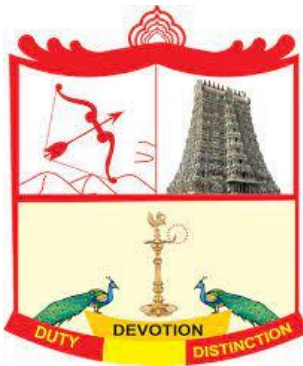


SARASWATHI NARAYANAN COLLEGE

(An Autonomous Institution Affiliated to Madurai Kamaraj University)

(Reaccredited with Grade 'B' by NAAC)

MADURAI – 625 022.



DEPARTMENT OF COMPUTER SCIENCE

Choice Based Credit System (CBCS)

Learning Outcomes-based Curriculum Framework (LOCF)

B.Sc. Computer Science Programme

(For those who join in June 2022)

PRINCIPAL

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

DEPARTMENT OF COMPUTER SCIENCE

- 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.

B.SC (CS) – COURSE STRUCTURE FOR THE
ACADEMIC YEAR 2022

Part	Sub.Code	Title of the paper	Hours	Credits	Exam Hrs	Int.	Ext.	Total
SEMESTER I								
I	LUP1TA11	Tamil	6	3	3	25	75	100
II	LUP2EN11	English	6	3	3	25	75	100
III	LUCSCT11	CC -1: Programming in C	5	3	3	25	75	100
	LUCSCL11	CC -2: Programming in C- Practical	4	3	3	40	60	100
	LUCSCT12	CC -3: Digital Computer Fundamentals	3	3	3	25	75	100
	LUCSGE11	GEC 1: Statistics	4	4	3	25	75	100
IV	LUP4ES11	Environmental Studies	2	2	3	25	75	100
SEMESTER II								
I	LUP1TA21	Tamil	6	3	3	25	75	100
II	LUP2EN21	English	6	3	3	25	75	100
III	LUCSCT21	CC -4: Object Oriented Programming with C++	5	4	3	25	75	100
	LUCSCL21	CC -5: Data Structure and C++ - Practical	4	3	3	40	60	100
	LUCSCT22	CC -6: Data Structures and Algorithms	3	3	3	25	75	100
	LUCSGE21	GEC 2: Discrete Mathematics	4	3	3	25	75	100
IV	LUP4VE21	Value Education	1	1	3	25	75	100
IV	LUP4YA21	YOGA	1	1	-	-	50	100
	LUP5NC21	NCC	-	1	2	40	60	100
V	LUP5NS21	NSS	-	1	2	25	75	100
	LUP5PE21	Physical Education						
	LUP5LS21	Library Science						
Add. Cr. Co	LUCSSC21	SLC 1: Fundamentals of Computer	-	2	-	-	50	100
	LUCSSC22	Video Editing with Open Shot						

SEMESTER III								
I	LUP1TA31	Tamil	6	3	3	25	75	100
II	LUP2EN31	English	6	3	3	25	75	100
III	LUCSCT31	CC -7: Relational Database Management	4	4	3	25	75	100
	LUCSCL31	CC -8: SQL & PL/SQL -Practical	4	4	3	40	60	100
	LUCSCT32	CC-9: Computer Organization and Architecture	4	4	3	25	75	100
	LUCSDL31	DSE 1:VB.Net-Practical	3	3	3	40	60	100
	LUCSDL32	Corel Draw-Practical						
	LUCSGE31	GEC 3: Numerical Methods	3	3	3	25	75	100
Ad. Cr. Co	LUCSSC31	SLC 2:Multimedia and Animation	-	2	-	-	50	100
	LUCSSC32	Computer Hardware and Trouble Shooting						
		MOOC						
SEMESTER IV								
I	LUP1TA41	Tamil	6	3	3	25	75	100
II	LUP2EN41	English	6	3	3	25	75	100
III	LUCSCT41	CC-10: Programming in Java	4	4	3	25	75	100
	LUCSCL41	CC -11: Programming in Java – Practical	4	4	3	40	60	100
	LUCSGE41	GEC 4: Operation Research	3	3	3	25	75	100
	LUCSDS41	DSE- 2: Open Source Technology	3	3	3	25	75	100
	LUCSDS42	System Software						
IV	LUCSSE41	SEC 1: Distributed Programming	2	2	2	25	50	100
	LUCSSE43	Ethics in Information Security						
	LUCSSL42	SEC – 2: Office Automation - Practical	2	2	3	40	60	100
	LUCSSL44	Flash - Practical						
Ad. Cr. Co	LUCSSC41	SLC 3: Internet and Its Applications	-	2	-	-	50	100
	LUCSSC42	Cyber Security & Forensics						
		MOOC						
SEMESTER V								
III	LUCSCT51	C -12: Operating System	5	4	3	25	75	100
	LUCSCT52	CC -13: Programming in Python	6	5	3	25	75	100
	LUCSCT53	CC -14: Computer Networks	4	4	3	25	75	100
	LUCSCL51	CC -15: Programming in Python - Practical	6	4	3	40	60	100

	LUCSDS51	DSE-3: Computer Graphics	4	4	3	25	75	100
	LUCSDS52	Cloud Computing						
IV	LUCSSL51	SEC – 3: Photoshop - Practical	3	2	3	40	60	100
	LUCSSL52	Page Maker-Practical						
	LUCSNM51	GEC -5(NME) :Fundamentals of Computer	2	2	2	25	50	100
Ad.	LUCSSC51	SLC 4: E-Commerce	-	2	-	-	50	100
Cr.	LUCSSC52	Ethical Hacking						
Co		MOOC	-	-	-	-	-	-
SEMESTER VI								
III	LUCSCT61	CC-16: Mobile Application and Development	6	5	3	25	75	100
	LUCSCT62	CC-17: Software Engineering	6	5	3	25	75	100
	LUCSCL61	CC-18: Mobile Application and Development - Practical	6	4	3	40	60	100
	LUCSPJ61	CC19: Project & Viva-Voce	4	4	3	50	50	100
	LUCSDS61	DSE-4:Quantitative Aptitude and Computer Awareness	3	2	3	25	75	100
	LUCSDS62	Personality Development						
IV	LUCSSL61	SEC -4: R- Programming-Practical	2	2	3	40	60	100
	LUCSSL62	Graphics Programming-Practical						
	LUCSNM61	GEC-6(NME): Internet and its Applications	2	2	3	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, வினைத்திட்டம், 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
ஒர் அறிமுகம் - பா.சுபாவ்ஃபோஸ்
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, உழிகை, 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/ba4baebbfbb4bcdba8bc2bb2bcd95bb3bcd/%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

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 SCIENCE– UG - CBCS- LOCF

Title of the Course: Programming in C	Semester: I
Course Code: LUCSCT11	Contact Hours: 5hrs/w
	Credits: 3

Course Learning Outcomes:

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

- enhance the Programming Skills, Problem Solving Techniques, IDE and Compilers for C.
- gain knowledge of Writing, Compiling and Running Programs.
- understand and Practice Programming Construct: Variable, Operators, Control Structures, Loop, Functions with C.
- understand the concept and Practice basics of arrays, pointers, preprocessor, Structure and Union

Pre-required Knowledge:

- ✓ Basic C Commands
- ✓ File Management Operations
- ✓ How to Compile and run a C Program

Unit I: C Fundamentals

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

Unit II: Data Input Output Functions

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

Unit III: Functions and Storage Classes

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

Unit IV: Derived Data Types

Arrays-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 and File Handling

Pointers-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/ practical Exercises:

- ✓ Mathematical Operators
- ✓ Arrays
- ✓ Storage Classes
- ✓ Unions
- ✓ Files

Suggested Readings:

i) Text Book:

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

ii) Reference Books:

1. E.Balagurusamy, Programming with c'Tata- McGraw-Hill Publishing Company Ltd. 2011
2. C -The Complete Reference, Herbert schildt, McGraw-Hill, 5th Edition 2009.

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

Title of the Course: Programming in C – Practical	Semester: I
Course Code: LUCSCL11	Contact Hours: 4hrs/w
	Credits: 3

Course Learning Outcomes:

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

- gain creativity thinking to develop C programs and applications.
- able to create flowchart and write algorithm to problem solving
- understand the structure of the C programming, declaration and usage of variables.
- understand and Practice C programs using operators, exercise conditional and iterative statements.
- implement programs for structures and arrays, perform file operations with teamwork.

Programs:

1. Find square root of nos. without using built in function
2. Prepare a C program for reverse digits of a number
3. To reverse the given string
4. Check if a number is Prime or not.
5. Exchange the values of two variables using function
6. Solution of a Quadratic Equation.
7. Sum of Series (sine, cosine).
8. Ascending and descending order of numbers using Arrays (Use it to find Largest and Smallest Number).
9. Sorting of names in Alphabetical order.
10. Matrix operations (Addition, Subtraction, Multiplication using functions).
11. Find transpose of matrix
12. Finding factorials, generating Fibonacci Numbers using recursive functions.
13. String manipulations without using string functions (string length, string comparison, string copy, palindrome checking, counting words and lines in strings).
14. Prepare an address book using Structure.
15. Add two numbers using pointer
16. Illustrate the use of bitwise operators

17. Demonstrate the use of command line arguments
18. Read character from one text file; convert into upper case and write in other file.
19. Prepare a mark sheet program using file
20. Prepare a payroll program using file

Suggested Readings:

i) Reference Books:

1. E.Balagurusamy, Programming with c'Tata- McGraw-Hill Publishing Company Ltd.20011
2. C -The Complete Reference, Herbert schildt, McGraw-Hill, 5th Edition 2009.

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

Title of the Course: Digital Computer Fundamentals	Semester: I
Course Code: LUCSCT12	Contact Hours: 3hrs/w
	Credits: 3

Course Learning Outcomes:

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

- Understand data representation for digital logic
- Understand the basic blocks of digital logic
- Understand the fundamental organization of a digital computer
- Design simple combination & sequential circuits

Pre-Required Knowledge:

- ✓ Algebra operations
- ✓ Logic circuits.
- ✓ Logic gates

Unit I: Number System and-Code

Introduction - number systems - binary numbers – arithmetic operation - 1's and 2's Complement.

Unit II: Boolean Algebra

Introduction - Boolean logic operations - basic laws of Boolean algebra - Demorgan's theorems - SOP & POS

Unit III: Logic Gates & Arithmetic Circuits

Introduction - Logic gates –Half Adder - Full Adder.

Unit IV: Combinational Circuits

Introduction - Multiplexers - Basic four input multiplexer – Application of multiplexer – Demultiplexer-1-to-4 De multiplexer.

Unit V: Flip Flops

Introduction - RS flip flop - D flip flop – JK flip flop – Application of flip flops

Suggested Topics for Group Discussion/ Presentation/ practical Exercises:

- ✓ Binary Arithmetic Operation
- ✓ De-Morgan's Theorem
- ✓ Logic Gates
- ✓ Multiplexer
- ✓ Applications of Flip flop

Suggested Readings:

i) Text Book:

Digital Circuits and design, Salivahanan & S.Arivazhagan, second Edition, Vikas Publishing house Pvt Ltd, 2018

ii) Reference Books:

1. Digital Principles and Applications, Donald Pleach, Albert Paul Malvino, GoutanSaha, Edition, McGraw Hill, 2014
2. Electronics II, Jose Robin, Indira Publication, 2003

Web Sources:

1. www.tutorialspoint.com/digital_circuits/index.htm

2. www.javatpoint.com/digital-electronics
3. <https://learnengineering.in/cs8351-digital-principles-and-system-design>
4. <https://studymaterialspdf.com/cs8351-digital-principles-and-system-design-cse>

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_PR_OGRAMMES_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 தமிழ்ப் 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 ஐ: இலக்கணம்

1. அணி - 10 வகைகள்
உவமை அணி, உருவக அணி, உயர்வுநவநிர்ச்சி அணி, வேற்றுமை அணி, தற்குறிப்பேற்ற அணி, வஞ்சப் புகழ்ச்சி அணி, தீவக அணி, பாவிச 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/a0411414.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

Contact 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 Bashevis 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 SCIENCE– UG - CBCS-
LOCF**

Title of the Course: Object Oriented Programming with C++ Semester: II

Course Code: LUCSCT21

Contact Hours: 5hrs/w

Credits: 4

Course Learning Outcomes:

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

- understand the features of C++ supporting OOP.
- understand and Apply Variable, Conditional Statements, Loops and Functions.
- understand how to apply the major object-oriented concepts to implement object oriented programs in C++, encapsulation, inheritance and polymorphism.
- understand advanced features of C++ specifically Stream I/O, templates and operator overloading.
- explain and Differentiate the Process of Problem Solving Using Object Oriented Programming Language.

