/~jzhu/class/18200/F06/L10A_Savvides_Biometrics.pdf

3. https://www.javatpoint.com/types-of-biometrics

Title of the Course: Digital Image Processing		**Semester: V**
Course Code: LUBCSC52	**Contact Hours: 0**	**Credits: 2**

Course Learning Outcomes:

On completion of the course, the students are able to

- ➢ know the fundamental techniques and algorithms used for acquiring, processing and extracting useful information from digital images and used for image sampling and quantization
- ➢ understand the meaning of spatial domain processing, and how it differs from transform domain processing.

- gain knowledge of basic idea of Color Image Processing Fundamentals and Smoothing and Sharpening.
- know the basic concepts of mathematical morphology, and how to apply them to digital image processing and with the tools used for binary image morphology, including erosion, dilation, opening, closing, and how to combine them to generate more complex tools

Pre – Required Knowledge:

- ✓ Basics of image and pixel
- ✓ Basics of Set Theory and Algorithms
- ✓ Basics concept of image processing

UNIT I: Digital Image Fundamentals

The Origins of Digital Image - Fundamental Steps in Digital Image Processing -Elements of Visual Perception - Light and the Electromagnetic Spectrum. - Image Sensing and Acquisition. - Image Sampling and Quantization. - Some Basic Relationships between Pixels.

UNIT II: Intensity Transformations and Spatial Filtering

Some Basic Intensity Transformation Functions - Histogram Processing - Fundamentals of Spatial Filtering - Smoothing (Lowpass) Spatial Filters - Sharpening (Highpass) Spatial Filters.

UNIT III: Color Image Processing

Color Fundamentals. - Color Models. - Pseudocolor Image Processing. - Basics of Full-Color Image Processing. - Color Transformations. – Smoothing and Sharpening. - Color Segmentation.

UNIT IV: Morphological Image Processing

Preliminaries - Erosion and Dilation - Opening and Closing - The Hit-or-Miss Transform - Some Basic Morphological Algorithms - Morphological Reconstruction

UNIT V: Image Segmentation

Fundamentals - Point, Line, and Edge Detection - Thresholding - Segmentation by Region Growing and by

Region Splitting and Merging – Region Segmentation Using Clustering and Super pixels.

Suggested Topics for Group Discussion / Presentation:

- ✓ Image Sampling and Quantization
- ✓ Fundamentals of Spatial Filtering
- ✓ Color Segmentation
- ✓ Erosion and Dilation
- ✓ Thresholding

Suggested Readings:

i)Text Book:

R.C. Gonzalez, R.E.Woods, 2018, Digital Image processing, 4th edition, Pearson Education, 2016

ii) Reference Books:

1. Pratt. W.K., 2014, Digital Image Processing, 1st edition, John Wiley & Sons.
2. Chanda, BhabatoshMajumder, DwijeshDutta 2011 Digital Image Processing And Analysis 1st Edition, PHI
3. Annadurai, Shanmuga Lakshmi, 2007, Fundamentals of Digital Image Processing, Pearson Education.

iii) Web Sources:

1. https://www.tutorialspoint.com/dip/image_processing_introduction.htm
2. http://ultra.sdk.free.fr/docs/DxO/Fundamentals%20of%20Digital%20Image%20Processing.pdf
3. https://www.geeksforgeeks.org/digital-image-processing-basics/
4. https://www.javatpoint.com/digital-image-processing-tutorial

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DEPARTMENT OF ENGLISH – UG – CBCS-LOCF

Title of the Course: COMMUNICATIVE ENGLISH-I **Semester: V**

Course Code: LUENNM51 **Contact Hours: 2hrs/w** **Credits: 2**

Course Learning Outcomes:

On completion of the course, the students are able to

- understand the role of communication in personal and professional success
- have comprehensive application- knowledge of appropriate communication strategies
- apply appropriate communications skills across settings and purposes
- respond effectively to various communicative demands
- build and maintain effective relationship by demonstrating appropriate, professional and ethical behaviour

Pre-required Knowledge:

- Functional grammatical knowledge
- Spoken idioms
- Working knowledge of language skills

Unit I: Listening

Introducing oneself, At a Bank-II, At a Hotel Reception Hall, Helping a friend obtain a Rental Flat-I, At the Restaurant, Visiting a Doctor with One's Parent, Attending an Interview, Visiting a Friend in the Hospital-I, Present water Crisis in Chennai, Attending a career Guidance Fair-I.

Unit II: Speaking I

Greeting, Introducing, Inviting someone, Making requests, Offering help, Seeking permission, Asking for advice, Expressing gratitude, Asking about remembering.

Unit III: Speaking II

Persuading, Complimenting / Congratulating, Expressing Sympathy, Complaining, Apologizing, Making suggestions, Warning someone.

Unit IV: Writing

Writing Paragraphs, Writing Telegrams, Writing Letters, Writing Short Notices and Notes, Précis Writing and Note-making.

Unit V: Career Skills

Preparing Curriculum Vitae and Cover letters, Facing an Interview, Presentation Skills and Persuasion Skills

Suggested Topics for Presentation:

- Introduce yourself in bank and hotel
- Invite your friends for your birthday party.
- Congratulate your sister on her passing IAS exam.
- Ways, means and methods of professional writings.
- Prepare a CV for the post of Teacher in educational institution.
- Mock interview and mock presentation.

Suggested Readings:

i)Text Books:

1. Adair, John. *Effective Communication*. London: Pan Macmillan Ltd., 2003.
2. Balan, Jayashree. Ed. *Spoken English*. Chennai: Vijay Nicole Imprints Pvt.Ltd., 2006.

ii) Reference Books:

1. Bose,M.N.K. Ed. *Better Communication in Writing*. Madras: New Century Book House (P) Ltd, 2004.
2. Pillai G. Radhakrishna and Rajeevan. Ed. *Spoken English For You*. Chennai: Emerald Publishers, 2002.
3. Ramani, S. Ed. Write English without formal grammar.

iii) Web Sources:

1.https://www.careertipstogo.com/career-basics/

2.http://mystarjob.com/articles/story.aspx?file=/2013/6/22/mystarjob_careerguide/13226186&sec=mystarjob_caree

3.https://www.indeed.com/career-advice/interviewing/prepare-for-a-mock- interview

Title of the Paper: Fundamentals of Accounting **Semester: V**
Course Code: LUCONM51 **Contact Hours: 2hrs/w** **Credit: 2**

Course Learning Outcomes:

On completion of the course, the students are able to

- understand the use accounting rules.
- record business transactions in Journal and Ledger.
- prepare Subsidiary books.
- drawing up a trial balance.
- prepare the Final Accounts and Balance Sheet of Sole Traders

Pre required Knowledge:

1. Transactions and Golden Rules of Accounting
2. Book Keeping
3. Final Accounts

Unit- I: Accounting and Book-Keeping

Definition of Accounting and Book – Keeping- Double Entry System - Advantages and disadvantages - Types of Accounts -Rules of Accounting.

Unit-II: **Journal**-Simple and Compound entries (Simple transactions only) -Ledger.

Unit-III: Subsidiary Books

Purchase Book, Purchase Returns Book, Sales Book, Sales Returns Book and Cash Book (Single Column Only – Simple Problems).

Unit- IV: Trial Balance

Meaning – Objectives – Methods – Format - Drawing up a Trial Balance (Simple Problems Only).

Unit- V: Final Accounts

Trading Account – Profit and Loss Account – Balance Sheet - Simple Adjustments (Closing Stock, Depreciation, Bad Debts, Outstanding Expenses and Prepaid Expenses – Simple Problem Only)

Suggested Topics/Practical Exercises:

The Learners are required to

- ✓ classify the types of accounts using golden rules of accounting.
- ✓ prepare Journal with imaginary values.

- ✓ list the various subsidiary books in small organization.
- ✓ draw a Trial Balance with imaginary figures of a sole trader.
- ✓ prepare the financial statements using any three adjustments.

Suggested Readings:

(i) Text Books

1. Dr.Peer Mohammed (2020). Financial Accounting –I. Madurai: PASS Publications.
2. P.C.Tulsian (2018). Financial Accounting. New Delhi: Pearson Education Publisher.

(ii) Reference Books:

1. Arulanandam. M.A. & Raman K.S. (2018) Advanced Accountancy (Part – I), Mumbai: Himalaya Publishing House.
2. Dr. Maheshwari.S.N. (2019). Advanced Accountancy (Vol–I). New Delhi: Vikas Publishing House Private Limited.
3. Jain.S.Pand Narang.K.L. (2020).Advanced Accountancy. (Vol–I), New Delhi:Kalyani Publishers.
4. Reddy.T.S. &Murthy.A (2020). Financial Accounting. Chennai:Margham Publications.
5. Gupta R.L.&Radhaswamy.M. (2019). Advanced Accountancy. (Vol-I).New Delhi: Sultan Chand & Sons.

(iii) Web-Sources:

1. www.icai.ac.in
2. www.financial accounting.ac.in
3. wwwicwai.ac.in

Note: The questions be asked in the ratio of **70%** for problems and **30%** for theory.

DEPARTMENT OF ECONOMICS – UG – LOCF – SF

Title of the Course: Economics for Competitive Examinations

Semester: V

Course Code:LUECNM51 Contact Hours:2hrs/w Credits:2

Course Learning Outcomes

On completion of the course, the students are able to

- trace the history of economic planning in India.
- elucidate India's policy towards Natural resources.
- evaluate the demographic features of India.
- make a critical appraisal of food security problem in India
- demonstrate the role of NABARD, Co operative Banks and RRBs in providing rural credit in India.

