ANNA ADARSH COLLEGE FOR WOMEN

DEPARTMENT OF BCA – SHIFT II

Program Outcomes:

PO1	An ability to apply knowledge of mathematics, computer science and management in practice.
PO2	In order to enhance programming skills of the young IT professionals, the program has introduced the concept of project development in each language/technology learnt during semester.
PO3	Apply standard software engineering practices and strategies in software project development using open-source programming environment to deliver a quality of product for business success.
PO4	Explore emerging technologies in diverse areas of Computer Application and inculcate skills for successful career, entrepreneurship, and higher studies.
PO5	Recognition of the need for and ability to engage in continuing professional development.

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

DEPARTMENT OF BCA (SHIFT I)

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

ANNA ADARSH COLLEGE FOR WOMEN

Department of BCA – Shift II

Faculty Details

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

SEMESTER I

Subject Name: COMMUNICATIVE ENGLISH I

Subject Code: LZ11A

COURSE OBJECTIVES:

1. To hone the basic communication of students and prepare them for careerchallenges.
2. To train students on effective listening.
3. Trained to better express themselves through the right choice of words forformal and informal writing and speaking.
4. To nurture and develop efficient reading by introducing them to readingtechniques.
5. To break the barriers of public speaking and build confidence to face theaudience/people.

SYLLABUS:

UNIT – I

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

UNIT – II

1. Listening and Speaking
    a. Listening with a Purpose
    b. Effective Listening
    c. Tonal Variation
    d. Listening for Information
    e. Asking for Information
    f. Giving Information
2. Reading and Writing
    a. i. Strategies of Reading: Skimming and Scanning
        ii. Types of Reading: Extensive and Intensive Reading
        iii. Reading a prose passage
        iv. Reading a poem

v. Reading a short story

b. Paragraphs: Structure and Types
   i. What is a Paragraph?
   ii. Paragraph structure
   iii. Topic Sentence
   iv. Unity
   v. Coherence
   vi. Connections between Ideas: UsingTransitional words and expressions
   vii. Types of Paragraphs

c. Study Skills II: Using the Internet as a Resource
   i. Online search
   ii. Know the keyword
   iii. Refine your search
   iv. Guidelines for using the Resources
   v. e-learning resources of Government of India
   vi. Terms to know

d. Grammar in Context: Involving Action-I
   i. Verbs
   ii. Concord

UNIT – III

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

UNIT – IV

1. Listening and Speaking
   a. Giving and responding to opinions
2. Reading and writing
   a. Note taking
   b. Narrative writing – writing narrative essays of two to three paragraphs
3. Grammar in Context:Tense
   a. Present
   b. Past
   c. Future

UNIT – V

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

REFERENCE BOOKS:

1. Communicative English by Tamilnadu State Council for Higher Education (TANSCHE)

COURSE OUTCOMES:

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

Subject Name: TAMIL I

Subject Code: LA11A

<u>பாடத்திட்டத்தின் நோக்கம்:</u>

1. காலந்தோறும் தமிழ் அடைந்துள்ள வளர்ச்சியையும், இன்றைய நவீன காலத்தில் உருவான தமிழ் இலக்கியங்களையும் ஒற்றுமை வேற்றுமைப்படுத்தி ஆராய்கின்ற நோக்கில் பொதுத்தமிழ்ப் பாடப்பகுதி கட்டமைக்கப்பட்டுள்ளது.
2. பாரதியார், பாரதிதாசன், கவிமணி உள்ளிட்டோரின் மரபுக்கவிதைகளும், அப்துல் ரகுமான், சிற்பி, மு.மேத்தா, வைரமுத்து உள்ளிட்டோரின் புதுக் கவிதைகளும் இரா.பி.சுதுப்பிள்ளை அவர்களின் உரைநடை, முத்துசாமி அவர்களின் நாடகம் போன்றவை இடம்பெற்றுள்ளன.
3. தமிழ் மக்களின் வாய்மொழி இலக்கியங்களில் சிலபாடல்கள் பாடமாக வைக்கப்பட்டுள்ளன. இந்த இலக்கியங்கள் சார்ந்த வரலாற்றுப் பின்புலமும் பாடமாக அமைந்துள்ளன.
4. மாணவர்களுக்குப் படிப்பின் ஆர்வத்தைத் தூண்டும் வகையில் கவிதைகள், சிறுகதை, உரைநடை, நாடகம் போன்ற எளிமையான பகுதிகள் அமைக்கப்பட்டுள்ளன.
5. இலக்கிய வாசிப்பின் ஆர்வத்தை ஊக்குவித்தலும் தற்கால தமிழ் இலக்கியத்தின் ஆளுமைகளை மாணவர்கள் புரிந்துகொள்ள வைத்தலும் பாடத்திட்டத்தின் நோக்கமாகும்.
   தமிழ் இலக்கிய வரலாற்றில் தற்கால படைப்பாளர்களையும் படைப்புகளையும் அறிமுகப்படுத்தித் தமிழ் இலக்கியப் பாரம்பரியத்தைப் புரிய வைத்தலும் பிழையின்றி எழுதுவதற்குரிய இலக்கண விதிமுறைகளைத் தெரிந்து கொள்ளுதலும் பாடத்திட்டத்தின் நோக்கமாகும்.
6. தமிழ் மொழியின் கடினமான சொற்களுக்குரிய பொருளைத் தெரிந்துகொள்ளும் வகையில் அகராதியைப் பயன்படுத்துவதற்குரிய அடிப்படையைக் கற்றுத்தருதலே நோக்கமாகும்.