Pre-Required Knowledge:

- ✓ Basic C programming language
- ✓ Function concept
- ✓ Derived data types

UNIT I: Principles of Object

Oriented Programming – Beginning with C++ - Tokens, Expressions and Control Structures – Functions in C++

UNIT II: Classes and Objects

Constructors and Destructors – New Operator – Operator Overloading and Type Conversions

UNIT III: Inheritance

Extending Classes – Pointers - Virtual Functions and Polymorphism

UNIT IV: Managing Console I/O Operations

Working with Files– Templates – Exception Handling

UNIT V: Standard Template Library

Manipulating Strings – Object Oriented Systems Development

Suggested Topics for Group Discussion/Presentation/practical Exercises:

- ✓ Applications of OOP
- ✓ 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, Sixth Edition, 2013

ii) Reference Book:

Ashok Kamthane, Programming in C++, Pearson Education, 2013.

Web Sources:

1. www.w3schools.com/cpp/cpp-intro.asp
2. <https://books.google.com.np/books?id=TN9wQjJDwp0C&printsec=copyright#v=onepage&q&f=false>
3. <https://www.allabout-engineering.com/programming-in-c-by-kamthane/>

Title of the Course: Data Structure and C++ - Practical	Semester: II
Course Code: LUCSCL21	Contact Hours: 4hrs/w
	Credits: 3

Course Learning Outcomes:

On completion of this course, the students will be 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.
- develop sophisticated applications using constructor and overloading concepts.

Program

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.

Suggested Readings:

1. Reference Books:

1. Fundamentals of data structures by Elis Horowitz, Sahnia, Galgotian publications 2008.
2. Data structures –Lipschuta, Tata Mc-Graw Hill, Schaum’s Outline Series 2007.

2. Web Sources:

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

Title of the Course: Data Structures and Algorithms	Semester: II
Course Code : LUCSCT22	Contact Hours: 3hrs/w
	Credits: 3

Course Learning Outcomes:

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

- ability to describe stack, queue and linked list operation.
- ability to have knowledge of tree concepts.
- apply algorithms for Searching and Sorting Methods
- develop and analyze Algorithms and calculate their Complexities.
- understand the applications of various data structures.

Pre-Required Knowledge:

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

Unit I: Stack

The concept of data structure, abstract data type, concept of list & array. Introduction to stack.

Stack – implementation of stack using array - implementation of stack using linked list - applications

Unit II: Queue

Implementation of queue using array - implementation queue using linked list -circular queue - applications.

Unit III: Linked list

Introduction to linked list - singly linked list - doubly linked list - circular linked list - applications.

Unit IV: Tree

Binary tree - insertion and deletion - binary tree traversal - threaded binary tree – applications.

Unit V: Searching and Sorting

Searching- Linear search - Binary search – Sorting: Bubble sort - Quick Sort – Merge Sort - Heap Sort.

Suggested Topics for Group Discussion/Presentation/practical Exercises:

- ✓ Types of Data Structure
- ✓ Types of Queues

- ✓ Types of Linked List
- ✓ Searching Techniques
- ✓ Binary Tree

Suggested Readings:

i) Text Book:

Data Structure using C++, MathuKrithghaVenkatesh, L.Margham Publications 2007.

ii) Reference Books:

1. Fundamentals of data structures by Elis Horowitz, Sahnia, Galgotian publications.
2. Data structures –Lipschuta, Tata Mc-Graw Hill, Schaum's Outline Series

Web Sources:

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

Course Title: Discrete Mathematics

Semester: II

Course Code: LUCSGE21

Contact Hours: 4hrs/w

Credit: 3

Course Learning Outcomes:

On completion of this course, the students will be 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:

- ✓ Set operations.

- ✓ Basic Concept of Algebra
- ✓ Basic Concept 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/practical Exercises:

- ✓ Venn diagrams
- ✓ Inverse of a Square Matrix
- ✓ Connectives
- ✓ 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.
3. Graph Theory with Application to engineering and computer science, Narsingh Deo.

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>

Course Title: Fundamentals of Computer

Semester: II

Course Code: LUCSSC21

Contact Hours: 0

Credit: 2

Course Learning Outcomes:

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

- understand the basics of computer.
- know the input devices in computer.
- know the output devices in computer.
- understand the memory allocation and memory devices.
- gain the knowledge of basic concepts of internet and web browsers.

Pre-Required Knowledge:

- ✓ Basic concept in computer.
- ✓ Able to work with computer.
- ✓ Uses of computer.

UNIT I: Introduction to computers

Definition and Characteristics – Functioning of a Computer – Generations of Computer – Hardware - Software.

UNIT II: Input Devices

Keyboard - Mouse – Trackball - Joystick – Digitizing Tablet – Scanners – Digital Camera - MICR – OCR-OMR - Touch Screen.

UNIT III: Output Devices

Monitor, Printers: Impact and Non-Impact printers.

UNIT IV: Memory

Primary memory: RAM and ROM. Secondary Memory: Floppy disk, Hard Disk & CD-ROM.

UNIT V: Internet

Internet Basics: World Wide Web – Search Engines – Web Browsers.

Suggested Topics for Group Discussion/Presentation/practical Exercises:

- ✓ Generations of Computer
- ✓ Input Devices
- ✓ Printers
- ✓ Primary memory
- ✓ Internet

Suggested Readings:

i) Text Book:

Donald H.Sanders ,Computer Today – McGraw Hill, 2nd Edition.

ii) Reference Book:

YaungKaiseng using the internet the easy way – Minerva Publications, reprint 2003.

Web Sources:

1. <https://onlinepaydayloaninstantapprovalwuw.blogspot.com/2018/06/download-now-computers-today-by-donald.html>

2. https://www.researchgate.net/publication/258339295_Fundamentals_Of_Computer_Studies

Course Title: Video Editing with Open shot	Semester: II
Course Code: LUCSSC22	Contact Hours: 0
	Credit: 2

Course Learning Outcomes:

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

- develop understanding of technical aspect of multimedia systems.
- understand and explain the storage mechanism and applicability of various file formats for audio, video and text media.
- develop various multimedia systems applicable in real time.
- create a multimedia component using various tools and techniques.
- apply the guidelines and standards of multimedia systems and to analyze the Performance of multimedia system.

Pre-Required Knowledge:

- ✓ Skills in multimedia
- ✓ Basic concept in video editing
- ✓ Familiarity in video editing softwares

UNIT-I: Introduction to video Editing

Open Shot Video Editor, Features, System Requirements, License, Download and install open short, Keyboard Shortcuts.

UNIT-II: Workspace and profiles

Main Toolbar - buttons to open, save, and export your video project. Timeline, Tracks & Layers, Profiles- Project Profile, Export Profile, Custom Profile.

UNIT- III: Working with Files

Files- Import Files, File Menu, Add File to Timeline, File Properties, Split Clip.

UNIT- IV: Video Clips

Cutting & Slicing, Preset Menu, Transform, Digital video effects, Adding text and titles Effects

UNIT- V: Transitions and Animation

Audio effects, audio mixing and editing, Animation, Key Frames, Bezier Presets for Animation, Import & Export.

Suggested Topics for Group Discussion/Presentation/practical Exercises:

- ✓ Download and install open short
- ✓ Layers and Time Line
- ✓ Split Clip
- ✓ Digital video effects
- ✓ audio mixing and editing

Suggested Readings:

1. Reference Book:

Jesse Russell, Ronald Cohn “Open shot Video Editor”
Publisher- “Book on Demand”,2012

2. Web Sources:

1. <http://www.openshot.org/static/files/user-guide/introduction.html>
2. <https://guides.library.ucsc.edu/DS/Resources/OpenShot>
3. <https://cdn.openshot.org/static/files/user-guide/index.html>

PART IV – VALUE EDUCATION – UG – CBCS - LOCF

Title of the Course: Value Education

Semester: II

Subject Code: LUP4VE21

Contact Hours: 2hrs/w

Credit: 2

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. Gandhian 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. <https://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 outcomes:

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

PART IV

Title of the paper: YOGA
Course Code : LUP4YA21

Semester: II
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: NEEDS OF 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-Halāsana
3. Pavana-Muktāsana
4. Naukasana
5. Ardha-shalabhasana
6. Shalabhasana
7. Makarasana
8. Bhujangāsana
9. Dhanurasana
10. Vakrasana
11. Chakrasana
12. Paschimottanasana
13. Ugrāsana
14. Gomukhasana
15. Padmasana
16. Siddhasana
17. Bhadrasana
18. Swastikkāsana
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-Halāsana

Viparithakarani-Mudra

Suggested Readings:

Text Books:

1. Yoga Practice I - The World Community Service Centre - Vethathiri Publications, Erode, 1st Ed - 2009, 4th 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 - 1st 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=lgzsuYggK5c>
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
Course code: LUP5NC21

Semester: II
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) திருமுலர் - மலமில்லை, மாசில்லை, பார்ப்பான்
அகத்திலே, அன்பும், சிவமும்
(ஆ) பட்டினத்தார் - ஐயிரண்டு திங்களாய், ஓடாமல் பாழுக்கு,
முதல் சங்கு அமுதாட்டும்
(இ) சிவவாக்கியார் - எங்குமுள்ள, ஓசையுள்ள, 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-c0124313-15342>

குற்றாலக்குறவஞ்சி

<https://www.tamilvu.org/ta/courses-degree-c012-c0123-html-c0123312-15036>

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 SCIENCE – UG - CBCS- LOCF

Course Title: Relational Database Management System	Semester: III
Course Code: LUCSCT31	Contact Hours: 4hrs/w
	Credit: 4

Course Learning Outcomes:

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

- have a high-level understanding of major DBMS components and their functions.
- be able to write SQL commands to create tables and indexes, insert/update/delete data, and query data in a relational DBMS.

- understand the ER model & relational model.
- apply various normalization techniques.
- know basic concepts of Transaction management.

Pre-Required Knowledge:

- ✓ MS Excel and Access
- ✓ Basic Concepts of Database system
- ✓ Basic computer server (backend) knowledge

UNIT I: Introduction to database

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: Structure Query Language

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: Normalization

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, Time Stamp and Deadlock

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/practical Exercises:

- ✓ ER Diagram
- ✓ Aggregate Function
- ✓ Encryption and Authentication.
- ✓ Normalization
- ✓ Time stamp based protocol

Suggested Readings:

i) Text Book:

Database System Concepts by Henry Korth and A.Silberschatz, The McGraw Hill Companies, 3rd edition 2009.

ii) Reference Books:

1. Alexix Leon & Mathews Leon, "Essential of DBMS", 2nd reprint, Vijay Nicole Publications, 2009.
2. Alexix Leon & Mathews Leon, "Fundamentals of DBMS", 2nd Edition, Vijay Nicole Publications, 2014.