Pre- required Knowledge

- Literacy rate, Life expectancy and IMR.
- Women empowerment
- Absolute poverty and Relative poverty.

Unit I: Economic Development and Planning

National Income - Various committees on National Income estimation - Measures of Economic Development (PQLI, HDI, HPI and GDI) - National Income as a measure of welfare - Green Revolution and agriculture development - History of Economic planning in India - Planning Commission Vs NITI Aayog.

Unit II: Natural Resources of India

Land Utilisation pattern - Forest resources: Area under forest, Forest Policy of 2020 - Water Resources: Atal mission for Rejuvenation and Urban Transformation 2.0 (AMRUT 2.0) - Water Policy of 2021 - Marine and Inland fisheries - Mineral resources and Mineral policy of 2019.

Unit III: Population and Poverty

Population growth in India - Demographic features of India - India's Population Policy – Trends in poverty in India - Poverty Eradication programme (IRDP, PMGAY, MGNREGA).

Unit IV: Food Security in India

Food Security - Food self sufficiency and Food security in India - State-wise area production and yield of food grains - Growth of India's food production in the world context and food security –Public Distribution System and Food security.

Unit V: Rural Credit in India

Sources of credit for Indian Farmers - Multi-agency Approach in Rural Finance –Land Development Banks - Short term rural credit - Long term rural credit- Lead Bank Scheme – Regional Rural Banks- NABARD and Rural credit - Cooperative Banks - Commercial Banks and Rural Credit.

Suggested topics for group discussion/ Presentation

1. Human Development Index (HDI) is a comprehensive measure of economic development
2. Water is an economic commodity
3. Integrated Rural Development Progeamme (IRDP) failed in India.
4. Targetted PDS is preferable to Universal PDS
5. Lead Bank scheme provides sufficient credit for agriculture in India.

Suggested Readings:

Text Books:

1. Ramesh Singh (2019), Indian Economy for Civil services, Universities and other Examinations, McGraw Hill Education, New Delhi.
2. Misra and Puri, (2019), Sectoral Problems of Indian, Economy, Himalayas Publishing House.
3. Rudder Datt and Sundaram, (2018), Indian Economy, S. Chand, New Delhi.

Reference Books:

1. Francis Cherunilam, (2019) International Trade and Export Management, Himalaya Publishing House.

2. Uma kapila (Ed.) (2018), Indian Economy since independence, Academic Foundation, New Delhi, 29th edition.
3. Gupta. K. R and Manoranjansharma (2018) , Indian Economic Policies and Data
4. McGraw Hill Publications
5. Abhijit, V. Banerjee et al. (2017), poverty and income distribution I India, juggernaut, New Delhi
6. Prakash B.A (2009), The Indian Economy since 1991, Edited Book, Pearson Education New Delhi.

Web Sources:

1. https://www.investopedia.com/terms/g/gross-national-income-gni.asp
2. https://en.m.wikipedia.org/wiki/Poverty
3. https://en.m.wikipedia.org/wiki/Food_security

DEPARTMENT OF BUSINESS ADMINISTRATION – UG – CBCS – LOCF

Title of the Paper: Business Management **Semester: V**

Course Code: LUBBNM51 **Contact Hours: 2hrs/w** **Credit: 2**

Course Learning Outcomes:

On completion of the course, the students are able to

- understand the concepts related to business management
- implement planning and decision making
- analyze effective application of PPM knowledge to diagnose and solve organizational problems
- familiar with theories of motivation
- identify the concept of control and principles of co-ordination

Pre-required knowledge:

- ✓ Division of work
- ✓ Authority and Responsibility
- ✓ Unity of Command

Unit- I: Introduction to Business Management

The Development of Management Thought – Contributions of F.W. Taylor. Henri Fayol – Elton mayo and Mary Parker Follet.

Unit- II: Planning

Planning – Nature – Purpose – Steps – Types – Merits and Demerits of Planning – MBO.

Unit -III:Organising

Organising–Nature–Purpose–Departmentation–Span of Control–Delegation–Centralisation and Decentralisation – Line and Staff – Committees. Staffing – Nature and Purpose of Staffing – Components of Staffing.

Unit -IV: Directing

Directing – Principles of Directing – Leadership – Motivation – Communication – Process of Communication – Barriers of Communication – Effective Communication.

Unit -V: Controlling

Controlling – Concept of Control – Methods of Controlling. Co-ordinating – Need – Principles – Approaches to Achieve Effective Co-ordination.

Suggested Topics / Practical Exercises:

The Learners are required to

- ✓ narrate the responsibilities of managers
- ✓ brief a business plan in their interested area
- ✓ analyze and understand the organizational needs
- ✓ discuss the traits of a successful leader
- ✓ co-ordinate the seminar conducted by the department

Suggested Readings:

i) Text Book:

1.Prasad.L.M. - Principles of Management

ii) Reference Books:

1. Harold Koontz and O'Donnel,(2011) Principlesof Management. Newdelhi: S.Chand Sons

2. Newman and Warrann, (2011) The Process of Management. Newdelhi: S.Chand Sons
3. Peter F. Drucker, (2017). Practice of Management Newdelhi: S.ChandSons
4. LiousA.Allen. *2014). Management and Organisation. Newdelhi: S.ChandSons
5. Dr.RubaGunaseelan and Dr.Kulandaisamy.V.(2011),Principles and Practice of Management. Newdelhi: S.ChandSons.

iii) Web Sources:

1. http://www.kfupm.edu.sa › library › BusinessElGar
2. https://freepdf-books.com › business-management-hand
3. https://www.infobooks.org › ... › Business Administration
4. https://www.springernature.com › ebook-collection › b...
5. https://collegelearners.com › ebooks › introduction-to-b...

DEPARTMENT OF NCC – UG - CBCS - LOCF

PART IV - NON MAJOR ELECTIVE

Title of the paper: NCC - 1 **Semester: V**

Course code: LUNCNM51 **Contact Hours: 2hrs/w** **Credits : 2**

Course Learning Outcomes

On Completion of this Course, the students are able to

- outline the organizational structure and dynamics of NCC
- elaborate various aspects of National Integration
- admire the braveness of Indian war heroes
- illustrate the functioning of Civil defense
- apply the principles of First Aid during emergencies

Pre–required Knowledge:

- ✓ Understanding about NCC organization.
- ✓ Understanding the Military History and Civil Defence.
- ✓ Skills in Disaster Management, First Aid and to inculcate Patriotism through national Integration.

Unit – I: NCC-Overview

NCC Organization – Levels (From Company to Directorate), History of NCC Organization, Role of NCC in India, Division of NCC, Motto and Cardinal Points – NCC Song.

Unit – II: National Integration

National Integration – Meaning – Motto – Importance – Components – Factors affecting National Integration - Religion, Culture and Heritage of India – Challenges and threats to National Integration – Contribution of NCC to National Integration.

Unit – III: Military History

Military History – Basic Organization of Indian Armed Forces – Biographies of Renowned Generals (in brief) – Field Marshal K M Cariappa, Field Marshal SHFJ Maneksha, Marshal of the Air Force Arjun Singh – Famous Battles / Wars of India – Indo-Pak war 1971 &Kargil war 1999.

Unit – IV: Civil Defense and Disaster Management

Civil Defense and Disaster Management – Civil defense Organization and its duties – Aid to Civil authorities – Organization of Home guard – Types of emergencies / Natural disasters – Fire Services and Firefighting – Traffic Control during disaster under police supervision – Assistance during Natural Calamities: Flood/Cyclone/Earth Quake/Accident etc. – Collection and Distribution of Aid Materials.

Unit –V: First Aid

First Aid – Structure and Functioning of a human body – Hygiene and Sanitation – Physical and Mental health – Infectious, Contagious diseases and its prevention Wounds and Fractures.

Suggested Topics/ Practical Exercises

- knowing higher officials of NCC in National and State level.
- applying knowledge on National Integration in challenges.

- recognise the techniques in wars like Indo-Pakistan war and Kagil war etc.,
- apply the role of NCC in disasters.
- finding the right First Aid treatment in accidents.

SUGGESTED READINGS:

i) Text Books:

1. Asthana A K, Brigadier (2015), Commandant, Precis – Kamptee.
2. NCC Guide – Army Wing, (2010). Major R. Ramasamy, Karur, Priya Publications.
3. Cadets hand book (2018) -Common subjects for SD/SW, OTA Training Materials, Kamptee.

ii) Reference Books:

1. Specialized Subject Army (2018). Govt. Of India Press, New Delhi.
2. Precis, (2009). Published by Officer Training School, Kamptee
3. Cadet's diary, Published by cadets' center, Chennai, 2000.
4. NCC: Handbook of NCC cadets, (2015). R. Gupta, Ramesh Publishing House
5. Lt. Saravanamoorthy. S.N, A hand book of NCC-Army wing (2015), Jayalakshmi publications.

iii) Web sources

1. https://indiancc.nic.in/
2. https://play.google.com/store/apps/details?id=com.chl.ncc&hl=en_IN&gl=US
3. https://joinindianarmy.nic.in/default.aspx
4. https://www.joinindiannavy.gov.in/
5. https://indianairforce.nic.in/

DEPARTMENT OF COMPUTER APPLICATIONS –UG – CBCS - LOCF - SF

Title of the Course: Internet of Things		**Semester: VI**
Course Code: LUBCCT61	**Contact Hours: 6hrs/w**	**Credits: 4**

Course Learning Outcomes:

On completion of the course, the students are able to

- understand the vision of IOT.
- use of Devices, Gateways and Data Management in IOT.
- building state of the art architecture in IOT.
- design some IOT based prototypes.
- understand the technology and standards relating to IOTs.
- build and test a complete working IOT system.