பாடத்திட்டம்

பாடப்பகுப்பு

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

<u>அலகு - 1</u>

1. மரபுக்கவிதை

a. பாரதியார் - பாரத சமுதாயம்.
b. பாரதிதாசன் - ஒற்றுமைப்பாட்டு
c. கவிமணி தேசிக விநாயகம் பிள்ளை - உடல் நலம் பேணல்
d. நாமக்கல் கவிஞர் வெ. இராமலிங்கம்பிள்ளை - தமிழன் இதயம்
e. கவிஞர் கண்ணதாசன் - குடும்பம் ஒரு கதம்பம்
f. பட்டுக்கோட்டை அ. கல்யாணசுந்தரம் - வருங்காலம் உண்டு
g. தமிழ் ஒளி - வழிப்பயணம்

2. புதுக்கவிதை

a. கவிஞர் ந. பிச்சமூர்த்தி - காதல்
b. கவிஞர் அப்துல் ரகுமான் - பித்தன்
c. கவிஞர் மு.மேத்தா - காதலர் பாதை, ஒரு கடிதம் அனாதையாகிவிட்டது, நிழல்கள்
d. கவிஞர் இன்குலாப் - ஒவ்வொரு புல்லையும் பெயர் சொல்லி அழைப்பேன்
e. கவிஞர் தமிழன்பன் - சொல்லில் உயர்வு தமிழ்ச்சொல்லே
f. கவிஞர் வைரமுத்து - விதைச்சோளம்
g. கவிஞர் அ.சங்கரி - இன்று நான் பெரிய பெண்

அலகு - 2

1. நாட்டுப்புற இலக்கியம்

a. ஏற்றப்பாட்டு
b. தெம்மாங்கு
c. அம்பா பாடல்கள்
d. விளையாட்டுப் பாடல்கள்
e. நடவுப் பாடல்கள்

அலகு - 3

1. சிறுகதைகள்

a. கு.ப.ரா- கனகாம்பரம்
b. கு.அழகிரிசாமி - குமாரபுரம் ஸ்டேஷன்
c. தமிழ்ச்செல்வன் - வெயிலோடு போய்
d. 4.தோப்பில் முகமது மீரான் - வட்டக்கண்ணாடி
e. 5.அம்பை - பிளாஸ்டிக் டப்பாவில் பராசக்தி முதலியோர்

2. உரைநடை

a. இரா.பி.சேதுப்பிள்ளை - வண்மையும் வறுமையும்

அலகு - 4

1. நாடகம்

a. நா.முத்துசாமி - நாற்காலிக்காரர்

அலகு -5

1. தமிழிலக்கிய வரலாறு

a. மரபுக் கவிதை - இருபதாம் நூற்றாண்டு கவிஞர்கள்
b. புதுக்கவிதை - தோற்றம் - வளர்ச்சி -வரலாறு
c. நாட்டுப்புறப் பாடல்கள், கதைகள், கதைப்பாடல்கள், பழமொழிகள், விடுகதைகள் - வரலாறு
d. சிறுகதை, உரைநடை வரலாறு
e. நாடகம் - வரலாறு

அலகு - 6

1. மொழிப் பயிற்சி

a. வாக்கிய வகை(தொடர் வாக்கியம், தனி வாக்கியம், கூட்டு வாக்கியம்)

b. இரு வழக்குகள் (பேச்சு, எழுத்து)
c. எழுவாய், பயனிலை, செயப்படுபொருள்
d. ஒருமை, பன்மை மயக்கம்
e. திணை, பால், எண், இட வேறுபாடு
f. நால்வகைச் சொற்கள் (பெயர், வினை, இடை, உரி)
g. அகரவரிசைப் படுத்துதல்

கற்றலும் பயன்பாடும்:

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

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

பாடநூல்

1. அடித்தளப் படிப்பு - பகுதி - I தமிழ்
   முதலாம் மற்றும் இரண்டாம் பருவங்களுக்குரியது. அனைத்துப் பட்டப்படிப்பு பிரிவுகளுக்கும் ஐந்தாண்டு ஒருங்குமுறை பட்ட மேற்படிப்புப் பிரிவுகளுக்கும் பொதுவானது. தாள் -I - செய்யுள் திரட்டு
   (Foundation Course Part - I Tamil - For I & II Semesters Common to all undergraduate course and Five-Year Integrated postgraduate courses. (2020 - 2021 onwards.)
   - நாற்காலிக்காரர் - நா.முத்துசாமி
   - தமிழ் இலக்கிய வரலாறு பாடம் தழுவியவை
   - மொழிப்பயிற்சி

Reference book

தமிழ் - பகுதி 4 - சென்னைப் பல்கலைக்கழகம் வடிவமைத்த பாடத்திட்டங்கள் ஆகையால் குறிப்புதவி நூல் என்று தனியாக இல்லை.

Subject Name: FRENCH I Prescribed text and grammar

Subject Code: CLK1S

COURSE OBJECTIVES:

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

SYLLABUS:

UNITÉ 1

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

UNITÉ 2

Enchanté ! Demander de se présenter - Présenter quelqu'un

UNITÉ 3

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

UNITÉ 4

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

UNITÉ 5

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

UNITÉ 6

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

COURSE OUTCOMES:

1. To comprehend and express themselves well
2. To have an interest to look into another world
3. To improve communication skills
4. To perform well in the University Exams .