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

Course Title: SQL & PL/SQL - Practical

Semester: III

Course Code: LUCSCL31

Contact Hours: 4hrs/w

Credit: 4

Course Learning Outcomes:

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

- understand, appreciate and effectively explain the underlying concepts of database technologies.
- create and maintain tables using PL/SQL.
- populate and query a database using SQL DML/DDL commands.

- programming PL/SQL including stored procedures, stored functions, cursors, packages.
- application development using PL/SQL & front-end tools.

Programs:

Demonstrate the following SQL commands and can take any back end RDBMS system for implementation purpose.

1. Data Definition of Base Tables.
2. DDL with Primary key constraints
3. DDL with constraints and verification by insert command
4. Data Manipulation of Base Tables and Views
5. Demonstrate the Query commands
6. Write a PL/SQL code block that will accept an account number from the user and debit an amount of Rs. 2000 from the account if the account has a minimum balance of 500 after the amount is debited. The Process is to fire on the Accounts table.
7. Write a PL/SQL code block to calculate the area of the circle for a value of radius varying from 3 to 7. Store the radius and the corresponding values of calculated area in a table Areas. Areas – radius, area.
8. Write a PL/SQL block of code for reversing a number. (Example: 1234 as 4321).
9. Create a transparent audit system for a table Client_master (client_no, name, address, Bal_due).

The system must keep track of the records that are being deleted or updated. The functionality being when a record is deleted or modified the original record details and the date of operation are stored in the auditclient (client_no, name, bal_due, operation, userid, oupdate) table, then the delete or update is allowed to go through.

Suggested Readings:

i) Reference Books:

1. Alexix Leon & Mathews Leon, "Essential of DBMS", 2nd reprint, Vijay Nicole Publications, 2009.

- Alexis Leon & Mathews Leon, "Fundamentals of DBMS", 2nd Edition, Vijay Nicole Publications, 2014.

Web Sources:

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

Course Title: Computer Organization and Architecture	Semester: III
Course Code: LUCSCT32	Contact Hours: 3hrs/w
	Credit: 3

Course Learning Outcomes:

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

- describe basic organization of computer and the architecture of 8086 microprocessor.
- implement assembly language program for given task for 8086 microprocessor.
- demonstrate control unit operations and conceptualize instruction level parallelism.
- demonstrate and perform computer arithmetic operations on integer and real numbers.
- categorize memory organization and explain the function of each element of a memory hierarchy.
- identify and compare different methods for computer I/O mechanisms.

Pre-Required Knowledge:

- ✓ Basic concept of Computers
- ✓ Identify various components of computer and their interconnection
- ✓ Basics concept of I/O Communication

UNIT I: Introduction to Computer and Operations

Basic of Computer, Von Neumann Architecture, Generation of Computer, Classification of Computers, Instruction Execution. Register Transfer and Micro operations: Register Transfer, Bus and Memory Transfers, Three-State

Bus Buffers, Memory Transfer, Micro-Operations, Register Transfer Micro Operations, Arithmetic Micro-Operations, Logic Micro-Operations, Shift Micro Operations.

UNIT II: Stack

Stack Organization, Register Stack, Memory Stack, Reverse Polish Notation. Instruction Formats, Three- Address Instructions, Two – Address Instructions, One - Address Instructions, Zero - Address Instructions, RISC Instructions, Addressing Modes. RISC & CISC and their characteristics.

UNIT III: Algorithms

Addition And Subtraction with Signed-Magnitude, Multiplication Algorithm, Booth Multiplication Algorithm, Array Multiplier, Division Algorithm, Hardware Algorithm, Divide Overflow, Floating-Point Arithmetic Operations, Decimal Arithmetic Operations, BCD Adder, BCD Subtraction.

UNIT IV: Processor and Memory

Modes Of Transfer, Priority Interrupt, DMA, Input-Output Processor (IOP), CPU-IOP Communication. Memory Organization: Memory Hierarchy, Main Memory, Auxiliary Memory, Cache Memory, Virtual Memory, Associative Memory.

UNIT V: Multiprocessors

Control memory – Address sequencing – Design of Control unit. Pipelining: Parallel Processing, Pipelining - Arithmetic Pipeline, Instruction Pipeline. Multiprocessors: Characteristics of Multiprocessors, Interconnection Structure: Time-Shared Common Bus, Multi-Port Memory, Crossbar Switch, Multistage Switching Network, Hypercube Interconnection.

Suggested Topics for Group Discussion/Presentation/practical Exercises:

- ✓ Micro operations
- ✓ Address Instructions
- ✓ Booth Multiplication Algorithm
- ✓ Memory Organization

- ✓ Pipelining

Suggested Readings:

i) Text Book:

“Computer System Architecture”, M.Morris Mano, Pearson Education 2008.

ii) Reference Book:

1. “Computer System Architecture”, John. P. Hayes, July 2017.
2. “Computer Organization, C. Hamacher, Z. Vranesic, S.Zaky, McGraw Hill, June 1996.
3. “Computer Architecture and parallel Processing”, Hwang K. Briggs, 1986.

Web Sources:

1. <https://easyengineering.net/computer-system-architecture-by-mano-m-morris/>
2. <https://collectallpdf.blogspot.com/2020/03/computer-organisation-and-architecture-morris-mano-hayes-pdf.html>
3. https://kupdf.net/download/computer-architecture-by-kai-hwang-kai-hwang-amp-f-a-briggs-computer-architecture-and-parallel-processing-mcgraw-hill_5aeda3dee2b6f5a668910cf4_pdf

Course Title: VB.NET-Practical

Semester: III

Course Code: LUCSDL31

Contact Hours: 3hrs/w

Credit : 3

Course Learning Outcomes:

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

- understanding of various features Visual VB.NET Framework
- design and develop event-driven GUI applications using VB.NET.
- design and develop software in team.
- develop windows applications using databases.
- identify challenges involved in VB.NET framework programming.

Pre-Required Knowledge:

- ✓ GUI (Graphical User Interface)
- ✓ Micro soft access & SQL
- ✓ Event handling

Programs:

1. Calculate Area of Circle using Console Application.
2. Area of triangle using Window Application.
3. Currency Conversion using window application
4. Salary Calculation using window application
5. Retrieve Images using Combo Box and Button
6. Simulate a Paint Brush Application
7. Move an Object using Timer Control
8. Develop a Math Calculator
9. Create an Application using Form Controls
10. Develop a program which makes use of String and String Builder Class
11. Create an application using the form controls and perform all validation operations.
12. Create a Text Pad Application.
13. Develop a VB.NET application using menu
14. Create an application using Common Dialog Controls.
15. Create a database driven application to manage employee database.

Suggested Readings:**i) Reference Books:**

1. Steven Holzner VB.Net Programming-Black Book-Dreamtech Publications
2. Evangelos Petroustos Mastering VB.Net - BPB Publications

Web Sources:

1. <http://rajkumardharmaraj.files.wordpress.com/2019/01/bsc-cs-vb.net-lab-record-1.pdf>
2. <https://www.tutorialspoint.com/vb.net/index.htm>
3. <https://www.guru99.com/vb-net-tutorial.html>

Course Title: Corel Draw – Practical

Semester: III

Course Code: LUCSDL32

Contact Hours: 3hrs/w

Credit: 3

Course Learning Outcome:

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

- students shall have skill to conceptualize and create Logos, various types of print designs.
Pamphlets, Posters, Invitation cards, Greeting cards, Wrappers, Advertisements, Banners and Package
- corelDraw enables students to acquire practical proficiency for work with 2D graphics.
- able to use all program features for implementation of their own ideas and projects and for poster presentation of various semester projects.
- develop the skill to conceptualize and create Logos, various types of print designs.
- gain creative skill for Pamphlets, Posters, Invitation cards, Greeting cards, Wrappers, Advertisements, Banners and Package

Pre-Required Knowledge:

- ✓ Basic Graphics Software
- ✓ Filing system
- ✓ File format of picture, audio and video editing

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.

Suggested Readings:

1. Reference Books:

1. Dtp Training Guide Paperback, by Satish Jain, Publications (1 January 2015)
2. CorelDRAW X8: The Official Guide, 12th Edition, Gary David Bouton, February 2017McGraw-Hill

Web Sources:

1. <https://pdfonlines.club/search?query=corel+dra>
2. <https://www.coreldraw.com/en/pages/tutorials/technical-suite/>
3. https://www.entheosweb.com/free_resources.asp

Course Title: Numerical Methods	Semester: III
Course Code: LUCSGE31	Contact Hours: 3hrs/w
	Credit : 3

Course Learning Outcomes:

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

- apply Numerical analysis which has enormous application.
- critical thinking with Calculation and integration of errors in numerical method.
- apply numerical method to obtain approximate solutions to mathematical problems.
- assess the reliability of the numerical results.
- determine the effect of round off error or loss of significance.

Pre-Required Knowledge:

- ✓ Basic concept of set operations

- ✓ Fundamental of matrix operations
- ✓ Basic knowledge in logic and graph

Unit I: Algebraic & Transcendental Equations

Error in Numerical competition- Iteration method – Bisection method –Regular false method –Newton Raphson method.

Unit II: Simultaneous Equations

Gauss Elimination Method –Calculation of inverse of a matrix –Gauss Jordan method-Gauss serial Iteration method.

Unit III: Finite Differences

Introduction – Difference Operators – Other Difference Operators.

Unit IV: Newton's Interpolation Formulae

Central difference interpolation formulae-Lagrange's interpolation formulae-inverse interpolation.

Unit V: Numerical

Integration- Numerical integration: Newton-Cotes - Quadrature formulae Trapezoidal Rule-Simpson's1/3 Rule-Simpson's3/8 Rule.

Suggested Topics for Group Discussion/Presentation /practical Exercises:

- ✓ Newton Raphson method
- ✓ Gauss Elimination Method
- ✓ Difference Operators
- ✓ inverse interpolation
- ✓ Numerical integration

Suggested Readings Books:

i) Text Bok:

Numerical methods, S.Arumugam, A.Thangapandi Issac, A.Somasundaram, 2nd Edition, Scitech publications (India) Pvt Ltd.

ii) Reference Books:

1. Numerical Methods for Scientific and Engineering Computation, M.K.JainS.R.K.Iyengar and R.K.Jain, New Age International Private Limited, 1999.
2. Numerical Methods, S.Kalavathy, Thomson Learning (a division of Asia Pte.Ltd), 2004.

Web Sources:

1. https://www.academia.edu/8565134/Numerical_Methods_For_Scientific_And_Engineering_Computation_M_K_Jain_S_R_K_Iyengar_And_R_K_Jain
2. <https://pdfcoffee.com/numerical-methods-for-scientific-and-engineering-computationm-k-jain-s-r-k-iyengar-and-r-k-jain-pdf-free.html>
3. http://www.ikiu.ac.ir/public-files/profiles/items/090ad_1410599906.pdf

Course Title: Multimedia and Animation

Semester: III

Course Code: LUCSSC31

Contact Hours: 0

Credit: 2

Course Learning Outcome:

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

- develop understanding of technical aspect of multimedia systems.
- understand and explain the storage mechanism and applicability of various file formats for audio, video and text media.
- develop various multimedia systems applicable in real time.
- create a multimedia component using various tools and techniques.
- apply the guidelines and standards of multimedia systems and to analyze the Performance of multimedia system.

Pre-Required Knowledge:

- ✓ Basic concept in Graphics Software

- ✓ Knowledge in Filing system
- ✓ Simple photo and video editing

UNIT I: Introduction to Multimedia

Introduction – Products and evaluation – Hardware Systems and Software – Objectives- Multimedia-Meaning- History of Multimedia Market-types of Products—Evaluation- Operating System and software.