Pre – Required Knowledge:

- ✓ Basics of sensors and wireless communications.
- ✓ Basics of database concepts
- ✓ Basics of internet concepts

UNIT I: Introduction to Internet of Things

Introduction- Physical Design Of IOT- Logical Design Of IOT- IOT Levels & Deployment Templates. **Domain Specific IOT:** Introduction- Home Automation- Cities.

UNIT II: IOT and M2M

Introduction- M2M- Difference between IOT and M2M- SDN and NFV For IOT. **IOT System Management with Netconf-Yang:** Need For IOT Systems Management- Simple Network Management Protocol - Network Operator Requirements -Netconf-Yang.

UNIT III: Developing Internet of Things

IOT Platforms Design Methodology- IOT Design Methodology. IOT Physical Devices and Endpoints. **Exemplary Device**: Raspberry Pi-About The Board-Linux On Raspberry Pi-Raspberry Pi Interfaces-Other IOT Devices.

UNIT IV: IOT Architecture-State of the Art

Introduction, State Of The Art. **Architecture Reference Model**: Introduction, Reference Model And Architecture, IOT Reference Model.

UNIT V: IOT Reference Architecture

Introduction, Functional View, Information View, Deployment and Operational View, Other Relevant Architectural Views. **Real-World Design Constraints**: Introduction, Technical Design Constraints-Hardware Is Popular Again, Data Representation and Visualization, Interaction And Remote Control.

Suggested Topics for Group Discussion / Presentation

- ✓ Logical design of IOT
- ✓ Difference between IOT and M2M
- ✓ IOT physical Devices
- ✓ IOT reference model
- ✓ Technical design constraints

Suggested Readings:

i) Text Books:

1. Vijay Madisetti and Arshdeep Bahga, **"Internet of Things (A Hands-on-Approach)",** VPT, 1st Edition, 2014.
2. Jan Holler, Vlasios Tsiatsis, Catherine Mulligan, Stefan Avesand, Stamatis Karnouskos, David Boyle, **"From Machine-to-Machine to the Internet of Things: Introduction to a New Age of Intelligence",** Academic Press, 1st Edition, 2014.

ii) Reference Books:

1. Francis da Costa, "**Rethinking the Internet of Things: A Scalable Approach to Connecting Everything",** A press Publications, 1st Edition, 2013.
2. Dr. Ovidiu Vermesan, Dr.Peter Friess", **Internet of Things- From Research and Innovation to Market Deployment",** River Publishers, 2014.

iii) Web Sources:

1. https://www.tutorialspoint.com/internet_of_things/internet_of_things_tutorial.pdf
2. https://www.guru99.com/iot-tutorial.html

Title of the Course: Computer Networks		**Semester: VI**
Course Code: LUBCCT62	**Contact Hours: 6hrs/w**	**Credits: 5**

Course Learning Outcomes:

On completion of the course, the students are able to

- know the functions of each layer in OSI and TCP/IP model.
- understand the functions of Application layer and Presentation layer paradigms and Protocols.
- develop the Session layer design issues and Transport layer services.
- classify the routing protocols and analyze how to assign the IP addresses for the given network.
- know the types of transmission media with real time applications.

Pre – Required Knowledge:

- ✓ Basics of Network hardware and software
- ✓ Basics of Protocol hierarchies
- ✓ Basics of Client and Server

Unit: I: Computer Networks

Network Hardware-Network Software-Protocol Hierarchies – Layering-Interfaces, Services, Primitives-**OSI Reference Model**-**TCP/IP Reference Model**-**Physical Layer**-Transmission Media-Wireless Transmission-Switching

Unit: II: Data Link Layer

Services of DLL – Framing-Flow Control-Error Control - Error Detection Code-Error Correction Codes-DLL Protocol-Stop and Wail Protocol-Sliding Window Protocol – HDLC-DLL In the Internet

Unit: III: Network layer

Services of network layer – routing-shortest path routing algorithm-congestion control-general principles of congestion control - inter network routing-network layer in the internet-IP protocol-IP address – subnets-internet control protocol

Unit: IV: Transportation layer

Services of transportation layer – addressing-Establishing and releasing connection-flow control – buffering – multiplexing-the internet transportation protocol TCP and UDP Model-connection management-TCP connection control-UDP

Unit: V: Application layer

DNS – name space-resource-records-name servers-Email-Architecture and services-User agent-message format and transfer-USENET implementation-WWW client and server sides-locating information on the web.

Suggested Topics for Group Discussion / Presentation

- ✓ OSI Reference Model
- ✓ Stop and Wait Protocol
- ✓ Shortest Path Routing Algorithm
- ✓ TCP and UDP Model
- ✓ USENET Implementation

Suggested Readings:

i) Text Book:

Computer Networks- Andrew Tanenbaum, 4th Edition PHI, 2008

ii) Reference Books:

1. **Computer Networks**-William Stalling-PHI
2. **Computer Networks-A System Approach,** Larry L.Peterson, 4th Edition, Morgan Kaufmann, 2007

iii) Web Sources:

1. https://www.tutorialspoint.com/data_commn_computer_network/index.htm
2. https://www.guru99.com/data-commn-computer-network-tutorial.htm/

3. https://www.softwaretestinghelp.com/computer-networking-basics/
4. https://www.studytonight.com/computer-networks/
5. https://beginnersbook.com/2019/03/introduction-to-computer-network/

Title of the Course: .Net – Practical **Semester: VI**
Course Code: LUBCCL61 **Contact Hours: 6hrs/w** **Credits: 4**

Course Learning Outcomes:

On completion of the course, the students are able to

- Create applications that use ADO. NET.
- Work with XML Documents.
- Demonstrate the Crystal Reports.
- Maintain the session and controls related information for user used in multi-user web applications.
- Create multithreaded applications.

Programs:

VB.NET

1. Home Page Creation Using Menu Strip in Vb.Net
2. Bank Operation Using Inheritance
3. Storing and Retrieving a Data from Library Details Using Vb.Net
4. Search a Field Using Vb.Net
5. College Fees Manipulation Using Vb.Net
6. Create Login Page Using Vb.Net through Database Access.

ASP.NET

1. Email id validation and Login Page Creation using Build in Login and validation controls
2. Online Quiz in Asp.net
3. Online shopping in Asp.net
4. Online voting in asp.net

5. Table Creation and Manipulation Using Grid View, Detail View, Form View Controls
6. Create Library Management Details in Inserting, Updating, and Deleting Records

Reference Books:

1. David Chapples, **"Understanding .Net"**, Wiley India Pvt. Ltd, New Delhi, 2005.
2. Matthew MacDonald and Mario Szpuszta, **"Pro ASP.Net 3.5 in C#"**, Publications (India) Pvt.Ltd, Mumbai, 2008.

Title of the Course: Project & Viva-voce		**Semester: VI**
Course Code: LUBCPJ61	**Contact Hours: 4hrs/w**	**Credits: 4**

Course Learning Outcomes:

On completion of the course, the students are able to

- discover potential research areas in the field of IT
- conduct a survey of several available literature in the preferred field of study
- compare and contrast the several existing solutions for research challenge
- demonstrate an ability to work in teams and manage the conduct of the research study.
- formulate and propose a plan for creating a solution for the research plan identified
- report and present the findings of the study conducted in the preferred domain

The objective of the project is to motivate them to work in emerging/latest technologies, help the students to develop ability, to apply theoretical and practical tools/techniques to solve real life problems related to industry, academic institutions and research laboratories.

The project is of 5 Hours/week for one (semester VI) semester duration and a student is expected to do planning, analyzing, designing, coding, and implementing the project. The initiation of project should be with the project proposal.

The synopsis approval will be given by the project guides. The project work should be an individual student.

The project proposal should include the following.

1. Title
2. Objectives
3. Input and output
4. Details of modules and process logic
5. Limitations of the projects
6. Tools/platforms, Languages to be used
7. Scope of future application

For the project work, the guide (internal) evaluates the work for 50 marks based on the performance of the candidates during the development of the project and the external will evaluate the project work as follows:

1. Project Report
2. Viva-Voce

}- 50 Marks

Title of the Course: Quantitative Aptitude **Semester: VI**

Course Code: LUBCDS61 **Contact Hours: 3hrs/w** **Credits: 2**

Course Learning Outcomes:

On completion of the course, the students are able to

- interpret and Communicate quantitative information.
- Understand and Practice Quantitative Aptitude
- Understand and Practice Logical Reasoning
- Use appropriate technology.
- critique and evaluate quantitative.