REFERENCE BOOKS:

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

Subject Name: FOUNDATION COURSE IN HINDI

COURSE OBJECTIVES:

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

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

LESSONS PRESCRIBED :

1. Sabhyata ka Rahasya
2. Mitrata
3. Yuvavon sen
4. Paramanu Oorja evam Khadya Padarth Sanrakshan
5. Yougyata aur Vyavasay ka Chunav.

II. FUNCTIONAL HINDI & LETTER WRITING

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

1. General Correspondence:

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

III.OFFICIAL CORRESPONDENCE:

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

SYLLABUS

UNIT-I

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

UNIT - II

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

UNIT-III

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

UNIT-IV

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

UNIT-V

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

UNIT-VI

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

LEARNING OUTCOME:

1. Understanding the concept and importance of functional Hindi

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

e BOOKS FOR REFERENCE :

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

Subject Name: PROBLEM SOLVING USING PYTHON

Subject Code: SE21A

COURSE OBJECTIVES

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

SYLLABUS:

UNIT – I

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

UNIT – II

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

UNIT – III

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

UNIT – IV

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

UNIT – V

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

TEXT BOOKS:

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

COURSE OUTCOMES:

1. To acquire problem solving skills in core python with basic principles
2. To understand control statements, list, and iteration
3. To declare and define functions, passing arguments and scope of the variables
4. To develop the skill of designing graphical user interfaces in python through turtle graphics, implementing python modules and string processing.

5. To acquire object-oriented skills in python and to study about the dictionaries and sets

REFERENCE BOOKS:

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

WEB REFERENCES

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

MAPPING-COURSE OBJECTIVES WITH PROGRAMME OUTCOME:

	PO1	PO2	PO3	PO4	PO5
CO1	S	S	M	S	S
CO2	S	S	S	S	M
CO3	M	S	M	S	S
CO4	M	S	S	S	S
CO5	S	S	S	M	S

Key: S-Strong, M-Medium/Moderate, L-Low

Subject Name: ALLIED MATHEMATICS - I

Subject Code: SM3AA

COURSE OBJECTIVES:

1. The purpose of studying numerical methods to develop actual computer codes to solve real time problems.
2. They have an ability to do quick approximations of more complicated calculations.
3. To learn the relation between roots and coefficients.
4. The objective of studying trigonometry is to find the expansion of $\cos\theta$, $\sin\theta$ and $\tan\theta$.
5. Compute exact solutions of solvable first order differential equations and linear differential equations of higher order using various methods.

SYLLABUS:

UNIT – I:

Algebra And Numerical Methods: Algebra: Summation of series - simple problems.
Numerical Methods: Operators E,Δ,∇, difference tables- Newton-Raphson method- Newton's forward and backward interpolation formulae for equal intervals, Lagrange's interpolation formula.
Chapter 2, Section 2.1.3, 2.2, 2.2.1, 2.3, 2.3.3
Chapter 3, Section 3.4.1 and Chapter 5, Section 5.1 and 5.2.

UNIT – II:

Matrices: Symmetric, Skew-Symmetric, Orthogonal, Hermetian, Skew-Hermetian and Unitary matrices. Eigen values and Eigen-vectors, Cayley-Hamilton theorem (without proof) – verification- Computation of inverse of matrix using Cayley - Hamilton theorem. Chapter 4, Section 4.1.1 to 4.1.6, 4.5, 4.5.2, 4.5.3.

UNIT – III:

Theory Of Equations: Polynomial equations with real coefficients, irrational roots, complex roots, symmetric functions of roots, transformation of equation by increasing or decreasing roots by a constant, reciprocal equation-simple problems. Chapter 3, Section 3.1 to 3.4.1(omit section 3.2.1)

UNIT – IV:

Trigonometry: Expansions of $\sin(n\theta)$ and $\cos(n\theta)$ in a series of powers of $\sin\theta$ and $\cos\theta$ - Expansions of $\sin^n\theta$, $\cos^n\theta$, $\tan^n\theta$ in a series of sines, cosines and tangents of multiples of "θ" - Expansions of $\sin\theta$, $\cos\theta$ and $\tan\theta$ in a series of powers of "θ" – Hyperbolic and inverse hyperbolic functions.
Chapter 6, Section 6.1 to 6.3.

UNIT – V:

Differential Calculus: Successive differentiation, n^{th} derivatives, Leibnitz theorem (without proof) and applications, Jacobians, Curvature and radius of curvature in Cartesian co-ordinates, maxima and minima of functions of two variables- Simple problems
Chapter 1, Section 1.1 to 1.3.1 and 1.4.3.

REFERENCE BOOKS:

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

COURSE OUTCOMES:

1. Development of computer software to implement numerical algorithms is an important part of the subject.
2. Students are able to put coding and able to approximations of more complicated calculations.
3. Analyze the location and describe the nature of the roots of an equation.
4. Formulate and develop mathematical arguments in a logical manner.
5. Students can acquire good knowledge and understanding in advanced areas of mathematics.