UNIT II: Text and Graphics

Elements of text-Using Text in Multimedia Application- Elements of graphics-Images and Color-Graphics File and Application Formats.

UNIT III: Digital Audio and Video

Digital Audio and Video-Characteristics of Sound and digital Audio-Using Audio in multimedia Application- background on video-Characteristics of digital Video.

UNIT IV: Product Design

Product design and authoring tools-Building Blocks- Storyboarding-Selecting the Right Authoring Paradigm.

UNIT V: Internet in Multimedia

Internet and multimedia-Multimedia Con-side rations for the internet-Design Consideration for Web Pages.

Suggested Topics for Group Discussion/Presentation/ practical Exercises:

- ✓ History of Multimedia Market
- ✓ Using Text in Multimedia Application
- ✓ Characteristics of Sound and digital Audio
- ✓ Storyboarding
- ✓ Internet and multimedia

Suggested Readings:

i) Text Books:

1. David Hillman, Multimedia.
2. Klara Nahrstedt and RalfSteinmetz “Mutimedia Application”.

ii) Reference Book:

Tay Vaughan, Multimedia: Making it work, TataMcGraew-Hill Publishing Company Ltd., New Delhi Fifth Edition, 2000.

Web Sources:

1. <https://thebookee.net/mu/multimedia-technology-and-application-david-hillman>
2. <https://in.b-ok.as/book/2119303/3d5c69?dsource=recommend>
3. <http://docplayer.net/24782695-Multimedia-making-it-work.html>

Course Title: Computer Hardware and Troubleshooting	Semester: III
Course Code: LUCSSC32	Contact Hours: 0
	Credit: 2

Course Learning Outcomes:

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

- understand hardware components in computer system.
- install, configure Operating Systems and device drivers.
- install, configure and maintain various components in computer system and peripheral Devices.
- diagnose faults, repair and maintain computer system and its peripherals
- get employability skill in hardware and troubleshooting.

Pre-Required Knowledge:

- ✓ Basic Input and Output devices
- ✓ Concept in computer functioning
- ✓ Memory management

UNIT I: Inside the PC

Inside the PC: Core Components, Identify different type and generation of computer, Identify devices required for using laptops, Identify components which makes the system

and specify its importance. Identify various types of ports and its connecting devices.

UNIT II: Motherboard

Motherboard: definition, Components/connections in motherboard, functional block diagram Central Processing Unit (CPU): CPU Speeds, Word Size, Data Path, Internal Cache memory, Slots and sockets, CISC vs RISC processor, CPU chips preprocessors

Motherboard

UNIT III: Input Devices and Output Devices

Input Devices and Printers, Keyboard: Keyboard operation, Keyboard Types, Types of Key Switches (Membrane, mechanical, rubber dome, capacitive) Keyboard interfaces, Mouse: Types, Operation, Interfaces, Scanner: Scanner Types, Image quality measurement, Types of Printers, Printer Interfaces, Ink-jet Printer: Parts, working principle, LaserJet Printer: Parts, working principle.

UNIT IV: Monitor and Display Adapters

Monitor and Display Adapters Video Basics (CRT parameters), VGA monitors, Digital Display Technology- Thin Displays, Liquid Crystal Displays, Plasma Displays, Light Emitting Displays, Graphics Cards: Components of a card, Accelerated Video cards, CGA, EGA, VGA.

UNIT V: Trouble Shooting

Trouble Shooting and Preventive Maintenance, POST: Functions, IPL Hardware, Test Sequence, Error messages, troubleshooting: possible problems and diagnosis in Motherboard, Keyboard, Hard Disk Drive, Printer, Preventive maintenance tools

Suggested Topics for Group Discussion/Presentation/practical Exercises:

- ✓ Generation of Computer
- ✓ Central Processing Unit (CPU)
- ✓ Input Devices
- ✓ Graphics Cards

✓ troubleshooting

Suggested Readings:

i) Text Book:

1. Computer Installation and Servicing, D Balasubramanian, Tata McGraw Hill Education Private Limited, 2005.

ii) Reference Books:

1. The complete PC Upgrade & Maintenance Guide, Mark Minasi, BPB Publications
2. IBM PC and clones, Govind Rajalu, Tata McGraw Hill Education Private Limited, 1991

Web Sources:

1. <https://books.google.co.in/books?id=XD68NYRPD9oC&printsec=frontcover#v=onepage&q&f=false>
2. <https://sites.google.com/a/gn.books-now.com/en300/9780782120394-30stinilGEstelbi72>

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 - கடவுள் விரும்பும் மொழி
5. கண்ணதாசன் - கமலப்பூவே
6. வாலி - இலக்கிய நாயகன் இராமன்
7. அப்துல்ரகுமான் - உழவர்களைப் பாடுவோம்
8. மு.மேத்தா - தேசப்பிதாவுக்கு ஒரு
தெருப்பாடகனின் அஞ்சலி
9. வைரமுத்து - இருபது கட்டளைகள்
10. நாட்டுப்புறப்பாடல் - உழவர்பாட்டு நா.வானாமலை
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 புக 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. Plunge : 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 SCIENCE – UG - CBCS- LOCF

Course Title: Programming in Java

Semester: IV

Course Code: LUCSCT41

Contact Hours: 4hrs/w

Credit: 4

Course Learning Outcomes:

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

- understand the use of OOP's concepts.
- understand the use of packages & interface in Java.
- develop & understand exception handling.
- design GUI based applications and develop applets for web applications.
- solve real world problems using OOP techniques.

Pre-Required Knowledge:

- ✓ Basic concept of Programming (C, C++)
- ✓ OOPS Concept
- ✓ Loop, Functions 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-Classpath-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/ practical Exercises:

- ✓ Java Virtual Machine
- ✓ Type Casting
- ✓ Wrapper Classes
- ✓ Multithreading
- ✓ Applet

Suggested Readings:

i) Text Book:

Java Programming, P.Rizwan Ahamad Edition, Margham Publications 2013.

ii) Reference Books:

1. Java Programming: A Practical Approach, C.Xavier, Tata McGraw Hill, 2011.
2. Programming with Java A Primer, E.Balagurusamy, Second Edition, Tata McGraw Hill publishing company Ltd.

Web Sources:

1. <https://www.scribd.com/document/391796453/Java-Programming-pdf>
2. [https://layweetersandlopvi\)wixsite.com/repadismisch/post/java-programming-a-practical-approach-c-xavier-pdf](https://layweetersandlopvi)wixsite.com/repadismisch/post/java-programming-a-practical-approach-c-xavier-pdf)
3. https://books.google.co.in/books?id=uYKYS_kH_YcC&printsec=frontcover#v=onepag e&q&f=false

Course Title: Programming in Java- Practical	Semester: IV
Course Code: LUCSCL41	Contact Hours: 4hrs/w
	Credit: 4

Course Learning Outcomes:

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

- use an IDE to write compile, run and test simple object-oriented Java programs.
- validate input in a Java program.

- read and make elementary modifications to Java programs that solve real-world problems to be knowledgeable enough about basic Java language syntax and semantics to be able to successfully read and write Java computer programs;
- able to create a web page concept of menu by using applet.
- design a web page with mouse event handling

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

Suggested Readings:

i) Reference Books:

1. E. Balagurusamy, "Programming with Java", Tata McGraw-Hill Education India, 2014
2. Sachin Malhotra & Saurabh Choudhary, "Programming in JAVA", 2nd Ed, Oxford Press

Web Sources:

1. <https://www.scribd.com/document/391796453/Java-Programming-pdf>
2. [https://layweetersandlopvi\)wixsite.com/repadismisch/post/java-programming-a-practical-approach-c-xavier-pdf](https://layweetersandlopvi)wixsite.com/repadismisch/post/java-programming-a-practical-approach-c-xavier-pdf)
3. https://books.google.co.in/books?id=uYKYS_KH_YcC&printsec=frontcover#v=onepage&q&f=false

Title of the Course: Open Source Technology	Semester: IV
Course Code: LUCSDS41	Contact Hours: 3hrs/w
	Credits: 3

Course Learning Objectives:

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

- gain experience using open source tools, languages and frameworks to prepare for careers in software development.
- understand the open source software history, philosophy and copyrights
- gain knowledge in basics of Community
- understand the Apache server.
- understand the basics of open source ethics.

Pre-Required Knowledge:

- ✓ Web Programming Skills
- ✓ MySQL.
- ✓ HTML Tags

UNIT I: Basics of Open Source Technology

Introduction to 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: Principles and methodologies

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 copyleft, Patents Economics of FOSS : Zero Marginal Cost, Income-generation opportunities, Problems with traditional commercial software, Internationalization

UNIT III: Community Building

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

UNIT IV: Resources for Open Source Technology

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

UNIT V: Social Impacts of Open Source Technology

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/ practical Exercises:

- ✓ GNU Project
- ✓ Copyrights and Copyleft
- ✓ Development Life Cycle
- ✓ Apache Server
- ✓ Open Source Ethics

Suggested Readings:

i) Text Books:

1. Sumitabha Das “Unix Concepts and Applications, Tata McGraw Hill Education 2006

2. The Official Ubuntu Book, 8th Edition
3. Kailash Vedula, Bhavyesh Gandhi, “Open Source Technology”, University Science press

ii) Reference Books:

1. Paul Kavanagh, “Open Source Software: Implementation and Management”, Elsevier Digital Press
2. The Linux Documentation Project: <http://www.tldp.org>
3. Docker Project Home : <http://www.docker.com>

Websites and e-Learning Sources:

1. <https://lootdealer.in/bsc-cs-sem-1-books/unix-concepts-and-applications-pdf/>
2. <https://annamalaiuniversity.ac.in/studport/download/Handbook/2018-19/Science/Computer%20and%20Information%20Science/new%20regulation/M.Sc%20Software%20Engineering-2019%20%E2%80%932020.pdf>

Course Title: System Software	Semester: IV
Course Code: LUCSDS42	Contact Hours: 3hrs/w
	Credit: 3

Course Learning Outcomes

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

- understand machine architecture and addressing modes.
- know what are the assemblers and their algorithms.
- gain the knowledge of loaders.
- know the concept of macro features and their process.
- understand the concept of interface.

Pre-Required Knowledge:

- ✓ Computer Software and Hardware.
- ✓ Input and Output devices.
- ✓ Computer memory management.

UNIT I: Instructional Computer

The Simplified Instructional Computer (SIC) - Machine architecture - Data and instruction formats - addressing modes - instruction sets - I/O and programming.

UNIT II: Assembler

A simple SIC assembler – Assembler algorithm and data structures - Machine dependent assembler features - Instruction formats and addressing modes – Program relocation - Machine independent assembler features - Literals – Symbol-defining statements – Expressions - One pass assemblers and Multi pass assemblers - Implementation example - MASM assembler.

UNIT III: Loader

Design of an Absolute Loader – A Simple Bootstrap Loader - Machine dependent loader features - Relocation – Program Linking – Algorithm and Data Structures for Linking Loader - Machine-independent loader features - Automatic Library Search – Loader Options - Loader design options- Linkage Editors – Dynamic Linking – Bootstrap Loaders - Implementation example - MSDOS linker

UNIT IV: Processor

Macro Definition and Expansion – Macro Processor Algorithm and data structures - Machine-independent macro processor features - Concatenation of Macro Parameters – Generation of Unique Labels – Conditional Macro Expansion – Keyword Macro Parameters-Macro within Macro-Implementation example - MASM Macro Processor – ANSI C Macro language.

UNIT V: Interface

Overview of the Editing Process - User Interface – Editor Structure - Interactive debugging systems - Debugging functions and capabilities – Relationship with other parts of the system – User-Interface Criteria.