Pre – Required Knowledge:

- ✓ Basics of aptitude concepts
- ✓ Basic of percentage, profit and loss concepts
- ✓ Basics of Computer terminologies

Unit – I: Quantitative Ability – I

Averages - Ratio and Proportion

Unit – II: Quantitative Ability – II

Percentages - Profit, Loss and Discount

Unit – III: Quantitative Ability – III

Time and Distance - Time and Work

Unit – IV: Quantitative Ability – IV

Permutation and Combination - Probability

Unit – V: Computer Awareness

Computer hardware parts and controls, Basic computer terminology, Basic internet knowledge and protocols, Number System, History of Computer, Network basics (LAN & WAN), Computer abbreviation, Security Tools, Virus, Hacking, Software names and usages (Microsoft Office) And Computer Shortcuts.

Suggested Topics for Group Discussion / Presentation

- ✓ Ratio and proportion
- ✓ Profit and loss
- ✓ Time and Work
- ✓ Probability
- ✓ Computer Shortcuts

Suggested Readings:

i)Text Books:

1. R.S. Aggarwal, **"A Modern Approach to Verbal and Non-Verbal Reasoning"**, S. Chand & Company Ltd, 2011 Edition, New Delhi.
2. R.S. Aggarwal, **"Quantitative Aptitude for Competitive Examinations"**, S. Chand & Company Ltd, 2012 Edition, New Delhi.
3. Donald H.Sanders, **Computer Today** – McGraw Hill, 2nd Edition.

ii) Reference Books:

1. B. S. Sijwali, ***"Quantitative Aptitude"***, Arihand Publications (India) PVTLTD, 2007.

2. Abhijit Guha, ***"Quantitative Aptitude for Competitive Examinations"***, McGraw Hill Companies, 2006.
3. **"TANCET MCA",** V.V.K. Subburaj, Sura College of Competition, 2021.

iii) Web Sources:

1. https://examsdaily.in/quantitative-aptitude-study-material
2.https:// www.technicalsymposium.com/allaptitudematerials.html

Title of the Course: Soft Skill Development		**Semester: VI**
Course Code: LUBCDS62	**Contact Hours: 3hrs/w**	**Credits: 2**

Course Learning Outcomes:

On completion of the course, the students are able to

- understand and Practice Quantitative Aptitude
- understand and Practice Logical Reasoning
- effectively communicate through verbal/oral communication and improve the listening skills
- actively participate in group discussion / meetings / interviews and prepare and deliver presentation
- acquire knowledge of more effective individual through goal/target setting, self motivation and practicing creative thinking.

Pre – Required Knowledge:

- ✓ Basic Grammar
- ✓ Basic aptitude concepts
- ✓ To introduce yourself

UNIT- I: **Communication**

Question tag – Gerund and Infinitives – Spotting the errors – Vocabulary – Synonyms –Antonyms - Prepositions – Articles – One word substitution – Sentence completion.

UNIT – II: Numerical Aptitude

Problems on numbers - Problems on Ages – Percentage - Profit and loss - Ratio &Proportion - Time & Work - Time & Distance - Simple Interest - Compound Interest.

UNIT – III: Critical Reasoning

Logical Inference Questions and Syllogism. Analytical Reasoning: Arrangement problems – Family / Blood Relation Qualms – Sense of Directions – Age Doubts. Verbal Reasoning: Verbal Analogy: Letter series - number series – Coding and Decoding.

UNIT- IV: Self Introduction

Self Introduction - Soft Skills - Interpersonal Skills – Employability Skills – Soft Skills Training –Resume Preparation – Interview Tips and Questions.

UNIT- V: Group Discussion

Group Discussion – Importance – Types of GD – GD Skills – GD Etiquette – Essential Elements of a GD– Movements and Gestures to be avoided in a GD.

Suggested Topics for Group Discussion / Presentation

- ✓ Spotting the errors
- ✓ Ratio and Proportion
- ✓ Sense of Directions
- ✓ Resume Preparation
- ✓ GD Etiquette

Suggested Readings:

i) Text Books:

1. Hari Mohan Prasad & Uma Rani Sinha, “Objective English for Competitive Examinations”, Tata McGraw Hill Education Private Ltd., (Unit – I)
2. R.S. Aggarwal, “Quantitative Aptitude”, S.Chand 2010. (Unit - II)
3. 3. R.S. Agarwal, “A Modern Approach to Verbal Reasoning (Fully Solved)” –Revised Edition, S.Chand Company Limited, New Delhi, 2012. (Unit – III)
4. M. S. Rao, “Soft Skills Enhancing Employability-Connecting Campus with Corporate”, IK International Publishing House, NewDelhi, 2010. (Unit – IV)

5. Alex.K, "Soft Skills-Know Yourself and Know the World", S.Chand Company Ltd., 2011.(Unit- V)

ii) Reference Books:

1. B. S. Sijwali, ***"Quantitative Aptitude"***, Arihand Publications (India) PVTLTD, 2007.
2. Abhijit Guha, ***"Quantitative Aptitude for Competitive Examinations"***, McGraw Hill Companies, 2006.
3. Wren and Martin, **"High School English Grammar and Composition",** Blackie ELT BOOKS, 2017

Title of the Course: Multimedia – Practical **Semester: VI**

Course Code: LUBCSL61 Contact Hours: 3hrs/w **Credits: 2**

Course Learning Outcomes:

On completion of the course, the students will be able to

- know how to create a simple animation using Flash
- create own small animation advertisement company.
- create for short films and small movies scenes.
- know how to create certificate.
- know how to create visiting card, banner, invitation, etc.

Programs:

Flash:

1. Text Animation
2. Motion Tweening
3. Motion Guide Tweening
4. Masking Technique using Text
5. Masking Technique using Images
6. Shape Tweening using Text
7. Shape Tweening using Shapes or Images.
8. Frame by Frame Animation
9. Onion Skinning
10. Button Creation

Photoshop

1. Design a Greeting Card for various occasions.
2. Coloring a given black and white image
3. Applying different filters to the images (Any 10 filters)
4. Creating a image cloning
5. Designing a Monthly calendar
6. Designing a Product Wrapper
7. Designing a Colorful visiting card
8. Designing a Banner
9. Designing an Invitation
10. Designing a Certificate

Reference Books:

1. "**Flash CS6 in simple steps",** Kogent Learning Solution, Dreamtech Press, 2013.

2. "**Photoshop CS4 in simple steps",** Dramatic Press,

Title of the Course: R-Programming – Practical		**Semester: VI**
Course Code: LUBCSL62	**Contact Hours: 2hrs/w**	**Credits: 2**

Course Learning Outcomes:

On completion of the course, the students are able to

- import functions and packages into R.
- explore the looping statements in R.
- perform appropriate Aggregate Functions.
- create and Edit Visualization of Chart in R programming.
- list Motivation for learning R programming language.

Programs:

1. To develop data types and objects.
2. To do program using control structures.
3. To do program using functions.
4. To prepare scoping rules.
5. To prepare the date and time.

6. To prepare the loop functions.
7. How to create a Bar chart and Histogram
8. To do program using Aggregate Functions.
9. To do Select(), Filter(), Arrange() and Pipeline.
10. To prepare a reading and writing a data.

Reference Book:

R programming for Beginners, Sandip Rakshit, McGraw Hill Education, 2017.

DEPARTMENT OF ENGLISH – UG – CBCS-LOCF

Title of the Course: COMMUNICATIVE ENGLISH –II **Semester: VI**

Course Code: LUENNM61 **Contact Hours: 2hrs/w** **Credits: 2**

Course Learning Outcomes:

On completion of the course, the students are able to

- understand the role of communication in personal and professional success
- have comprehensive application- knowledge of appropriate communication strategies
- apply appropriate communications skills across settings and purposes
- respond effectively to various communicative demands
- build and maintain healthy and effective relations by demonstrating appropriate and professional ethical behavior.

Pre-required Knowledge:

- Fundamental Grammatical Competence
- Working Vocabulary and Spoken idioms
- Different strategies and barriers of effective communication

Unit I: Listening

A Discussion between two friends, Booking accommodation at an outstation Hotel, Enquiring about Flight, Getting an appointment for interview over phone, At the

Library, Between a brother and sister, Attending a career guidance Fair – About Medical Transcription, About call Centre, Option in Higher Education.

Unit II: Speaking- I

Asking for information, Asking for someone's opinion, Asking if someone is sure, Asking someone to say something again, Checking that you have understood, Asking whether someone knows, Asking about Starting conversation with a Stanger.

Unit III: Speaking –II

Leaving someone for a short time, Ending a conversation, Asking possibility, Asking about preference, Asking if someone is about to do something, Asking if someone agrees, Asking if you are obliged to do something, Describing something, Some useful expressions.

Unit IV: Writing

Writing Essays, Writing Advertisements and posters, Writing Reports, Summarizing and Outlining, Information Transfer Exercise, Dialogue Writing.

Unit V: Professional Skills

Negotiating, Body Language, Group Discussion, Seminar and Public Speaking.