MAPPING-COURSE OBJECTIVES WITH PROGRAMME OUTCOME:

	PO1	PO2	PO3	PO4	PO5
CO1	S	S	M	M	S
CO2	S	S	S	M	M
CO3	M	S	S	M	S
CO4	M	M	M	M	L
CO5	S	S	M	S	S

Key: S-Strong, M-Medium/Moderate, L-Low

Subject Name: Practical – I / PROBLEM SOLVING USING PYTHON LAB

Subject Code: SE211

COURSE OBJECTIVES:

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

SYLLABUS:

1. Program to convert the given temperature from Fahrenheit to Celsius and vice versa depending upon user's choice.
2. Program to calculate total marks, percentage and grade of a student. Marks obtained in each of the five subjects are to be input by user. Assign grades according to the following criteria:

   Grade A: Percentage >=80

   Grade B: Percentage >=70 and <80

   Grade C: Percentage >=60 and <70

   Grade D: Percentage >=40and <60

   Grade E: Percentage<40
3. Program, to find the area of rectangle, square, circle and triangle by accepting suitable input parameters from user.
4. Program to display the first n terms of Fibonacci series.
5. Program to find factorial of the given number using recursive function.
6. Write a Python program to count the number of even and odd numbers from array of Nnumbers.
7. Python function that accepts a string and calculate the number of upper-case letters andlower-case letters.
8. Python program to reverse a given string and check whether the give string ispalindrome or not.
9. Write a program to find sum of all items in a dictionary.
10. Write a Python program to construct the following pattern, using a nested loop

    1
    22
    333
    4444
    55555
    666666
    7777777
    88888888
    999999999
13. Read a file content and copy only the contents at odd lines into a new file.
14. Create a Turtle graphics window with specific size.

15. Write a Python program for Towers of Hanoi using recursion
16. Create a menu driven Python program with a dictionary for words and theirmeanings.
17. Devise a Python program to implement the Hangman Game.

COURSE OUTCOMES:

1. Write, Test and Debug Python Programs
2. Implement Conditionals and Loops for Python Programs
3. Use functions and represent Compound data using Lists, Tuples and Dictionaries
4. Read and write data from & to files in Python and develop Application
5. Write Menu driven Python program.

MAPPING-COURSE OBJECTIVES WITH PROGRAMME OUTCOME:

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	S	S	M	M	S
CO2	S	S	S	M	M
CO3	M	S	S	M	S
CO4	M	M	M	M	L
CO5	S	S	M	S	S

Key: S-Strong, M-Medium/Moderate, L-Low

Subject Name: ENGLISH FOR PHYSICAL SCIENCES

Subject Code: PZ1SA

COURSE OBJECTIVES:

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

SYLLABUS:

Unit 1 (10 Hours) **COMMUNICATION**	**Listening:** Listening to audio text and answering questions – Listening to Instructions **Speaking:** Pair work and small group work **Reading:** Comprehension Passages – Differentiate betweenfacts and opinion **Writing:** Developing a story with pictures **Vocabulary:** Register specific – Incorporated into theLSRW skills
Unit 2 (10 Hours) **DESCRIPTION**	**Listening:** Listening to process description – Drawing aflow chart. **Speaking:** Role play (formal context) **Reading:** Skimming/Scanning – Reading passages onproducts, equipment and gadgets. **Writing:** Process Description – Compare and Contrast Paragraph – Sentence Definition and Extended Definition –Free Writing **Vocabulary:** Register specific – Incorporated into theLSRW skills
Unit 3 (5 Hours) **NEGOTIATION**	**Listening:** Listening to interviews of specialists/ Inventorsin fields. (Subject specific) **Speaking:** Brainstorming. (Mind mapping). Small group discussions (Subject- Specific) **Reading:** Longer Reading text. **Writing:** Essay Writing (250 words) **Vocabulary:** Register specific – Incorporated into theLSRW skills
Unit 4 (10 Hours) **PRESENTATION SKILLS**	**Listening:** Listening to lectures **Speaking:** Short talks **Reading:** Reading Comprehension Passages. **Writing:** Writing Recommendations. Interpreting Visualsinputs **Vocabulary:** Register specific – Incorporated into the LSRW skills

Unit 5 (5 Hours) **CRITICAL THINKING SKILLS**	**Listening:** Listening comprehension – Listening for information **Speaking:** Making presentations (with PPT –practice) **Reading:** Reading Comprehension Passages – Note making. Comprehension: Motivational article on Professional Competence, Professional Ethics and LifeSkills. **Writing:** Problem and Solution essay – Creative Writing – Summary Writing **Vocabulary:** Register specific – Incorporated into theLSRW skills

REFERENCE BOOKS:

1. Professional English for B.Sc. Physical Sciencesby TamilNadu State Council for Higher Education (TANSCHE)

COURSE OUTCOMES:

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

Subject Name: BASIC ELEMENTS OF LOGISTICS AND SUPPLY CHAIN MANAGEMENT

Subject Code: AY51A

COURSE OBJECTIVES

1. To enable the students to get knowledge about the various techniques ofLogistics Principles.
2. To make the students to get practical skill in solving Problems in Logistics andsupply chain management.

SYLLABUS:

UNIT – I

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

UNIT – II

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

COURSE OUTCOMES:

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

Subject Name: BASIC TAMIL

Subject Code: NLT1C

<u>பாடத்திட்டத்தின் நோக்கம்</u>

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

<u>பாடத்திட்டம்</u>

பாடப்பகுப்பு

IV.இலக்கியம்

V.அதைச் சார்ந்த தமிழிலக்கிய வரலாறு

VI.மொழிப் பயிற்சி

அலகு -1

நாட்டுப் புறப்பாடல்

1. பஞ்சம்.