Suggested Topics for Group Discussion/Presentation/practical Exercises:

- ✓ Machine Architecture
- ✓ One pass assemblers

- ✓ Bootstrap Loaders
- ✓ MASM Macro Processor
- ✓ Debugging functions and capabilities

Suggested Readings:

i) Text Book:

Leland L. Beck, “System Software – An Introduction to Systems Programming”, 4 th Edition, Pearson Education Asia, 2010.

ii) Reference Books:

- 1.D. M. Dhamdhere, “Systems Programming and Operating Systems”, Second Revised Edition, Tata McGraw-Hill, 2009.
2. John J. Donovan, “Systems Programming”, Tata McGraw-Hill Edition, 2009.
3. John R. Levine, Linkers & Loaders – Harcourt India Pvt. Ltd., Morgan Kaufmann Publishers, 2009.

Web Sources:

1. https://kupdf.net/download/system-software-an-introduction-to-systems-programming-leland-beck-third-editionpdf_5c707f0be2b6f5fe16c9e917_pdf
2. https://books.google.co.in/books?id=s7zgF7InxlgC&printsec=frontcover&source=gbs_ge_summary_r&cad=0#v=onepage&q&f=false
3. https://www.google.co.in/books/edition/Systems_Programming_and_Operating_System/s7zgF7InxlgC?hl=en&gbpv=1&dq=John+R.+Levine,+Linkers+%26+Loaders+%E2%80%93+Harcourt+India+Pvt.+Ltd.,pdf&printsec=frontcover

Course Title: Operation Research	Semester: IV
Course Code: LUCSGE41	Contact Hours: 3hrs/w
	Credit: 3

Course Learning Outcome:

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

- give an appreciation of strategic importance of operations and supply chain management in a global business environment.

- develop a skill set for quality and process improvement.
- it is used to find optimal or near optimal solutions to complex decision making problems.
- develop a working knowledge of concepts and methods related to designing and managing operations and supply chains.
- it is used in finding maximum or minimum in real world objective.

Pre-Required Knowledge:

- Basics in mathematical formulation
- Basics in graphical solution
- Fundamentals of initial feasible solution

Unit I: Linear Programming

Linear Programming Problem – mathematical Formulation: Introduction – Linear Programming Problem – mathematical Formulation of the problem – Illustration on mathematical Formulation of LPP's.

Unit II: Graphical Solution

Linear Programming problem – Graphical Solution: Introduction – Graphical Solution method – Some Exceptional Cases.

Unit III: Simplex Method

Linear Programming Problem – Simplex method: Introduction-Fundamental Properties of solutions – The Computational Procedure (Simplex Method)

Unit IV: Transportation Problem

Transportation Problem: Solution of a transportation problem – Find an initial basic Feasible Solution (NWCM, LCM, VAM)

Unit V: Assignment Problem

Introduction – Mathematical Formulation of the problem – Solution methods of Assignment Problem (Hungarian Assignment method) - Travelling Salesman Problem.

Suggested Topics for Group Discussion/Presentation/ practical Exercises:

- ✓ Linear Programming Problem
- ✓ Graphical Solution Method
- ✓ Simplex Method
- ✓ Least Cost Method
- ✓ Hungarian Assignment

Suggested Readings:

i) Text Book:

Kantiswarup, P.K. Gupta, Manmohan, 'An Introduction to management Science Operations Research', Sultan Chand & Sons, Educational Publishers, New Delhi ,2012.

ii) Reference Books:

1. Problems in Operations Research, P.K.Gupta, ManMohan, Sultan Chand & Sons, 2009.
2. Operations Research by S.D.Sharma, KedarNath Ram Nath& Co, 2004

Web Sources:

1. <http://138.197.216.208/upload/read.php?article=book%20kanti%20swaroop%20gupta%20p%20k%20man%20mohan%20operations%20research&code=cab1e1c97c5d75e7e6a10c007f20c90>
2. https://pdfgoal.com/downloads/book_kanti_swaroop_gupta_p_k_man_mohan_operations_research_pdf
3. <https://pdfcoffee.com/vdocumentsmxsd-sharma-operations-research-pdf-sharma-operations-research-pdf-2014-1-1pdf-pdf-free.html>

Course Title: Distributed Programming

Semester: IV

Course Code: LUCSSE41

Contact Hours: 2hrs/w

Credit: 2

Course Learning Outcomes:

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

- fundamental concepts of distributed systems.
- understand the concepts of ADO.Net

- study the basics of ASP.Net
- understand the mobile application development.
- study the concepts of Web services.

Pre-Required Knowledge:

- ✓ Basic in Internet (server, client and cloud).
- ✓ C and C++ Programming.
- ✓ HTML and JavaScript.

UNIT I: Distributed Computing

Introduction to distributed Computing – Challenges involved in establishing remote connection – Strategies involved in remote computation – Current Distributed computing practices through Dot Net and Java technologies.

UNIT II: ADO. NET

Advanced ADO. NET – Disconnected Data Access – Gridview, Details View, Form View controls – Crystal Reports – Role of ADO. NET in Distributed Application

UNIT III: Advanced ASP. NET

AdRotator, Multiview, Wizard and Image Map Controls – Master Pages – Site Navigation – Web Parts – Uses of these controls and features in Website development

UNIT IV: Features of ASP.NET

Advanced features of ASP.NET – Security in ASP. NET – State Management in ASP. NET – Mobile Application development in ASP. NET – Critical usage of these features in Website development.

UNIT V: Web services

Web services – Role of Web services in Distributed Computing – WSDL, UDDI, SOAP concepts involved in Web Services – Connected a Web Service to a Data Base – Accessing a Web Service through ASP. NET application.

Suggested Topics for Group Discussion/Presentation/practical Exercises:

- ✓ Distributed Computing
- ✓ Crystal Reports

- ✓ Master Pages
- ✓ features of ASP.NET
- ✓ Connected a Web Service to a Data Base

Suggested Readings:

i) Text Book:

Walther, "ASP.NET 3.5", SAMS Publication, 2005

ii) Reference Books:

1. Steven Holzner VB.Net Programming-Black Book-Dreamtech Publications
2. Evangelos Petroustos Mastering VB.Net - BPB Publications
3. Mathew Macdonald -The Complete Reference Asp.Net- TMH

Web Sources:

1. <http://dotnettricks-abdul.in/Contents/Unleased%20Book.pdf>
2. <https://www.tutorialride.com/web-technologies.htm>
3. https://www.tutorialspoint.com/web_developers_guide/web_basic_concepts.htm
4. <https://www.w3schools.com/>

Course Title: Ethics in Information Security	Semester: IV
Course Code: LUCSSE42	Contact Hours: 2hrs/w
	Credit : 2

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 Identification

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 Reading:

i) Text Book:

1. 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 1-3CRC Press LLC, 2004 (Reprint 2009)
2. Stuart McClure, Joel Scrambray, George Kurtz, "Hacking Exposed", Tata McGraw-Hill, 2017.

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>

Course Title: Office Automation -Practical	Semester: IV
Course Code: LUCSSL41	Contact Hours: 2/hrs
	Credit : 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.
4. Tables and manipulation: Creation, Insertion, Deletion (Columns and Rows). Create a mark sheet.
5. 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.

Suggested Reading:

i) Reference Book:

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

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>

Course Title: Flash – Practical

Semester: IV

Course Code: LUCSSL42

Contact Hours: 2hrs/w

Credit: 2

Course Learning Outcomes:

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

- know how to create a simple animation using Flash

Programs:

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

Suggested Readings:

i) Reference Book:

Reference Books: Tay Vaughan, Multimedia: Making it work, TataMcGraew-Hill Publishing Company Ltd., New Delhi Fifth Edition, 2000.

Web Sources:

1. <https://www.cs.waikato.ac.nz/~mhall/126/Prac1.pdf>
2. <http://totylta.freedomdns.com/88768.shtml>
3. <https://in.b-ok.as/book/2119303/3d5c69?dsource=recommend>

Course Title: Internet and its applications

Semester: IV

Course Code: LUCSSC41

Contact Hours: 0

Credit: 2

Course Learning Outcome:

On completion of this course, the students will be 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:

- ✓ Internet (server, client, cloud, modem and router).
- ✓ Computer Fundamentals
- ✓ Computer input and output devices

Unit I: Introduction to Internet

Introduction to Computers- Types of computers – History of Internet-History of World Wide Web – Web Resources.

Unit II: Web Browsers

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

Unit III: Electronic mail

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

Unit IV: HTML Tags

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

Unit V: Frames and Forms

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

Suggested Topics for Group Discussion/Presentation/practical Exercises:

- ✓ History of World Wide Web
- ✓ File Transmission Protocol (FTP)
- ✓ Electronic mail
- ✓ HTML Lists
- ✓ Simple Web Page Creation.

Suggested Readings:**i) Text Book:**

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

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.

Web Sources:

- 1.https://kupdf.net/download/fundamentals-of-information-technology-by-alexis-leon-pdf_59ac4277dc0d606720568edf_pdf
- 2.<https://thebookee.net/ha/harley-hahn-1997-the-internet-complete-reference-tata-mcgraw-hill-pdf>
- 3.https://www.tutorialspoint.com/internet_technologies/internet_services.htm

Course Title: Cyber Security & Forensics	Semester: IV
Course Code: LUCSSC42	Contact Hours: 0
	Credit: 2

Course Learning Outcomes:

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

- classify the symmetric encryption techniques
- Illustrate various Public key cryptographic techniques
- evaluate the authentication and hash algorithms.
- discuss authentication applications
- summarize the intrusion detection and its solutions to overcome the attacks.
- basic concepts of recovery and ethics.

Pre-Required Knowledge:

- ✓ Computer Fundamentals
- ✓ Internet Concepts.
- ✓ Virus and Antivirus

Unit I: Cyber Security

Introduction to Cyber Security- Implementing Hardware Based Security - Software Based Firewalls - Security Standards - Assessing Threat Levels.

Unit II: Cyber Crime

Forming an Incident Response Team -Reporting Cybercrime - Operating System Attacks - Application Attacks -

Reverse Engineering & Cracking Techniques and Financial Frauds

Unit III: Cyber Forensic

Computer and Cyber Forensic Basics- Introduction to Computers - Computer History –Software – Hardware – Classification - Computer Input-Output Devices - Basic Computer Terminology – Internet – Networking - Computer Storage - Cell Phone / Mobile Forensics.

Unit IV: Computer Ethics

Computer Ethics and Application Programs - Cyber Forensic Basics- Introduction to Cyber Forensics - Storage Fundamentals - File System Concepts - Data Recovery - Operating System Software and Basic Terminology.

Unit V: Data and Evidence Recovery

Introduction to Deleted File Recovery - Formatted Partition Recovery - Data Recovery Tools - Data Recovery Procedures and Ethics - Preserve and safely handle original media - Use computer forensics software tools to cross validate findings in computer evidence-related cases.

Suggested Topics for Group Discussion/Presentation/practical Exercises:

- ✓ Hardware Based Security
- ✓ Application Attacks
- ✓ Cyber Security
- ✓ Cyber Forensics
- ✓ Data Recovery Procedures

Suggested Readings:

i) Text Books:

1. Computer Forensics, Computer Crime Investigation by John R. Vacca, Firewall Media, New Delhi)
2. Computer Forensics and Investigations by Nelson, Phillips Enfinger, Stuart, CENGAGE Learning

ii) Reference Books:

1. Real Digital Forensics by Keith J. Jones, Richard Bejtlich, Curtis W. Rose, Addison Wesley Pearson Education
2. Forensic Compiling, A Tractitioneris Guide by Tony Sammes and Brian Jenkinson, Springer International edition.
3. Computer Evidence Collection & Presentation by Christopher L.T. Brown, Firewall Media.