Suggested Topics for Presentation:

- Difference between acceptable and unacceptable sentences in English.
- Appropriateness, grammaticality and acceptability of the English language.
- To assist the students in learning the concepts of register, style and jargon as well as the various varieties of English.
- Application and use various kinds of jargons and register as per context.
- Preparing situational dialogues

Suggested Readings:

i)Text Books:

1. JayashreeBalan, *Spoken English*. Vijay Nicole Imprints Pvt. Ltd, Chennai, 2006.
2. G.Radhakrishnan Pillai and K. Rajeevan. *Spoken English For You*. Emerald Publishers, Chennai ,2002.

ii)Reference Books:

1. M.N.K.Bose. *Better Communication in Writing,* New Century Book House (P) Ltd, Madras, 2004.
2. T. M. Farhathullah. *Communication Skills for Under Graduates.* R.B.A. Publications, Chennai.

iii)Web Sources:

1. https:// www.nyp.org/blog/2012/11/28/11-great-free-websites-practice-English
2. https:// www.Spoken English practice.com/ learn-english-speaking-online
3. https://global-exam.com/blog/en/general-english-what-are-best-websites-tolearn-english/

DEPARTMENT OF ECONOMICS – UG – LOCF – SF

Title of the Course:	**Economics for Competitive Examinations- II**	**Semester: VI**
Course Code:	**Contact Hours: 3**	**Credits: 3**

Course Learning Outcomes

On completion of the course, the students are able to

- competently appear for the competitive examinations.
- analyse consumer and producer behaviour.
- understand the theory of employment and theory of Demand for money.
- compare the growth models and demonstrate the various measures of economic development.
- evaluate the performance of Indian economy.

Pre- required Knowledge

- Consumer behaviour analysis
- Micro foundations of Macro economics
- Factors determining Economic development and the functioning of Fiscal sector

Unit I: Micro Economic Analysis

Cardinal Utility Analysis - Ordinal Utility Analysis - Theory of Production: Law of variable proportions - Law of returns and Law of returns to scale - Isoquant - Theory of Value: Pricing under market structures - Marginal Cost Pricing - Peak Load Pricing.

Unit II: Macro Economic Analysis

Determination of output and employment: Classical approach - Keynesian approach. Demand for money: Fisher approach - Cambridge versions - Keynesian approach. Supply of Money: Determinants - High-powered money - Money Multiplier.

Unit III: Development Economics

Economic Growth and Sustainable Development - Vicious Circle of Poverty - Growth Models: Harrod-Domar model - Solow model - Meade's model -Joan Robinson's model - Inter-State variations in HDI in India. Measurement of Economic development: Human Development Index - Physical Quality of Life Index - Human Poverty Index.

Unit IV: Indian Economy - I

National Income: Components, Measurement and Sectoral Contribution - New Agricultural Policy - New Industrial Policy - Trends of India's Foreign Trade - India's Foreign trade policy - India's Population policy - History of Economic Planning in India - NITI aayog Vs Planning Commission.

Unit V: Indian Economy - II

Trends in Revenue and Expenditure of Government of India - Trends in Revenue and Expenditure of State Governments in India - Union State Financial Relations -

Fiscal Policy and Fiscal Reforms in India. Public Debt: Growth Composition - Debt Management - Local finance in India.

Suggested topics for group discussion/ Presentation

1. Ordinal Utility analysis is superior to Cardinal Utility analysis.
2. Money supply has direct and proportionate impact on general price.
3. Human Development Index (HDI) is a comprehensive measure of economic development.
4. NITI aayog differs from erst while planning commission in India.
5. India's Debt Management has to be separated from Monetary Management.

Suggested Readings

i) Text Books

1 Koutsoyiannis. A, (1993), Modern Microeconomics, Macmillan Education Ltd.

2 Jhingan M.L. (2004), 'Macro Economic Theory', Vrinda Publications.

3 Jhingan M.L. (2012), The Economic of Development and Planning, Vrinda Publicatios (P) Ltd, Delhi.

ii) Reference Books

1 Sen. A, (2012), Microeconomics; Theory and Application, Oxford University press, New Delhi.

2 Gregory Mankiw (1998), 'Macro Economics' 6th Edition, Tata McGraw Hill.

4 Misra S.K and Puri V.K. (2013), Economics of Development and Planning, Himalaya Publishing House, Mumbai.

5 Tyagi B.P. Dr (1976), 'Public Finance', Jeyaprakash Publications, 2nd Edition, Meerat.

6 RuddarDattSundaram K.P.M., Indian Economy, S. Chand, New Delhi.

Web Sources

1. https://en.m.wikipedia.org/wiki/Cardinal utility
2. https://en.m.wikipedia.org/wiki/Demand for money
3. https://www.ibef.org/economy/trade-and-external-sector

DEPARTMENT OF COMMERCE – UG – CBCS - LOCF

Title of the Paper: Practical Banking **Semester: VI**

Course Code: LUCONM61 **Contact Hours: 2hrs/w** **Credits: 2**

Course Learning Outcomes:

On completion of the course, the students able to

- explain the banking systems in India;
- analyse the different schemes of commercial banks in India;
- illustrate the bank lending procedures;
- evaluate the credit appraisal system and explain the Management of NPA;
- apply the recent trends in Banking system;

Pre-required Knowledge:

- ✓ Origin of Indian banking system in India
- ✓ Negotiable Instruments
- ✓ Latest technology in banking system

Unit- I: Introduction

Banking - Definition – Functions – Reserve Bank of India – Introduction - Functions.

Unit- II: Relationship

Banker and Customer Relationship – General relationship only – Types of customers.

Unit- III: Deposits

Types of Deposit Accounts – Features of deposit accounts – Account opening procedure.

Unit- IV: Cheques

Meaning – Advantages - Crossing – Types of crossing- Endorsement.

Unit- V: Resent Development

Recent Developments in Banking system – ATM – Debit Card - Credit Card –Services available under Core Banking System.

Suggested topics / Practical Exercise:

The learners are required to:

- ✓ critically evaluate the functions of RBI
- ✓ discuss the special relationship between banker and customer
- ✓ show the different methods of crossing of cheque
- ✓ list the t benefits you enjoyed from debit and credit cards.
- ✓ fill cheque, chellan using specimen forms

Suggested Readings:

i) Text Books:

1. Gorden & Natarajan. (2018). Banking theory Law and practice. Bangalore: Himalaya Publishing House.
2. Sundharam & Varshney. (2019). Banking theory, law and practice. New Delhi: Sulthan Chand & Sons.

ii) Reference Books:

1. Radhaswamy, M. (2018). A Text Book of Banking. Delhi: S. Chand & Co.
2. Shekar & Lakshmi Shekar. (2019). Banking Law and Practice. UP: Vikas Publishing.
2. Santhanam.B. (2018). Banking and Finance System, Chennai: Margham Publication.

iii) Web-Sources:

1. https://library.um.edu.mo/ebooks/b33294872.pdf
2. http://dspace.gipe.ac.in/xmlui/bitstream/handle/10973/23714/GIPE-008631-Contents.pdf?sequence=2&isAllowed=y
3. https://www.amazon.in/Practical-Banking-India-Gupta-H/dp/8178358999

4. https://www.freebookcentre.net/Business/Banks-and-Banking-Books.html

DEPARTMENT OF BUSINESS ADMINISTRATION – UG – CBCS – LOCF

Title of the Paper: Human Resources Management		**Semester: VI**
Course Code: LUBBNM61	**Contact Hours: 2**	**Credit: 2**

Course Learning Outcomes:

On completion of the course, the students are able to

- explain the concept of human resource management.
- use necessary skill set for application of various HR issues.
- analyse the strategic issues and develop manpower resources.
- integrate the knowledge of HR concepts to take correct business decisions
- develop the format for performance appraisal of an employee

Pre-required knowledge:

- ✓ Human resources.
- ✓ Selectin process
- ✓ Man power management.

Unit -I: Introduction to Human Resources Management

Introduction–Meaning and Definition, Nature, Scope objectives and Importance of HRM–Functions of HRM.

Unit -II: Planning

Human Resource Planning – Manpower planning Nature, Importance and Objectives of Manpower Planning – Process of Manpower Planning – Uses and Benefit of Manpower Planning.

Unit- III: Recruitment and Selection

Recruitment and Selection–Source of Recruitment Selection of Employee – Difference between recruitment and selection.

Unit- IV: Performance Appraisal

Procedures for selection – tests – interviews – types of interview – Process of conducting interview - checking of references – final selection. Performance Appraisal –– modern methods

Unit -V: Training and Development

Training and Development – Importance of training employee – Types of training – Methods of training

Suggested Topics / Practical Exercises:

The Learners are required to

- ✓ draft an HR policy to combat work life issues assuming themselves as an HR manager.
- ✓ develop a human resource plan for a select organisations.
- ✓ design an induction programme of your proposed business.
- ✓ draft incentive schemes for different job roles in select organisations.
- ✓ draft a policy on grievance redressal to be implemented in a select organisations

Suggested Readings:

i) Text Book:

Mamoria, J. C.B. (2016) Personnel Management. Humalaya publications house.

ii) Reference Books:

1. Bassotia G.R. (2014) .Human Resources Management, Mangal Deep Publications.
2. Aswathappa. K.(2011). Human Resource sand Personnel Management NewDelhi TMH,.
3. Kaushal Kumar, (2011). Human Resources Management. ABD Publishers..
4. Keith Davis, (2017).Human Relation sat work. TMH.
5. Jayasankar, (2015). Human Resource management, Margham Publications..

6. Khanka.S.S.(2017),Human Resource Management,. S.Chand.

iii) Web Sources:

1.https://www.freebookcentre.net › Introduction-to-Huma...

2. https://www.yumpu.com › document › view › downloa...

3 https://www.topfreebooks.org › free-human-resources-a...

4. https://books.askvenkat.org › human-resource-manage...

5. https://pdfcoffee.com › download › human-resour...