2. மானம் விடிவதெப்போ?

அலகு -2

புனை கதை

1.”கட்டை விரல்”-சி.என்.அண்ணாதுரை

அலகு -3

புதுக்கவிதை

1. ஆடிக்காற்றே -சிற்பி,

2. கடமையைச் செய்-மீரா,

3. இழந்தவர்கள்-அப்துல் ரகுமான்

அலகு - 4.

மொழித்திறன்

1. கலைச்சொல்லாக்கம்,

2. பொருந்திய சொல் தருதல்,

3. பிழை நீக்கி எழுதுதல்

பாடத்திட்டத்தின் பயன்கள்

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

பாட நூல்

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

REFERENCE BOOK

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

SEMESTER II

Subject Name: COMMUNICATIVE ENGLISH II

Subject Code: LZ12A

COURSE OBJECTIVES:

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

SYLLABUS:

UNIT – I

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

UNIT – II

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

UNIT – III

1. Listening and Speaking
    a. Listening to Ted talks
    b. Making short presentations – Formal presentation with PPT, analyticalpresentation of graphs and reports of multiple kinds

c. Interactions during and after the presentations

2. Reading and writing
    a. Writing emails of complaint
    b. Reading aloud famous speeches
3. Word Power
    a. One Word Substitution
4. Grammar in Context: Sentence Patterns

UNIT – IV

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

UNIT – V

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

REFERENCE BOOKS:

1. Communicative English - Semester II - E book by Tamil Nadu State Council ForHigher Education (TANSCHE)

COURSE OUTCOMES:

1. Students show progress in language proficiency.
2. Better equipped with necessary job skills.
3. Show confidence to face job interviews.
4. Encouraged to voice their thoughts, students began to express themselves through blog writing, articles contribution, online reviewing of products andfilms.
5. Show better understanding of nuances in formal communication andetiquettes.

Subject Name: TAMIL II

Subject Code: LA12A

பாடத்திட்டத்தின் நோக்கம்

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

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

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

<u>பாடத்திட்டம்</u>

I.இலக்கியம்

II.அதைச் சார்ந்த தமிழிலக்கிய வரலாறு

III.மொழிப் பயிற்சி

அலகு 1

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

அலகு *2*

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

அலகு 3

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

அலகு 4

1. பத்துப்பாட்டு - முல்லைப்பாட்டு

அலகு 5

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

II தமிழிலக்கிய வரலாறு

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

III மொழிப் பயிற்சி

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

பாடத்திட்டத்தின் பயன்கள்

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

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

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

பாடநூல்

சென்னைப்பல்கலைக்கழகம் (University of Madras) அடித்தளப் படிப்பு - பகுதி - I தமிழ் முதலாம் மற்றும் இரண்டாம் பருவங்களுக்குரியது.

அனைத்துப் பட்டப்படிப்பு பிரிவுகளுக்கும் ஐந்தாண்டு ஒருங்குமுறை பட்ட மேற்படிப்புப் பிரிவுகளுக்கும் பொதுவானது.

தாள் -I - செய்யுள் திரட்டு

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

REFERENCE BOOK

தமிழ் – பகுதி 1 - சென்னைப் பல்கலைக்கழகம் வடிவமைத்த பாடத்திட்டங்கள் ஆகையால் குறிப்புதவிநூல் என்று தனியாக இல்லை.

Subject Name: FRENCH II

Subject Code: CLK2T

COURSE OBJECTIVES:

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

SYLLABUS:

UNITÉ 1

c'est où ? Demander et indiquer une direction - localiser (près de, en face de …)

UNITÉ 8

N'oubliez pas ! Exprimer l'obligation ou l'interdit - Conseiller

UNITÉ 9

Belle vue sur la mer ! Décrire un lieu - situer - se situer dans le temps

UNITÉ 10

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

UNITÉ 11

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

UNITÉ 12

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

COURSE OUTCOME

Learners are able

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

REFERENCE BOOKS:

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

Subject Name: FOUNDATION COURSE IN HINDI -II

COURSE OBJECTIVES:

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

I . ONE ACT PLAY (Detailed Study): AATH EKANKI
Edited By: Devendra Raj Ankur, Mahesh Aanand Vani
prakashan, 4695, 21-A Dariyagunj,; New Delhi – 110 002

LESSONS PRESCRIBED :

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

II. SHORT STORIES (Non- Detailed Study): SWARNA MANJARI
Edited by: Dr. Chitti. Annapurna Rajeswari Publications 21/3, Mothilal Street, (Opp. Ranganathan Street), T. Nagar, Chennai – 600 017.