Web Sources:

1. <https://mrcet.com/pdf/Lab%20Manuals/IT/R15A0533%20CF.pdf>
2. <https://venghemit.firebaseio.com/aa178/computer-forensics-computer-crime-scene-investigation-with-cd-rom-networking-series-by-john-r-vacca-1584500182.pdf>
3. <https://www.smartzworld.com/notes/computer-forensics-pdf-notes-cf/>

Course Title: Operating System

Semester: V

Course Code: LUCSCT51

Contact Hours: 5hrs/w

Credit: 4

Course Learning Outcomes:

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

- gain knowledge of various types of operating systems
- able to use various commands of different OS.
- describe the role of OS in their management policies and algorithms.
- understand the process management policies and scheduling of process by CPU.
- know different approaches to memory management.
- use system calls for managing processes memory of the file systems

Pre-Required Knowledge:

- ✓ Basics in operating systems.
- ✓ Computer Software and Hardware

- ✓ Computer Memory management.

Unit I: Introduction to Operating System

Introduction - History of operating system- Different kinds of operating system – Operating system concepts - System calls-Operating system structure.

UNIT II: Processes and Threads

Processes - threads - thread model and usage - inter process communication.

UNIT III: Memory Management

Scheduling - Memory Management: Memory Abstraction - Virtual Memory - Page replacement algorithms.

UNIT IV: Deadlocks

Resources- introduction to deadlocks - deadlock detection and recovery - deadlocks avoidance - deadlock prevention. Multiple processor system: multiprocessors - multi computers.

UNIT V: File Handling

Input / Output: principles of I/O hardware - principles of I/O software. Files systems: Files - directories - files systems implementation - File System Management and Optimization.

Suggested Topics for Group Discussion/Presentation/practical Exercises:

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

Suggested Readings:

i) Text Book:

Andrew S. Tanenbaum, "Modern Operating Systems", 2nd Edition, PHI private Limited, New Delhi, 2008.

ii) Reference Books:

1. William Stallings, "Operating Systems - Internals & Design Principles", 5th Edition, Prentice - Hall of India private Ltd, New Delhi, 2004.

2. Sridhar Vaidyanathan, "Operating System", 1st Edition, Vijay Nicole Publications, 2014.
3. Operating Systems, Deitel and Deitel, 3rd Edition, Pearson Education, 2011
4. Operating Systems - E. Madnick And John J. Donovan, Tata McGraw Hill Book Company Ltd.

Web Sources:

1. <http://stst.elia.pub.ro/news/SO/Modern%20Operating%20System%20-%20Tanenbaum.pdf>
2. https://kupdf.net/download/operating-systems-deitel-3rd-edition-1-pdf_58aa0f676454a7ee1bb1e8f5_pdf
3. https://dlscrib.com/download/stuart-e-madnick-john-j-donovan-operating-sys-bookos-org_586241486454a72869361302_pdf

Course Title: Programming in Python

Semester: V

Course Code: LUCSCT52

Contact Hours: 6hrs/w

Credit: 5

Course Learning Outcome:

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

- interpret the fundamental python syntax and semantics and be fluent in the use of python control flow statement.
- express proficiency in the handling of strings and functions.
- determine the methods to create and manipulate python programs by file handling and MySQL.
- identify the commonly used operation like graphics program and image processing.
- express proficiency in version control system

Pre-Required Knowledge:

- ✓ Programming Skills
- ✓ File Operations
- ✓ Database

UNIT I: Introduction to Python

Why Python - Installing in various Operating Systems - Executing Python Programs - Basic Programming concepts - Variables, expressions and statements - Input/ Output – Operators.

UNIT II: Functions

Conditions - Functions - Arguments - Return values - Iteration - Loops - Strings -Data Structures - Lists - Dictionaries - Tuples - Sequences - Exception Handling.

UNIT III: OOPs Concepts and MYSQL

File Handling - Modules - Regular Expressions - Text handling - Object Oriented Programming - Classes - Objects - Inheritance - Overloading - Polymorphism Interacting with Databases - Introduction to MySQL - interacting with MySQL - Building a address book with add/edit/delete/search features.

UNIT IV: Graphics programming

Introduction to Graphics programming - Introduction to GTK - PyGTK - Developing GUI applications using pyGTK - Scientific Programming using NumPy / SciPy - Image Processing - Processing multimedia files -Network Programming, Web services using SOAP, Introduction to Graphics programming - PyGame

UNIT V: Version Control Systems

Introduction to Version Control Systems - Subversion/Git, Writing Unit Tests, Creating Documentation, Contributing to Open Source Projects

Suggested Topics for Group Discussion/Presentation /practical Exercises:

- ✓ Executing Python Programs
- ✓ Exception Handling
- ✓ Inheritance
- ✓ Web services using SOAP
- ✓ Creating Documentation

Suggested Readings:

i) Text Book:

Allen B. Downey, "Think Python: How to Think Like a Computer Scientist", 1st Edition 2012, O'reilly.

ii) Reference Books:

1. Jeff McNeil, "Python 2.6 Text Processing: Beginners Guide", 2010, Packet Publications
2. Mark Pilgrim, "Dive Into Python", 2nd edition 2009

Web Sources:

1. <http://facweb.cs.depaul.edu/sjost/it211/documents/think-python-2nd.pdf>
2. <https://www.pdfdrive.com/dive-into-python-3-e176213304.html>
3. <https://theswissbay.ch/pdf/Gentoomen%20Library/Programming/Python/Python%202.6%20Text%20Processing%20-%20Beginner%27s%20Guide%20%282010%29.pdf>

Course Title: Computer Networks

Semester: V

Course Code: LUCSCT53 Contact Hours: 4hrs/w

Credit: 4

Course Learning Outcomes:

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

- describe the functions of each layer in OSI and TCP/IP model.
- explain the functions of Application layer and Presentation layer paradigms and Protocols.
- classify the routing protocols and analyze how to assign the IP addresses for the given network.
- describe the functions of data link layer and explain the protocols.
- explain the types of transmission media with real time applications.

Pre -Required Knowledge:

- ✓ Basics in Network

- ✓ Protocols
- ✓ Client and Server Concepts

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 Wait 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 UDPModel-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

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/>

Course Title: Programming in Python- Practical	Semester: V
Course Code: LUCSCL51	Contact Hours: 6hrs/w
	Credit: 4

Course Learning Outcome:

On completion of this course, the students will be 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.

Suggested Readings:

i)Reference Books:

1. Jeff McNeil, "Python 2.6 Text Processing: Beginners Guide", 2010, Packet Publications
2. Mark Pilgrim, "Dive Into Python", 2nd edition 2009

Web Sources:

1. <https://1lib.in/book/464743/826865?id=464743&secret=826865>
2. <https://www.pdfdrive.com/dive-into-python-3-e176213304.html>
3. <https://theswissbay.ch/pdf/Gentoomen%20Library/Programming/Python/Python%202.6%20Text%20Processing%20-%20Beginner%27s%20Guide%20%282010%29.pdf>

Course Title: Computer Graphics	Semester: V
Course Code: LUCSDS51	Contact Hours: 4hrs/w
	Credit: 4

Course Learning Outcome:

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

- implement various algorithms to scan, convert the basic geometrical primitives, transformations, Area filling, clipping.
- describe the importance of viewing and projections.
- define the fundamentals of animation, virtual reality and its related technologies.
- understand a typical graphics pipeline
- design an application with the principles of virtual reality.

Pre-Required Knowledge:

- ✓ Basic in Graphics Software
- ✓ Filing system
- ✓ Computer Input and output devices

Unit I: Introduction Graphics software

Overview of graphics system – Video Display devices – Raster scan and random scan system – Input Devices – Graphics software.

Unit II: Output primitives

Line drawing, Circle – Generating – filled Area primitives – Character Generation.

Unit III: Attributes of output primitives

Line area-fill, Character, text, marker, and Bundled Attributes – Inquiry function – Antialiasing techniques.

Unit IV: Geometric Transformations

Two dimensional geometric transformations and viewing: Basic transformation – Homogeneous coordinates – composite transformations – reflection and shear – window-to-view port transformation – viewing functions – point, cohen-sutherland line clipping – Sutherland-Hodgeman polygon clipping – Curve, text, Exterior clipping operations.

Unit V: GUI and input methods

The user dialogue – Graphical input devices – input functions – interactive picture construction techniques – virtual reality environments.

Suggested Topics for Group Discussion/Presentation/ practical Exercises:

- ✓ Graphics Software
- ✓ Filled Area Primitives
- ✓ Output Primitives
- ✓ Composite Transformations
- ✓ Virtual Reality Environments

Suggested Readings:

i) Text Book:

Donald Hearn and M.PaulineBaker, "Computer Graphics" ,
Second Indian Reprint 2003, Pearson Education .

ii) Reference Books:

1. Computer Graphics, Steven Harrington, 2nd Edition,
McGraw Hill, July 2017.
2. Principles and practice, Foley, Van Dam, Addison
Wesley, 2nd Edition, 1997.

Web Sources:

1. <https://learnengineering.in/computer-graphics-c-version-by-donald-d-hearn-m-pauline-baker-free-download/>
2. <https://www.javatpoint.com/computer-graphics-tutorial>
3. https://www.tutorialspoint.com/computer_graphics/index.htm

Course Title: Cloud Computing

Semester: V

Course Code: LUCSDS52 Contact Hours: 4hrs/w

Credit: 4

Course Learning Outcomes:

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

- analyze the virtualization and cloud computing concepts.
- learn the architecture, deployment models, and infrastructure models of Cloud Computing.
- demonstrate knowledge on the cloud computing security, federation, presence, identity, and privacy

- familiar with open source cloud computing software, and free/commercial cloud services.
- learn the privacy policy of cloud providers

Pre-Required Knowledge:

- ✓ Basic in Internet.
- ✓ Computer Fundamentals.
- ✓ Computer memory management.

Unit I: Understanding Cloud Computing

An Introduction to Cloud Computing –Cloud Models: Characteristics – Cloud Services – Cloud models (IaaS, PaaS, SaaS) – Public vs Private Cloud –Cloud Solutions - Cloud ecosystem – Service management – Computing on demand.

Unit II: Virtualization

Basics of Virtualization - Types of Virtualization - Implementation Levels of Virtualization -Virtualization Structures - Tools and Mechanisms - Virtualization of CPU, Memory, I/O Devices.

Unit III: Cloud Infrastructure

Architectural Design of Compute and Storage Clouds – Layered Cloud Architecture Development – Design Challenges - Inter Cloud Resource Management – Resource Provisioning and Platform Deployment – Global Exchange of Cloud Resources.

Unit IV: Security in the Cloud

Security Overview – Cloud Security Challenges and Risks – Software-as-a-Service Security –Security Governance – Risk Management – Security Monitoring –

Unit V: Security Architecture

Security Architecture Design – Data Security – Application Security – Virtual Machine Security - Identity Management and Access Control – Autonomic Security.