DEPARTMENT OF NCC – UG - CBCS - LOCF

PART IV - NON MAJOR ELECTIVE

Title of the paper: NCC - II **Semester: VI**

Course code : LUNCNM61 **Contact Hours: 2hrs/w** **Credits : 2**

Course Learning Outcomes

On Completion of this Course, the students are able to

- demonstrate leadership skills
- analyze their strengths, weakness, opportunities and threats
- explain the basics of map reading
- adapt the techniques on field
- formulate strategies in battle ground

Pre–required Knowledge:

- ✓ Basics of Field Craft and Battle Craft.
- ✓ Skills in Leadership and Personality Development.
- ✓ Basics of Map reading and Grid Reference

Unit – I: Leadership Development

Leadership traits – Indicators of leadership - Types of Leaders - Autocratic and Democratic – Attitude – positive, negative and neutral – Assertiveness and negotiation. Case study of: A.P.J. Abdul Kalam, Ratan Tata and Kiran Mazumdar Shaw.

Unit – II: Personality Development

Definition and Factors influencing personality – SWOT analysis-Inter-personal relationship-Soft skills.

Unit – III: Map reading

Introduction –Service protractor- Conventional Signs – Prismatic compass- the Grid system and Grid reference.

Unit – IV: Field Craft

– Introduction – Description of Grounds – Observation – and Concealment Judging distance – Methods – under or over estimation – Description and Indication of targets – Methods.

Unit –V: Battle Craft

Field Signal – Section Formation – Fire Control orders – Types and Conduct of Patrols.

Suggested Topics/Practical Exercises

- finding the leadership quality of leaders A.P.J Abdul Kalam, Raten TATA and Kiran Mazumdar
- recognise our own SWOT Analysis
- finding the role of Conventional Signs in Map reading.
- identify types of grounds and Targets.
- apply the knowledge on Section Formation in a battle.

SUGGESTED READINGS:

i) Text books:

1. Asthana A K. Brigadier (2015), Commandant, Precis – Kamptee.
2. NCC Guide – Army Wing, (2010). Major R. Ramasamy, Karur, Priya Publications.
3. Cadets Hand Book (2018). Common subjects for SD/SW, OTA Training Materials, Kamptee.

ii) Reference books:

1. Specialized Subject Army (2018), Govt. Of India Press, New Delhi.
2. Precis, (2009). Published by Officer Training School, Kamptee,
4. Cadet's diary, Published by cadets' center, Chennai, 2000.

5. NCC: Handbook of NCC cadets,(2015), R. Gupta, Ramesh Publishing House,
1. Lt. Saravanamoorthy,S. N. A Hand Book of NCC-Army Wing (2015), Jayalakshmi publications.

iii) Web sources

1. https://indiancc.nic.in/
2. https://play.google.com/store/apps/details?id=com.chl.ncc&hl=en_IN&gl=US
3. https://joinindianarmy.nic.in/default.aspx
4. https://www.joinindiannavy.gov.in/
5. https://indianairforce.nic.in/

CERTIFICATE COURSE

DEPARTMENT OF COMPUTER SCIENCE – UG - CBCS-LOCF

Course Title: Tally ERP.9-practical **Semester: II**

Course Code: FADCCS **Contact Hours: 4hrs/w**

Course learning Outcomes:

On completion of this course, the students are able to

- acquire the theoretical knowledge in Tally langage
- create ledger acconts in Tally
- design Voucher entries using Tally
- prepare Financial Accounts in company organisation

Pre –Required Knowledge:

- ✓ Enlighten the students on various components of office automation languages used in seminars and business.
- ✓ Enlighten the students with using intrinsic basic controls.
- ✓ Train the students using dialoue boxes and Menus

List of Experiments:

1. Creation of a Company –alteration and deletion of companies

2. Creation of a ledger and adjustment of ledger
3. Creation of voucher entries
4. Creation of stock groups, stock items.
5. Creating a Stock voucher
6. Creating a Payroll mode
7. Preparation of Financial Statements
8. Creation of Value added Tax in Tally
9. Preparation of service tax in Tally.
10. Preparation of inventory report.

Web Sources:

1.https://youtu.be/V_JLhAf7NZ8

2.https://youtu.be/xwpJ5QX9WEU

3. https://youtu.be/T7iLVrGvtoE

DIPLOMA COURSE

Course Title: Web App Development **Semester: III**

Course Code: FADDCS1 **Contact Hours: 4hrs/w**

Course Learning Outcomes:

On completion of this course, the students are able to

- know the various HTML tags and design simple web pages
- create a table using HTML
- understand the CSS Concepts
- gain the knowledge of scripting language Java Script
- understand PHP concepts

Pre-Required Knowledge:

- ✓ Basic HTML Tags
- ✓ Basics of CSS
- ✓ Basics of Scripting language

UNIT I: Hyper Text Markup Language

The Basic HTML – Text – Hyperlinks – Lists – Using Color and Images – Images – Tables – Frames. **Cascading**

Stylesheets: Using Styles: Simple Example – Defining Your Own Styles – Properties and Values in Styles – Formatting Blocks of Information.

UNIT II: JavaScript

The Basics: A Simple Script, JavaScript and the HTML Page – Variables: Variable Names - Data Types - Creating Variables – Statements: if..Else, For, While, Switch. **Introducing PHP and MySQL:** Server Side Application-The PHP Story -The MySQL Story- Using Variables – Statements - and Operators. Embedding PHP in HTML - Writing Statements and Comments – Storing Values in Variables – Understanding Simple Data Types – Using Operators to Manipulate and Compare Variables.

UNIT III: Using Conditional Statements and Loops

Adding Decision Making Capabilities with Conditional Statements – Repeating Actions with Loops. **Arrays:** Creating an Array – Modifying Array Elements – Processing Array with Loops. **Files, Sessions and Cookies:** Reading and Writing Files - Managing Sessions Using Session's Variables - Storing Data in Cookies.

UNIT IV: With Databases and Tables

Creating Databases - Creating Tables - Altering Tables - Backing up and Restoring Databases and Tables - Dropping Databases and Tables - Viewing Databases, Tables and Field Information.

UNIT V: Editing Records and Performing Queries

Inserting Records-Editing and Deleting Records - Performing Queries: Retrieving Specific Columns - Filtering Record with a WHERE Clause - Using Operators - Sorting Records and Eliminating Duplicates, Limiting Results and Using Built-in function. **Using the MySQL Security System:** Understanding the Need for Access Control -Understanding How MySQL Access Control Works - Assigning, Revoking and Viewing User Privileges.

Suggested Reading:

i) Text Book:

Jon Duckett, **Beginning HTML, XTML, CSS and Java script,** Wiley Publishing

ii) References Books

Chris Bates, **"Web Programming",** Wiley Publishing 3d Edition.

M. Srinivasan, **"Web Technology: Theory and Practice",** Pearson Publication

iii) Web Sources:

1. https://www.geeksforgeeks.org/web-technology/
2. https://www.javatpoint.com/html-tutorial
3. https://www.tutorialride.com/web-technologies.htm
4. https://www.tutorialspoint.com/web_developers_guide/web_basic_concepts.htm
5. https://www.w3schools.com/

DIPLOMA COURSE

Title of the Course: Web App Development – Practical **Semester: IV**

Course Code: FADDCS2 **Contact Hours: 4hrs/w**

Course Learning Outcomes:

On Completion of the course, the students are able to:

- develop basic skills in website creation
- experiment with open source technologies such as HTML, CSS, JavaScript
- implement static, dynamic and interactive web pages and web applications.
- build applications using PHP and MySQL
- data manipulation from multiple MySQL tables.

Programs:

HTML

1. To Create List tag in HTML

2. To Create Table tag in HTML
3. To Create Form tag in HTML
4. To Create Frameset in HTML

CSS

1. To implement Inline CSS
2. To implement Internal CSS
3. To implement External CSS
4. Implementation of CSS in webpage

JAVASCRIPT

1. Write a JavaScript program for Control structure
2. Write a JavaScript program for looping structure
3. Write a JavaScript program for Form validate
4. Write a JavaScript program for Prompt box
5. Write a JavaScript program for Alert box

XML

1. Write a XML to design the different document
2. Write a XML program for Schema structure
3. DTD to validate the XML document

PHP

1. Write a program for Basic structure of PHP
2. Write a PHP program for Conditional statement
3. Write a PHP program for looping statement
4. Write a PHP program for creating simple application
5. Write a PHP program for Database connectivity
6. Write a PHP program for Create website for our college.
7. Write a PHP program for Array functions.
8. Write a program for Upload, View and Download files using PHP &MYSQL.

Reference Book:

Web Technologies Black Book, Kogent Learning Solutions Inc, Dream tech Press, 2009.

DEPARTMENT OF PHYSICAL EDUCATION – UG – CBCS
ADD-ON COURSES

DIPLOMA COURSE IN HOLISTIC HEALTH

Title of the paper: Yoga, Meditation and Holistic Health-Practical **Semester: V & VI**

Course Code: EADDPE2 **Total Contact Hours: 40**

1. Physical exercises for whole body
2. Productive and creative manual work (cleaning, kitchen, garden, art work etc.)
3. Breathing exercises (10 type)
4. Relaxation techniques (4 types)
6. Music and movement therapy
7. Basic Yogasanas (20 types)
8. Mutras (10 types - energy)
9. Physical exercises (5 types)
10. Meditation skills (5 types)
11. Healing techniques (5 types)
12. Field visit, to understand human
13. Body, visit to Government Medical College Hospital
14. Visit to a reputed Yoga Centre (Encounter with Yoga experts)

RULES AND REGULATIONS FOR THE PROJECT / DISSERTATION WORK (UG, PG AND M.PHIL)

- Research supervisors will be allotted to the students / scholars by the respective Department.
- Research topic shall be chosen by the student / scholar in consultation with his/ her research supervisor.
- Every department has to maintain the year-wise list of project works carried out by the students. Research works done by the students / scholars of the previous batches should not be repeated by the students / scholars of the current academic year.