LESSONS PRESCRIBED :

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

III.TRANSLATION PRACTICE : (English to Hindi)

SYLLABUS

UNIT – I

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

UNIT – II

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

UNIT-III

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

UNIT-IV

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

UNIT-V

1. Translation Practice. (English to Hindi)

REFERENCE:

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

LEARNING OUTCOME:

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

Subject Name: OBJECT ORIENTED PROGRAMMING CONCEPTS USING C++

Subject Code: SU22A

COURSE OBJECTIVES

1. To inculcate the knowledge of OOP concepts using C++
2. To gain Knowledge on programming with C++.

SYLLABUS:

UNIT – I

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

UNIT – II

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

UNIT – III

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

UNIT – IV

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

UNIT – V

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

COURSE OUTCOMES:

1. To understand the structure and model of the C++ programming language
2. Understand the concepts of objects, able to create the template for the objects in different fields and how to use the members of the object
3. Able to avoid the redundancy by inheriting the features of other classes
4. Able to understand how to bind the objects in different situation by applying the concept of polymorphism
5. Able to understand how to handle exceptions at run time and capable of writing small projects by encapsulating all the concept

TEXT BOOKS:

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

REFERENCE BOOKS:

1. Ashok N Kamthane, "Object-Oriented Programming with ANSI and Turbo C++", Pearson Education 2003.
2. Maria Litvin & Gray Litvin, "C++ for you", Vikas publication 2002

WEB REFERENCES

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

MAPPING-COURSE OBJECTIVES WITH PROGRAMME OUTCOME:

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	M	M	L	S	S
CO2	S	S	M	S	S
CO3	S	M	M	S	S
CO4	S	S	S	S	S
CO5	S	S	S	S	S

Key: S-Strong, M-Medium/Moderate, L-Low

Subject Name: MATHEMATICS - II

Subject Code: SM3AE

COURSE OBJECTIVES

1. To perform integration and other operations for certain types of functions and carry out the computation fluently.
2. To provide students with an introduction to the theory of ordinary differential equations through applications, methods of solution, and numerical approximations.
3. To enable the students to study the Laplace Transforms, properties of Laplace Transform, inverse Laplace Transform and some applications to solve the differential equations and integral equations.
4. It helps the students to study the concepts of point and vector and explain differences and similarities between them.
5. Students will learn to evaluate multiple integrals.

SYLLABUS

UNIT – I

Integral Calculus: Bernoulli's formula – Reduction formula - $\int_0^{\pi/2} sin^n x\ dx$, $\int_0^{\frac{\pi}{2}} cos^n x\, dx$, $\int_0^{\pi/2} sin^m x\, cos^n x\, dx$ (m, n being positive integers), Fourier series for functions in (0, 2π), (-π, π).
Chapter 2: Section 2.7 & 2.9, Chapter 4: Section 4.1.

UNIT – II

Differential Equations: Ordinary Differential Equations: second order non- homogeneous differential equations withconstant coefficients of the form ay" $\underset{\alpha}{+}$by'+ cy = X where X is of the form $e^{\alpha x}$ cos βx and $e^{\alpha x}$ sin βx -Related problems only.
Partial Differential Equations: Formation, complete integrals and general integrals, fourstandard types and solving Lagrange's linear equation P p +Q q= R.
Chapter 5: Section 5.2.1, Chapter 6: Section 6.1 to 6.4

UNIT – III

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

UNIT IV

Vector Differentiation: Introduction, Scalar point functions, Vector point functions, ∇ Vectordifferential operator Gradient, Divergence, Curl, Solenoidal, irrotational, identities.
Chapter 8, Section 8.1 to 8.4.4

UNIT V

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

COURSE OUTCOMES:

1. Students will develop the ability to apply the knowledge of the calculus which will enable them to analyze dynamics of the processes.
2. Students will develop an understanding of basic concepts of the differential and difference equations.
3. Use the Method of Laplace transforms to solve initial-value problems for linear differential equations with constant coefficients.
4. The student have an ability to recognize the use of point and when to use a vector in problem solving.
5. Recognize the underlying mathematical concepts of vectors, geometry of space, multivariate and vector functions, partial differentiation, and multiple integration.

TEXT BOOKS:

1. Allied Mathematics, Volume I and II , P. Duraipandian and S. Udayabaskaran, S. Chand Publications.

REFERENCE BOOKS:

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

WEB REFERENCES

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

MAPPING-COURSE OBJECTIVES WITH PROGRAMME OUTCOME

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	S	S	M	M	S
CO2	M	M	M	M	L
CO3	M	S	S	M	S
CO4	S	S	S	M	M
CO5	S	S	S	L	L

Key: S-Strong, M-Medium/Moderate, L-Low

Subject Name: BASIC TAMIL II

Subject Code: NLT2D

பாடத்திட்டத்தின் நோக்கம்

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

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

பாடத்திட்டம்

அலகு -1.

நீதி நூல்கள்

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

அலகு - 2.

நீதிக் கதைகள்

1. பீர்பால் கதை,
2. பரமார்த்த குரு கதை

அலகு - 3.

அறிமுகம்

தமிழ் இலக்கிய வரலாறு - இலக்கியங்கள் புலவர்கள்

தமிழக வரலாறு - வரலாற்றுச் சின்னங்கள்- சுற்றுலாத்தலங்கள்- அலுவலகப் பெயர்கள் இ.பழமொழிகள்.

பாடத்திட்டத்தின் பயன்கள்

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

பாட நூல்

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

REFERENCE BOOK

தமிழ் – பகுதி 4 - சென்னைப் பல்கலைக்கழகம் வடிவமைத்த பாடத்திட்டங்கள் ஆகையால் குறிப்புதவிநூல் என்று தனியாக இல்லை.

Subject Name: ADVANCED TAMIL II

Subject Code: TLT2D

<u>பாடத்திட்டத்தின் நோக்கம்</u> (Objective)

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

<u>பாடத்திட்டம்</u> (SYLLABUS)

பாடப்பகுப்பு

VII.இலக்கியம்

VIII.அதைச் சார்ந்த தமிழிலக்கிய வரலாறு

IX.மொழிப் பயிற்சி

<u>அலகு - 1</u>

கட்டுரை

1. பெண்ணின் பெருமை-திரு.வி.க

அலகு -2.