Suggested Topics for Group Discussion/Presentation/practical Exercises:

- ✓ Public vs Private Cloud

- ✓ Virtualization Structures
- ✓ Cloud Architecture
- ✓ Cloud Security Challenges and Risks
- ✓ Application Security

Suggested Readings:

i) Text Books:

1. George Reese, “Cloud Application Architectures: Building Applications and Infrastructure in the Cloud” O'Reilly, April 2009
2. RajkumarBuyya, Christian Vecchiola, S.ThamaraiSelvi, ‘Mastering Cloud Computing’, TMGH,2013
3. “Cloud Computing” Michael Miller, Pearson publication, 2013

ii) Reference Books:

1. Toby Velte, Anthony Velte, Robert Elsenpeter, “Cloud Computing, A Practical Approach”, TMH, 2009
2. Kumar Saurabh, “Cloud Computing – insights into New-Era Infrastructure”, Wiley India,2011

Web Sources:

1. <http://index-of.co.uk/Cloud-Computing-Books/Mastering%20Cloud%20Computing%20-%20Rajkumar%20Buyya.pdf>
2. <https://bibliotech2803.files.wordpress.com/2018/04/cloud-application-architectures-oreilly-media.pdf>
3. <https://www.javatpoint.com/cloud-computing-tutorial>

Course Title: Photoshop – Practical

Semester: V

Course Code: LUCSSL51 Contact Hours: 3hrs/w

Credit: 2

Course Learning Outcomes:

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

- know how to create certificate.
- know how to create visiting card, banner, invitation, etc.
- able now the usage of image cloning.

- develop the product wrapper for a company.
- develop and design a greeting card for various occasions.

Pre-Required Knowledge:

- ✓ Basic knowledge about computer
- ✓ Filing system
- ✓ Knowledge about computer functioning

Programs:

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 an 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

Suggested Readings:

i) Reference Book:

Photoshop 7 Savvy, Steve Romaniello, BPB Publication

Web Sources:

1. <https://humysydyqen.iformats>
2. icu/photoshop-7-savvy-book-30321zh.php
3. <https://www.creativeblog.com/photoshop/top-photoshop-resources-912697>

Course Title: Page Maker - Practical

Semester: V

Course Code: LUCSSL52

Contact Hours: 3hrs/w

Credit: 2

Course Learning Outcome:

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

- create Documents and Templates, Add text into Documents using various Methods.
- apply different Formatting Styles to Characters and Paragraphs.
- import Graphics, Create objects using various tools, and effects to objects.
- create a book and export it into PDF.
- multiple Layout Design.

Programs:

1. Working with Palettes.
2. Create a publication.
3. Working with Text Tools.
4. Working with Graphics.
5. Create a master page.
6. Working with Story editor.
7. Working with Table editor.

Suggested Readings:

i) Reference Books:

1. PageMaker 7, Training Guide-Satish Jain, BPB Publications.
2. Shelly, Gary B., Cashman, T, Microsoft Publisher 2003 Complete Concepts and Techniques .ISBN: 9780619200312

Web Sources:

1. <http://achelois-alexandria.harrisonmccarthy.xyz/read/?id=44XdPAAA CAAJ&format=pdf&server=1>
2. <https://pdfonlines.club/author/834496.satish-jain>

Course Title: E-Commerce

Semester: V

Course Code: LUCSSC51

Contact Hours: 0

Credit: 2

Course Learning Outcomes:

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

- develop skills in understanding strategic issues related to ecommerce.
- understand the broad knowledge of state of e-commerce activities.
- ability to know the knowledge of E-Marketing and E-Advertising.
- understand the electronic payment systems and security.
- understand the concept of E-Security system.

Pre-Required Knowledge:

- ✓ Digital Marketing
- ✓ Online Payment Method
- ✓ E- Advertisement

Unit I: Introduction to E-Commerce

E-Commerce: Definition of Electronic Commerce – Evolution of E-Commerce – classification of E-Commerce

Unit II: Electronic Data Interchange

Introduction – Process of EDI – Working of EDI – EDI Components – Benefits of EDI – EDIFACT – EDIFACT Message structure.

Unit III: E-Marketing and E-Advertising

Introduction – Advantages of E-Marketing – Introduction of E-Advertising – Advantages –Format for web advertising.

Unit IV: E-payment

Benefits of Electronic Payment – Components of Electronic Systems – Electronic fund transfer – Electronic Payment Methods.

Unit V: E-Security

Details of Security threads – E-Security protection – Cryptography – Cryptography based solutions – Symmetric and Asymmetric Cryptosystems.

Suggested Topics for Group Discussion/Presentation/practical Exercises:

- ✓ Classification of E-Commerce

- ✓ Process of EDI
- ✓ Advantages of E-Marketing
- ✓ E-Payment
- ✓ Symmetric and Asymmetric Cryptosystems

Suggested Readings:

i) Text Book:

E-Commerce, Dr. K.Abiramidevi, M.Alagammai, Margham Publications,2010

ii) Reference Books:

1. Ryan Deiss, Russ Henneberry (2017) Digital Marketing for Dummies, John Wiley& Sons.
2. Ahuja Vandana (2015) Digital Marketing, Oxford University Press.

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/>

Course Title: Ethical Hacking

Semester: V

Course Code: LUCSSC52

Contact Hours: 0

Credit: 2

Learning Outcomes:

Upon completion of this course, the students will be able to:

- critically evaluate the potential countermeasures to advanced hacking techniques.
- analyze and critically evaluate techniques used to break into an insecure web application and identify relevant countermeasures.
- demonstrate a critical evaluation of an advanced security topic with an independent project.
- understand the web application security.
- critically evaluate concept of attacking authentication.

Pre-Required Knowledge:

- ✓ Computer Fundamentals.
- ✓ Working with Web Applications.
- ✓ Virus and Antivirus

Unit I: Introduction to ethical hacking

Introduction: Understanding the importance of security - Concept of ethical hacking and essential Terminologies – Threat - Attack - Vulnerabilities - Target of Evaluation - Exploit.

Unit II: Hacking

Phases involved in hacking - Foot Printing – Scanning - System Hacking - Session Hijacking.

Unit III: Sniffers

Sniffers: Active and passive sniffing – ARP poisoning and countermeasures – Man in the middle attacks – Spoofing and Sniffing attacks – Sniffing countermeasures.

Unit IV: Web Application Security

Core Defence Mechanisms – Handling User Access – Authentication – Session Management – Access Control. Web Application Technologies: HTTP Protocol – Requests – Responses and Methods – Encoding Schemes.

Unit V: Attacking Authentication

Attacking Session Management – Design Flaws in Authentication Mechanisms Attacking Forgotten Password Functionality – attacking Password change functions.

Suggested Topics for Group Discussion/Presentation/practical Exercises:

- ✓ Concept of ethical hacking
- ✓ System Hacking
- ✓ Spoofing and Sniffing attacks
- ✓ HTTP Protocol
- ✓ Attacking Session Management

Suggested Readings:

i) Text Books:

1. Patrick Engebretson, The Basics of Hacking and Penetration Testing, Elsevier, 2013.
2. Network Security and Ethical Hacking, RajatKhare, Luniver Press, 2006.

ii) Reference Books:

1. Network intrusion alert: an ethical hacking guide to intrusion detection, Ankit Fadia, Manu Zacharia, Thomson Course Technology PTR, 2007.
2. Ethical Hacking, Thomas Mathew, OSB Publisher, 2003.
3. Hacking Exposed: Network Security Secrets & Solutions, Stuart McClure, Joel Scambray and George Kurtz, McGraw-Hill, 2005.

Web Sources:

1. [http://niobe-thessaloniki\)scarlettmitchell.xyz/download/nC2UsaMUoEQC-network-security-and-ethical-hacking](http://niobe-thessaloniki)scarlettmitchell.xyz/download/nC2UsaMUoEQC-network-security-and-ethical-hacking)
2. <http://www.guru99.comethical-hacking-tutorials.html>
3. <https://www.mygreatlearning.com/academy/learn-for-free/courses/introduction-to-ethical-hacking>

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/1_3226186&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.NewDelhi: 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.icaai.ac.in
2. www.financialaccounting.ac.in
3. www.icwai.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 Programme (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, 29 th edition.
3. Gupta. K. R and Manoranjansharma (2018) , Indian Economic Policies and Data McGraw Hill Publications
4. Abhijit, V. Banerjee et al. (2017), poverty and income distribution I India, juggernaut, New Delhi

5. 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) Principles of 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 › BusinessEIGar
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 Kargil 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 SCIENCE – UG - CBCS- LOCF

Title of the Course: Mobile Application Development Semester: VI
Course Code: LUCSCT61 Contact Hours: 6hrs/w Credits: 5

Course Learning Outcomes:

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

- discuss the introduction of Android, the manifest file, downloading with Installation of Android and executing the First Android Application.
- illustrate 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.
- developing Applications using menus and internal, external file manipulations.
- explain the SQLite database operations with android, implementation of notification in App.
- incorporating network concepts in android Applications

Pre-Required Knowledge:

- ✓ Working with Android Application
- ✓ VB.Net Programming
- ✓ Networking Concepts

Unit I: 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 Book:

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

ii) Reference Books:

1. JakobIversen 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

Web Resources

1. [https://en.wikipedia.org/wiki/Android_\(operating_system\)](https://en.wikipedia.org/wiki/Android_(operating_system))
 2. <https://developer.android.com/guide/components/fragments>
 3. <https://www.tutorialriddle.com/android/android-graphics.htm>
-

Title of the Course: Software Engineering	Semester: VI
Course Code: LUCSCT62	Contact Hours: 6hrs/w
	Credits: 4

Course Learning Outcomes:

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

- Understand the software crisis, myths, basics of software engineering, its phases of development etc.
- Gain overall idea about SRS and different Process Models.
- Understand a good idea of ERD, DFD, Design Methods and architectural views
- Understand the testing strategies, different methods and Testability concept is provided to the students.
- Gain all maintenance concepts, types of changes, maintenance side effects are given to students along with the idea of software re-engineering.

Pre-Required Knowledge:

- ✓ Software Development Life Cycle
- ✓ Databases Concepts
- ✓ Networking Concepts

Unit I: Introduction to Software

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: Maintenance

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.

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

Web Sources:

1. https://www.tutorialspoint.com/software_engineering/software_engineering_quickguide.htm
2. http://moodle.autolab.unipannon.hu/Mecha_tananyag/szoftverfejlesztési_folyamatok_angol/ch1_3.html
3. https://www.tutorialspoint.com/software_testing/software_testing_tutorial.pdf

Title of the Course: Mobile Application Development –

Practical

Semester: VI

Course Code: LUCSCL61

Contact Hours: 6hrs/w

Credits: 4

Course Learning Outcomes:

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

- experience 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.
4. Write the code to check which toggle button is ON/OFF.
5. Write the code to display the rate of the selected food item by using checkbox.
6. Write the code to create and show the Alert Dialog.
7. Write the code to display it e month e spinner and perform event handling.
8. Write the code for simple implicit in tent that displays a webpage.
9. Simple option menu example that contains three menu items.

10. Write the code to display the context menu on press of the list view.
11. Simple option menu example that Create sample application with login module. (Check user name and password)
12. On successful login, go to next screen. And on failing login, alert user using
 1. Toast. Also pass username to next screen.
13. Create an application that will change color of the screen, based on selected options from the menu.
14. Demo App for file Manipulations
15. Android with SQLite database operations
16. Android App for accessing Mail
17. Android App for utilizing JSON objects.

Suggested Readings:

i) Reference Books:

1. Michael Burton, Donn Felker, "Android Application Development for Dummies",
2. Pradeep Kothari, " Android Application Development (with Kitkat Support)", Kogent Learning Solutions Inc., Black Book, DreamTech Press.

Web Sources

1. [https://en.wikipedia.org/wiki/Android_\(operating_system\)](https://en.wikipedia.org/wiki/Android_(operating_system))
2. <https://developer.android.com/guide/components/fragments>
3. <https://www.tutorialride.com/android/android-graphics.html>

Course Title: Project & Viva-Voce	Semester: VI
Course Code: LUCSPJ61	Contact Hours: 4hrs/w
	Credit: 4

Course Learning Outcomes:

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

- develop the project from the conventional software product to the modern.
- analyze and design the software architecture.