- The general structure of the project report is given below.

  Title page with college emblem

  Research supervisor's certificate

  Student's declaration counter signed by Research Supervisor and the HOD

  Student's Acknowledgement

  Contents

  List of Tables if any

  Introduction

  Review of Literature

  Materials and Methods

  Results and Discussion

  Summary of Findings and Conclusion

  Bibliography

  Annexure

  - Four copies of the project repot should be submitted, typed in A4 Paper in Times New Roman with the font size of 12 and 1.5 line spacing.

SARASWATHI NARAYANAN COLLEGE

(Autonomous Institution – Affiliated to Madurai Kamaraj University)

(Reaccredited with $B^{(2.78)}$ Grade by NAAC in the second cycle)

MADURAI -22

EVALUATION METHOD UNDER CBCS- LOCF

CONTINUOUS INTERNAL ASSESSMENT (CIA)

Internal assessment is based on the continuous evaluation of performance of the students in each semester. Internal mark is awarded to each course in accordance with the following guidelines.

UNDER GRADUATE, POST GRADUATE AND M.PHIL:

1. Internal test will be conducted for the maximum of 60 marks and converted to 15 marks.
2. Two internal tests will be conducted and the average of marks secured in the two tests will be taken as the Final Internal Test mark.
3. The distribution of Internal Assessment marks is given below.

THEORY			**PRACTICAL**		
Test	-	15	Record Note	-	10
Seminar	-	5	CIA	-	15
Quiz	-	5	Model Exam	-	15
Internal Maximum	-	25	Internal Maximum	-	40

4. There is no Cumulative Internal Assessment (CIA) for Self Learning Courses, Add on Certificate / Diploma Programmes and Part-1 subjects other than Tamil.
5. Internal marks for those UG, PG and M.Phil. students who have to Repeat the Semester (RS) for want of attendance should be marked “AA” in the foil card.
6. There is no minimum mark for Internal assessments marks for all the UG, PG and M.Phil. Programmes.
7. Internal test for improvement of marks is not allowed under any circumstances
8. Special Internal Assessment tests for the absentees may be conducted on genuine reasons with the prior approval of HOD, Dean and Principal. Such tests may be conducted before the commencement of the Summative Examinations.

SUMMATIVE EXAMINATIONS (SE)

1. Summative Examinations for all the UG, PG and M.Phil. Programmes are conducted in November and April for the Odd and the Even semesters respectively.
2. Question paper setting along with the scheme of valuation is purely external for all the UG, PG and M.Phil. Programmes.
3. The office of the CEO is conferred with the right of choosing the Question Paper Setters and the External Examiners from the Panels suggested by the Boards of Studies of Programmes offered by the respective Department and approved by the Academic Council of the College. The question papers set for the Summative Examinations will be finalised by the Scrutiny Committee constituted by the office of the COE.
4. Practical Examinations will be conducted by the External Examiner and the course teacher, who will act as the Internal Examiner. In the absence of course teacher / External Examiner, HOD will act as the Internal Examiner / External Examiner.
5. The marks scored by the students in the External Examinations in Self Learning Courses and Add – on Courses will be converted to 100 for each course.
6. The theses submitted by the M.Phil. scholars after the conduct of Awards Committee meeting can be valued and the Viva-Voce Examinations can be conducted. The Principal is empowered to declare the results and it can be ratified in the next Awards Committee meeting.

Knowledge levels for assessment of Outcomes based on Blooms Taxonomy

S. No	Level	Parameter Description	Description
1	K1	Remembering	Remembering It is the ability to remember the previously learned
2	K2	Understanding	The learner explains ideas or Concepts
3	K3	Applying	The learner uses information in a new way
4	K4	Analysing	The learner distinguishes among different parts
5	K5	Evaluating	The learner justifies a stand or decision
6	K6	Creating	The learner creates a new product or point of view

WEIGHTAGE OF K–LEVELS IN QUESTION PAPER

K-LEVELS (Cognitive Level)						Total
	K1	K2	K3	K4	K5/ K6	
SUMMATIVE EXAMINATIONS– 75 Marks Pattern	21	30	18	18	13	100
SUMMATIVE EXAMINATIONS–50 Marks Pattern	24.5	24.5	17	17	17	100
CONTINUOUS INTERNAL ASSESSMENT(CIA)	24	26	14	25	11	100

QUESTION PATTERN FOR SUMMATIVE EXAMINATIONS For those who join in June 2022 UG and PG (Language Courses, Core Courses, Discipline Specific Electives, Generic Elective Courses, Non-Major Electives(PG))	
	TOTAL MARKS 75
SECTION–A (Answer all questions) **I. Choose the correct answer (FIVE questions –ONE question from each unit)** (5x1=5) (Q.No.1-5)-All questions are at K2 level **II. Fill in the blanks (FIVE questions - ONE question from each unit)** (5x1=5) (Q.No.6-10)-All questions are at K1 level	**10**
SECTION-B **Answer all questions not exceeding 50 words each**. **ONE set of questions from each unit** **Q. No. : 11 to 15** (5x2=10) K2 level – 2 Questions K3 level – 1 Question K4 level –1 Question K5/K6 level – 1 Question	**10**
SECTION-C-Either/or type **Answer all questions not exceeding 200 words each**. **ONE set of questions from each unit.** **Q. No. : 16 to 20** (5 x5=25) K1 level – 1 Question	**25**

K2 level – 2 Questions K3 level – 1 Question K4 level – 1 Question	
SECTION-D-Answer any THREE questions not exceeding 400 words each. **ONE question from each unit.** **Q. No.: 21 to 25** (3x10=30) K1 level – 1 Question K2 level – 1 Question K3 level – 1 Question K4 level – 1 Question K5/K6 level – 1 Question	**30**
Total	**75**

QUESTION PATTERN FOR SUMMATIVE EXAMINATIONS For those who join in June 2022 UG and PG (Skill Enhancement Courses, Self Learning Courses, Non Major Electives (UG)and Part V Courses (except NCC))	
	TOTAL MARKS 50
SECTION–A(Answer all questions) **I. Choose the correct answer (FIVE questions – ONE question from each unit)** (5x1=5) (Q.No.1-5)-All questions are at K2 level **II. Fill in the blanks (FIVE questions – ONE question from each unit)** (5x1=5) (Q.No.6-10)-All questions are at K1 level	**10**
SECTION-B **Answer all questions not exceeding 50 words each.** **ONE set of question from each unit** **Q. No. : 11 to 15** (5x2=10) K1 level – 1 Question K2 level – 1 Question K3 level – 1 Question	**10**

K4 level – 1 Question K5/K6 level – 1 Question	
SECTION-C **Answer any THREE questions not exceeding 400 words each.** **ONE question from each unit** **Q. No. : 16 to 20** (3x10=30) K1 level – 1 Question K2 level – 1 Question K3 level – 1 Question K4 level – 1 Question K5/K6 level – 1 Question	**30**
Total	**50**

QUESTION PATTERN FOR INTERNAL ASSESSMENT (CIA) For those who join in June 2022 UG and PG	
	TOTAL MARKS 60
SECTION–A (Answer all questions) **I. Choose the correct answer** (5 x 1 = 5) (Q.No.1-5)-All questions are at K2 level **II. Fill in the blanks** (5 x 1 = 5) (Q.No.6-10)-All questions are at K1 level	**10**
SECTION-B **Answer all questions not exceeding 50 words each. ONE set of question from each unit** (4 x 2 = 8) Q.No. 11 – K2 level Q.No. 12 – K3 level Q.No. 13 – K3 level Q.No. 14 – K5/ K6 level	**8**
SECTION-C-Either/or type (**Answer all questions not exceeding 200 words each**. (3 x 6 = 18) Q.No. 15 – K3 level Q.No. 16 – K4 level Q.No. 17 – K5/K6 level	**18**
SECTION-D **Answer any TWO questions not exceeding 400 words each.** (2 x 12 = 24) Q.No. 18 – K1 level Q.No. 19 – K2 level Q.No. 20 – K4 level	**24**
Total	**60**

QUESTION PATTERN FOR SUMMATIVE EXAMINATIONS For those who join in June 2022 UG and PG (Language Courses, Core Courses, Discipline Specific Electives, Generic Elective Courses, Non-Major Electives(PG))						
DURATION:3HRS			**MAXMARKS:75**			
K-LEVELS SECTIONS	**K1**	**K2**	**K3**	**K4**	**K5/ K6**	**TOTAL MARKS**
SECTION A (Answer all questions, each question carries One Mark)	5	5				**10**
SECTION B (Answer all questions, each question carries TWO Marks, ONE question from Each unit)		4	2	2	2	**10**
SECTION C (Answer all questions- Either/or type-ONE Question from each unit)	5	10	5	5		**25**
SECTION D (Answer any THREE questions, ONE question from each unit, each question carries TEN Marks)	10	10	10	10	10	**30**
TOTAL	20	29	17	17	12	**75**