செய்யுள்

1. புறநானூறு –

அ. கெடுகசிந்தை-ஓக்கூர் மாசாத்தியார்,

ஆ. ஈன்று புறந்தருதல் - பொன்முடியார்,

இ. யாதும் ஊரே - கனியன்பூங்குன்றனார்

ஈ. திருக்குறள் - வான் சிறப்பு முழுமையும்

உ. சிலப்பதிகாரம் - மங்கல வாழ்த்துப் பாடல்

ஊ. திருவாசகம் - வேண்டத்தக்கது

எ. திருவாய்மொழி - உயர்வற

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

ஐ. சீறாப்புராணம் - வானவர்க்கும்

ஒ. பாரதியார்- நல்லதோர்வீணை

அலகு -3.

இலக்கிய வரலாறு பாடம் தழுவிய இலக்கிய வரலாறு

அலகு -4.

மொழிபெயர்ப்பு

ஆங்கிலப் பகுதியைத் தமிழாக்கம் செய்தல்

பாடத்திட்டத்தின் பயன்கள் (Subject Outcome)

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

பாட நூல்

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

REFERENCE BOOK

தமிழ் – பகுதி 4 - சென்னைப் பல்கலைக்கழகம் வடிவமைத்த பாடத்திட்டங்கள் ஆகையால் குறிப்புதவிநூல் என்று தனியாக இல்லை.

Subject Name: EVERYDAY BANKING

Subject Code: AY52A

COURSE OBJECTIVES:

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

SYLLABUS

UNIT – I

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

UNIT – II

On line Banking – Sign up – Process – Requirements – Log in – Customer ID – User ID – Pass word – Hints for creating Pass words – change of pass word – on line transactions – Account statements – Fund Transfer – Payment of bills – Utility payments – Loans – Repaymentfor Loans – other services. Mobile Banking – meaning – importance – Advantages – Mobile Applications (App) – WAP (Wireless Application Protocol)- USSD (Unstructured Supplementary Service Data)- Registration process – through Mobiles – Process at Bank Branch ATM- User ID-MPIN- change of MPIN –IMPS D(Immediate Mobile Payment System) - UPI(Unified Payment interface) – BHIM(Bharat Interface for money)- NPCI (National Payment Corporation of India) - Bank account Management – Transfer Funds – paying Bills – Locating ATMs - QR code payments- Alerts and notifications- Tracking Spending habits – Cash back- Safe banking methods.

TEXT BOOKS:

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

WEB REFERENCES

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

LEARNING OUTCOMES:

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

Subject Name: Practical – II / C++ PROGRAMMING LAB
Subject Code: SU211

COURSE OBJECTIVES:

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

SYLLABUS:

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

COURSE OUTCOMES:

1. Able to write programs by using the concept of objects
2. Able to understand where to use constructors and destructors and how to apply overloading concept in programming
3. Able to write programs by using different levels of inheritance and binding concept
4. Able to create files by applying the concept of sequential input, output operation on files
5. Able to write code for identifying the errors and how to create templates for any complex object

MAPPING-COURSE OBJECTIVES WITH PROGRAMME OUTCOME:

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	M	M	L	S	S
CO2	S	S	M	S	S
CO3	S	S	S	S	S
CO4	M	L	M	S	S
CO5	S	S	S	S	S

SEMESTER III

Subject Name: DATA STRUCTURES

Subject Code: SZ23B

COURSE OBJECTIVES:

1. To understand the concepts of ADTs
2. To learn linear data structures-lists, stacks, queues
3. To apply Tree data structure concept
4. To implement Graph data structures
5. To understand sorting, searching and hashing

SYLLABUS:

UNIT - I

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

UNIT - II

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

UNIT - III

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

UNIT - IV

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

UNIT - V

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

COURSE OUTCOMES

1. Implement abstract data types for linear data structures
2. Apply the different linear and non-linear data structures to problem solutions.
3. Implement Stack and Queue concepts
4. Critically analyse the various sorting algorithms.
5. Analyze searching algorithms

TEXT BOOKS:

1. Mark Allen Weiss, “Data Structures and Algorithm Analysis in C++”, Pearson Education 2014,

4th Edition.
2. Reema Thareja, “Data Structures Using C”, Oxford Universities Press 2014, 2nd Edition.

REFERENCE BOOKS:

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

WEB REFERENCES:

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

MAPPING-COURSE OBJECTIVES WITH PROGRAMME OUTCOME:

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	S	M	S	M	S
CO2	S	M	S	S	M
CO3	M	S	M	S	S
CO4	S	S	S	S	M
CO5	L	M	S	M	S

Key: S-Strong, M-Medium/Moderate, L-Low

Subject Name: JAVA PROGRAMMING

Subject Code: SZ23B

COURSE OBJECTIVES:

1. To understand the concepts, features of Object-Oriented Programming
2. Understand the fundamentals in java like variables, Control Structures, Arrays
3. To understand the key concepts in OOPs like class, inheritance, Interface etc.
4. To learn about Packages, Exception handling mechanism and about Threads.
5. To develop skill to work with files and to gain knowledge about GUI by using applet

SYLLABUS:

UNIT – I:

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

UNIT – II:

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

UNIT – III:

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

UNIT – IV:

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

UNIT – V:

I/O Streams: File – Streams – Advantages - The stream classes – Byte streams –Character streams. Applets: Introduction – Applet Life cycle – Creating & Executing an Applet –Applet tags in HTML – Parameter tag – Aligning the display - Graphics Class: Drawing and filling lines – Rectangles – Polygon – Circles – Arcs – Line Graphs – Drawing Bar charts AWT Componentsand Even Handlers: Abstract window tool kit – Event Handlers – Event Listeners – AWT Controls and Event Handling:

Labels – Text Component – Action Event – Buttons – Check Boxes – Item Event – Choice– Scrollbars – Layout Managers- Input Events – Menus.