- have an exposure for organizing and managing a software project
- apply, analyze, design and develop the software project.
- acquire knowledge of managing, economics for better conventional, modern and future software project.

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 for one (semester VI) semester duration and a student is Learning 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 | } | 50 Marks |
| 2. VivaVoce | | |

Course Title: Quantitative Aptitude and Computer

Awareness

Semester: VI

Course Code: LUCSDS61

Contact Hours: 3hrs/w

Credit: 2

Course Learning Outcomes:

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

- understand the Interpret and Communicate quantitative information.
- able make sense of Problems.
- reason, model and draw.
- critique and evaluate quantitative.
- use appropriate technology.

Unit I: Quantitative Ability - I

Number Systems, LCM and HCF, Percentages, Profit, Loss and Discount, Interest (Simple and Compound), Speed, Time and Distance, Time and Work, Averages, Ratio and Proportion, Linear Equations, Quadratic Equations, Complex Numbers, Logarithm, Progressions, Binomial Theorem

Unit II: Quantitative Ability - II

Permutation and Combination, Probability, Surds and Indices, Inequalities, Functions, Set Theory, Mixtures and Allegations, Geometry, Co-ordinate Geometry, Trigonometry, Menstruation etc.

Unit III: Logical Reasoning

Number and Letter Series, Calendars, Clocks, Cubes, Venn Diagrams, Binary Logic, Seating Arrangement, Logical Sequence, Logical Matching, Logical Connectives, Syllogism, Blood Relations etc.

Unit IV: Analytical Reasoning

Number Series, Alphabet Series, Test of Direction Sense, Coding-Decoding, Number Ranking, Arithmetical Reasoning, Problem on Age Calculation, Blood Relations, Analogy, Decision Making, Non Verbal Series, Mirror Images, Grouping Identical Figures etc.

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

- ✓ Time and Work
- ✓ Set Theory
- ✓ Syllogism
- ✓ Decision Making
- ✓ 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) PVT LTD, 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.

Web Sources:

1. <https://sbhilyrics.com/quantitative-aptitude-for-competitive-examinations-pdf-book/>
2. <https://www.sarkarirush.com/quantitative-aptitude-pdf-book-updated/>

3. https://www.tutorialspoint.com/quantitative_apptitude/index.htm

Course Title: Personality Development	Semester: VI
Course Code: LUCSDS62 Contact Hours: 3hrs/w	Credit: 2

Course Learning Outcomes:

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

- inculcate Process of Communication and identify barriers in communication.
- demonstrate the competency in English language through understandability and Practice in four skills of language such as writing, speaking, reading and listening.
- develop skills for working in team and individually.
- inculcate soft skills and develop personality through participation in group discussion, Mock interview, group and individual presentation
- practice reading skills in English language specific to eminent Indian Authors

Pre-Required Knowledge:

- ✓ Success and Failure
- ✓ Motivation
- ✓ Group Discussion

UNIT I: Introduction to Personality Development

The concept of personality - Dimensions of personality – Theories of Freud & Erickson-Significance of personality development. The concept of success and failure: What is success? - Hurdles in achieving success - Overcoming hurdles - Factors responsible for success – What is failure - Causes of failure. SWOT analysis.

UNIT II: Attitude & Motivation

Attitude - Concept - Significance - Factors affecting attitudes - Positive attitude – Advantages –Negative attitude-Disadvantages - Ways to develop positive attitude - Differences between personalities having positive and negative attitude. Concept of motivation - Significance –

Internal and external motives -Importance of self- motivation-
Factors leading to de-motivation

UNIT III: Self-esteem

Term self-esteem - Symptoms - Advantages - Do's and Don'ts to develop positive self-esteem – Low self-esteem-Symptoms - Personality having low self-esteem - Positive and negative self-esteem. Interpersonal Relationships – Defining the difference between aggressive, submissive and assertive behaviours– Lateral thinking.

UNIT IV: Other Aspects of Personality Development

Body language - Problem-solving - Conflict and Stress Management - Decision-making skills -Leadership and qualities of a successful leader – Character building -Team-work – Time management -Work ethics –Good manners and etiquette.

UNIT V: Employability Quotient

Resume building- The art of participating in Group Discussion – Facing the Personal (HR & Technical) Interview -Frequently Asked Questions - Psychometric Analysis - Mock Interview Sessions.

Suggested Topics for Group Discussion/Presentation/practical Exercises:

- ✓ Concept of Success and Failure Time and Work
- ✓ Ways to Develop Positive Attitude
- ✓ Aggressive, Submissive and Assertive Behaviours
- ✓ Facing The Personal (Hr & Technical) Interview
- ✓ Resume Building

Suggested Readings:

i) Text Books:

1. Hurlock, E.B (2006). Personality Development, 28th Reprint. New Delhi: Tata McGraw Hill.
2. Stephen P. Robbins and Timothy A. Judge (2014), *Organizational Behavior 16th Edition*: Prentice Hall.

ii) Reference Book:

1. Andrews, Sudhir. How to Succeed at Interviews. 21st (rep.) New Delhi) Tata McGraw- Hill 1988.
2. Heller, Robert. Effective leadership. Essential Manager series. Dk Publishing, 2002

Web Sources:

1. https://www.bharathuniv.ac.in/colleges1/downloads/courseware_ece/notes/BSS201%20-%20PERSONALITY.pdf
2. <https://www.goodreads.com/book/show/9623573-how-to-succeed-at-interviews>
3. <https://www.goodreads.com/book/show/6669943-effective-leadership>

Course Title: R Programming – Practical	Semester: VI
Course Code: LUCSSL61	Contact Hours: 3hrs/w
	Credit: 2

Course Learning Outcome:

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

- illustrate flowchart and algorithm to the given problem.
- understand basic structure of the C programming, declaration and usage of variables.
- write C programs using operators, exercise conditional and iterative statements.
- implement programs with structures and arrays, perform file operation use the preprocessor.

Pre-Required Knowledge:

- ✓ Syntax of looping statements
- ✓ Date and time function
- ✓ Reading and writing data

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.

Suggested Readings:

i) Reference Books:

1. R Programming for Beginners: Fast and Easy Learning R, Steven Keller, Decembr 2016.
2. R: Easy R Programming for Beginners, Yours Step-By-Step Guide to Learning R, Felix Alvaro, May 2016.

Web Sources:

1. <http://dotnettricks-abdul.in/Contents/Unleased%20Book.pdf>
2. <http://www.w3resource.com/r-programming-exercises/>
3. <http://www.coursera.org/learn/r-programming>

Course Title: Graphics Programming – Practical	Semester: VI
Course Code: LUCSSL62	Contact Hours: 3hrs/w
	Credit: 2

Course Learning Outcomes:

On completion of this course, the students will be to

- able to draw primitive shapes
- learn to transform different geometrical shapes
- able to do rotation with different algorithms
- develop knowledge about midpoint rotation
- able to do polygon clipping and line clipping

Programs:

1. Write a program for 2D line drawing as Raster Graphics Display.
2. Write a program for display basic 2D geometric primitives.

3. Write a program to display a filled square.
4. Write a program to display a series of concentric circles of varying radius.
5. Write a program for line drawing as Raster Graphics Display.
6. Write a program for circle drawing as Raster Graphics Display.
7. Write a program to draw a line using Bresenham line drawing algorithm
8. Write a program to draw a circle using Midpoint algorithm. Modify the same for drawing an arc and sector.
9. Write a program to rotate a point about origin.
10. Write a program to rotate a triangle about origin.
11. Write a program to scale the triangle using 2D transformation.
12. Write a program to translate a triangle using 2D transformation.
13. Write a program to reflect a triangle 2D transformation.
14. Write a program for polygon filling as Raster Graphics Display
15. Write a program for line clipping.
16. Write a program for polygon clipping.
18. Write a program for displaying 3D objects as 2D display using perspective transformation.
19. Write a program for rotation of a 3D object about arbitrary axis.
20. Write a program in OpenGL for building mouse cursors.
21. Write a program in OpenGL for freehand drawing using mouse.

Suggested Readings:

i) Reference Books:

1. Computer Graphics, Steven Harrington, 2nd Edition, McGraw Hill.
2. Principles and practice, Foley, Van Dam, Addison Wesley, 2nd Edition, 1997.

Web Sources:

1. <https://learnengineering.in/computer-graphics-version-by-donald-d-hearn-m-pauline-baker-free-download/>
2. <https://www.javatpoint.com/computer-graphics-tutorial>
3. https://www.tutorialspoint.com/computer_graphics/index.htm

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 Stranger.

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](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](https://www.SpokenEnglishpractice.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	
	Contact Hours: 3	Semester: VI
Course Code:		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

- a. Koutsoyiannis. A, (1993), Modern Microeconomics, Macmillan Education Ltd.
- b. Jhingan M.L. (2004), 'Macro Economic Theory', Vrinda Publications.
- c. Jhingan M.L. (2012), The Economic of Development and Planning, Vrinda Publicatios (P) Ltd, Delhi.

ii) Reference Books

- i. Sen. A, (2012), Microeconomics; Theory and Application, Oxford University press, New Delhi.
- ii. Gregory Mankiw (1998), 'Macro Economics' 6th Edition, Tata McGraw Hill.
- d. Misra S.K and Puri V.K. (2013), Economics of Development and Planning, Himalaya Publishing House, Mumbai.
- e. Tyagi B.P. Dr (1976), 'Public Finance', Jeyaprakash Publications, 2nd Edition, Meerat.
- f. RuddarDattSundaram K.P.M., Indian Economy, S. Chand, New Delhi.

Web Sources

1. [https://en.m.wikipedia.org/wiki/Cardinal utility](https://en.m.wikipedia.org/wiki/Cardinal_utility)
2. [https://en.m.wikipedia.org/wiki/Demand for money](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: Recent 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 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 language
- create ledger accouts 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 dialoué 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

DEPARTMENT OF COMPUTER SCIENCE – UG - CBCS- LOCF

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, XHTML, 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

DEPARTMENT OF COMPUTER SCIENCE – UG - CBCS- LOCF

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 report 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
<p style="text-align: center;">SECTION–A (Answer all questions)</p> <p>I. Choose the correct answer (FIVE questions –ONE question from each unit) (5x1=5) (Q.No.1-5)-All questions are at K2 level</p> <p>II. Fill in the blanks (FIVE questions - ONE question from each unit) (5x1=5) (Q.No.6-10)-All questions are at K1 level</p>	10
<p style="text-align: center;">SECTION-B</p> <p>Answer all questions not exceeding 50 words each.</p> <p>ONE set of questions from each unit</p> <p>Q. No. : 11 to 15 (5x2=10)</p> <p>K2 level – 2 Questions K3 level – 1 Question K4 level –1 Question K5/K6 level – 1 Question</p>	10
<p style="text-align: center;">SECTION-C-Either/or type</p> <p>Answer all questions not exceeding 200 words each.</p> <p>ONE set of questions from each unit.</p> <p>Q. No. : 16 to 20 (5 x5=25) K1 level – 1 Question</p>	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)	30
K1 level – 1 Question K2 level – 1 Question K3 level – 1 Question K4 level – 1 Question K5/K6 level – 1 Question	
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
<p style="text-align: center;">SECTION-B</p> 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 K4 level – 1 Question K5/K6 level – 1 Question	10
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	K1	K2	K3	K4	K5/ K6	TOTAL MARKS
SECTIONS						
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	K1	K2	K3	K4	K5/K6	TOTAL MARKS
SECTIONS						
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	K1	K2	K3	K4	K5/K6	TOTAL MARKS
SECTIONS						
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.

- 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

- Students without hall ticket and identity card are not permitted to appear for the examinations.
- Possession of materials in any form for copying is strictly prohibited in the examination hall.
- 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 debaring 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 debaring 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.