QUESTION PATTERN FOR SUMMATIVE EXAMINATIONS For those who join in June 2022 UG and PG (Skill Enhancement Courses, Self Learning Courses, Non Major Electives (UG)and Part V Courses (except NCC))						
DURATION:2HRS			**MAX MARKS:50**			
K-LEVELS SECTIONS	**K1**	**K2**	**K3**	**K4**	**K5/K6**	**TOTAL MARKS**
SECTION A (Answer all questions, each question carries One Mark)	5	5				**10**
SECTION B (Answer all questions, each question carries TWO Marks, ONE question from Each unit)	2	2	2	2	2	**10**
SECTION C (Answer any THREE questions, ONE question from each unit, each question carries TEN Marks)	10	10	10	10	10	**30**
TOTAL	17	17	12	12	12	**50**

BLUE PRINT OF QUESTION PAPER FOR INTERNAL ASSESSMENT (CIA)						
DURATION:2HRS			**MAX MARKS:60**			
K-LEVELS / SECTIONS	**K1**	**K2**	**K3**	**K4**	**K5/K6**	**TOTAL MARKS**
SECTION A (Answer all question. Each question Carries **ONE** Mark)	5	5				**10**
SECTION B (Answer all questions. Each question carries **TWO** Marks)		2	4		2	**8**
SECTION C (Answer all questions- Either/or type -Each question carries **SIX** Marks)			6	6	6	**18**
SECTION D (Answer any TWO questions. Each question carries **TWELVE** Marks)	12	12		12		**24**
TOTAL	17	19	10	18	8	**60**

QUESTION PATTERN

FOR PART IV ENVIRONMENTAL STUDIES, VALUE EDUCATION YOGA and Course for Competitive Examinations – UG

(For those who joined in June 2022)

Blue print for External

Max. Marks: 75 **Duration: 3hrs**

I. Answer All Questions **75 x 1 = 75 Marks**

Choose the Correct answer (Objective type pattern)

ADD-ON PROGRAMMES

- Add on Programmes have been in practice for all the UG students since the academic year 2014-2015. Each department has to conduct one Certificate Programme in the Second Semester with the duration of 40 hrs and a Diploma Programme in the Third and the Fourth Semesters with the duration of 40 hrs each.
- The certificate Programme consists of only one course (theory / practical) while the Diploma Programme consists of two courses (theory / practical).
- There is no Continuous Internal Assessment (CIA) for Add-on Programmes. Only Summative Examinations will be conducted and the valuation will be done only by External Examiners.
- Summative Examinations for the Add-On Certificate and Diploma Programmes will be conducted at the end of every semester for UG Arts and Mathematics Programmes. Whereas the same will be conducted at the end of the respective academic year for the science UG Programmes in science subjects except Mathematics.

COMMON QUESTION PATTERN FOR ADD – ON PROGRAMMES

(for those who joined in June 2020 and afterwards)

Blue print for External

Max. Marks: 50 **Duration: 2 hrs**

SECTION – A

1. Answer All Questions (No Choice) 10 x 1 = 10 Marks

Choose the correct answer (Objective patter)

(Two Questions from each unit)

SECTION – B

2. Short type questions 5 x 4 = 20 Marks

Answer any Five questions (5/8)

(Choosing atleast one question from each unit and not exceeding two questions)

SECTION - C

3. Essay type questions 2 x 10 = 20 Marks

Answer any Five questions (2/5)

(One question from each unit)

QUESTION PAPER PATTERN FOR M.Phil. COURSES

Section A

Answer All Questions

1. Either or Pattern (one set from each unit)

5 x 6 = 30 Marks

Section B

Answer any three questions out of 5 questions

1. One question from each unit 3 x 15 = 45 Marks

QUESTION PATTERN FOR M.Phil. CHEMISTRY FOR ONLY INDEPTH PAPER
(Course Code No. DMPCHE11)

Answer any Five Questions out of Eight Questions

One question from each published literature.

5 x 15 = 75 Marks

(Each answer should not exceed five pages)

VALUATION

1. Central valuation system is adopted.
2. Single Valuation system is followed for UG, PG and M.Phil. theory examinations. The valuation is done by the external examiners only.
3. UG and PG Practical Examinations are valued by both Internal and External Examiners.
4. Any discrepancy in the question paper should be brought to the notice of the Controller of Examinations by the respective Course Teacher through the Head of the Department within five days from the date of examination.

DECLARATION OF RESULTS

1. The total credit should not exceed 140 for UG Programmes and 90 for PG Programmes, excluding the credits earned for additional credit courses. This is applicable to the students migrating from other colleges also.
2. The students migrating from other colleges have to appear for the Summative Examinations conducted by the college for non-equivalent theory and practical courses. Mark scored by such a student in the Summative Examinations conducted by the previous college shall be converted to 100 if it is less than 100 for any equivalent course.

3. The students who repeat the semester have to appear not only for Summative Examinations but also for internal tests. The Internal marks scored by such students in their previous attempts shall stand invalid.
4. Results will be published within 20 days from the date of completion of all the Examinations.
5. Results will be declared as per the norms given in the following table in consultation with the Awards Committee.

Maximum and Passing Minimum Marks

Course	External Exam (SE)		Aggregate Marks (CIA + SE)	
	Passing Minimum	**Maximum Mark**	**Passing Minimum**	**Maximum Mark**
UG (Theory)	27	75	40	100
UG – NME / SEC / Part V (except NCC)	18	50 (converted to 75 marks)	40	100
UG – SLC	20	50	40	100
UG (Practicals)	21	60	40	100
UG Project	18	50	40	100
PG (Theory)	34	75	50	100
PG (Practicals)	27	60	50	100
PG (Project)	23	50	50	100
M.Phil. (Theory)	34	75	50	100
M.Phil. Project				

1. Dissertation	50	**100** (Internal 50 + External 50)	-	-
2. Viva – Voce	50	**100** (Internal 50 + External 50)	-	-

REVALUATION AND SUPPLEMENTARY EXAMINATIONS

1. Students can apply for Revaluation within 10 days from the date of the publication of the results.
2. Final year students of UG and PG Programmes can appear for Supplementary Examinations for the arrear papers of only the V and VI Semesters of UG Programmes and III and IV Semesters of PG Programmes. Students having the maximum of three arrear papers alone are eligible for Supplementary Examinations.
3. Absentees in the Summative Examinations are not eligible to apply for the Supplementary Examinations.
4. Supplementary Examinations will be conducted every year in the month of July.

ATTENDANCE

1. Students with the minimum of 75% of attendance (68 days out of 90 days) in a semester are permitted to appear for the summative examinations.
2. Students who do not have the minimum attendance should go for condonation.

3. Students who do not have the minimum attendance of 20 hrs for Certificate Programme and the minimum attendance of 20 hrs for each course in Diploma Programme will not be permitted to appear for the summative examinations.

The following are the regulations for grant of condonation.

Attendance	Condonation Fee	Authority to Consider	Nature of Penalty
65% - 74% (59-67 days)	Rs.500/-	Head of the Department	As decided by the HOD
50% - 64% (58-45 days)	Rs.1000/-	Principal and the Examination Committee	Application for exemption to be made on prescribed form with the specified remarks of the Principal
< 50% (Below 45 days)	To repeat the whole semester	-----	-----

EXAMINATION RULES AND REGULATIONS

1. Students without hall ticket and identity card are not permitted to appear for the examinations.
2. Possession of materials in any form for copying is strictly prohibited in the examination hall.
3. Students indulging in any form of malpractices in the examination are liable for severe punishment.

4. Students are not allowed into the examination hall after 30 minutes of the commencement of the examination.
5. Students should not write their names or any other identification marking except their register number in the answer scripts.
6. Students who have discontinued the Degree Programme are not permitted to write the summative examinations.
7. Students who have not completed the theory and practical courses during the Programme of their study are allowed to appear for the Summative Examinations in the same syllabi up to a period of three years from the year of the completion of Programme. However, after the completion of three years, they have to appear for the summative examinations for the equivalent course in the current syllabi only. The equivalence of a course is to be decided by the respective HOD, Dean, the Controller of Examinations and the Principal. This is also applicable to those students who repeat the semester.

PENAL ACTIONS FOR VARIOUS FORMS OF MALPRACTICES IN THE

SUMMATIVE EXAMINATIONS

Sl. No.	Malpractice	Penal Action
1	In Possession of Materials relevant to the examination concerned	Cancellation of that particular paper.
2	Copied from materials in his/her possession	Cancellation of all papers of that semester

3	Copied from neighbours	Cancellation of all papers including arrear papers of that semester Cancellation of that particular paper of the candidate who helped for copying
4	Copied by exchanging answer script between neighbours	Cancellation of all papers of the candidates who exchanged their answer scripts
5	Misbehaviour in the examination hall	Cancellation of that particular paper
6	Copying and Misbehaviour in the examination hall	Cancellation of all papers of that semester and debarring the candidate from appearing for the next semester examination.
7	Insertion of answer sheets which were previously stolen and written	Cancellation of all papers of that semester and debarring the candidate from appearing for the next semester examination.
8	Impersonation in the examination	Cancellation of all papers of that semester and recommending dismissal from the college.