TEXT BOOKS:

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

REFERENCE BOOKS:

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

WEB REFERENCES:

1. https://nptel.ac.in/courses/106105191/

COURSE OUTCOMES:

1. Use the syntax and semantics of java programming language and basic concept
2. Ability to use API library to write complex program
3. Ability to use OOP Concept and features for solving problems
4. Create software applications using java concepts
5. Implementation of web-based GUI Application using Applet

MAPPING-COURSE OBJECTIVES WITH PROGRAMME OUTCOME:

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	S	M	M	M	M
CO2	S	M	M	S	S
CO3	S	S	S	M	S
CO4	S	M	S	S	M
CO5	S	S	S	S	S

Key: S-Strong, M-Medium/Moderate, L-Low

Subject Name: COMPUTER ORGANIZATION

Subject Code: SZ23C

COURSE OBJECTIVES:

1. To understand the data representation, code conversion and operations of Microprocessor.
2. To understand the basic organization of computers and the working of each component.
3. To bring the programming features of 8085 Microprocessor and know the features of latest microprocessors.
4. To learn about the assembly language programs and interrupts
5. To understand the principles of Interfacing I/O devices and Direct Memory accesses

SYLLABUS:

UNIT – I:

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

UNIT – II:

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

UNIT – III:

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

UNIT – IV:

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

UNIT – V:

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

COURSE OUTCOMES:

1. Gain knowledge about data representation and code conversion methods.
2. Understand the basic organizations of a computer system and CPU
3. Understand the concept of microprocessor architecture and the programming features
4. Ability to write the assembly language programs
5. Understand the principles of Interfacing I/O devices and Direct Memory accesses

TEXT BOOKS:

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

REFERENCE BOOKS:

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

WEB REFERENCES:

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

MAPPING-COURSE OBJECTIVES WITH PROGRAMME OUTCOME:

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	S	S	M	M	M
CO2	M	M	S	M	S
CO3	S	S	M	M	S
CO4	S	S	M	M	M
CO5	M	L	M	S	M

Key: S-Strong, M-Medium/Moderate, L-Low

Subject Name: FINANCIAL ACCOUNTING

Subject Code: SZ33A

COURSE OBJECTIVES:

1. To familiarize the students with knowledge about financial reporting standards
2. To enable the students to understand the system of preparing financial statements of various types of organization
3. To develop an awareness of depreciation and single entry
4. To enrich and familiarize the concept to the students about Branch Accounting and departmental accounts
5. To understand the accounting principles of Partnership Accounts.

SYLLABUS:

UNIT – I:

Accounting structure – Basic concepts & conversions. Accounting equation – Meaning of accounting – Groups interested in accounting information – Trial Balance – Final account – Rectification of errors – Suspense Accounts

UNIT – II:

Depreciation – Meaning – methods of providing depreciation. Fixed percentage on original cost – WDV method. Single entry – definition and features of statement of affairs – conversion method – average due date. Account current & investment accounts.

UNIT – III:

Branch account – P/L Account, stock & Debtors system. Distinction between wholesale profit and retail profit - Independent branch (foreign branch excluded). Departmental Accounts – basic for allocation of expenses - Inter departmental transfer at cost or selling price – Treatment of expenses which cannot be allocated.

UNIT – IV:

Hire purchase & installment purchase: method legal position – accounting aspects – Default & repossession. Hire purchase trading – Installment system. Sale or return: meaning & legal position – under different circumstances.

UNIT – V:

Partnership Accounts. Fixed & fluctuating capital – final accounts for firms – Admission – Retirement – Death. Dissolution of partner – insolvency of partners (Garner Vs Murray) – insolvency of all partner Gradual realization of assets and piecemeal distribution.

COURSE OUTCOMES:

1. Students will be aware of the various amendments in financial reporting
2. Students will be able to analyze and prepare financial statement of different types of organization
3. They will be aware of the concepts in depreciation and single entry
4. The students will have a knowledge about Branch and departmental accounting
5. They will understand partnership accounting on admission, retirement and dissolution

REFERENCE BOOKS:

1. Gupta R.L, Advanced Accountancy, S.Chand, Delhi.
2. Agarwala A.N, Higher Science of Accountancy, Kitab Mahal, Allahabad.
3. S.P. Jain and K.L.Narang, Financial Accounting.
4. M.C.Shukla and T.S.Grawel, Advanced Accounts (Vol. I)
5. Gillespie Accounting system, Procedure & methods, Prentice Hall India ltd, New Delhi.

MAPPING-COURSE OBJECTIVES WITH PROGRAMME OUTCOME:

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	S	M	M	S	S
CO2	S	M	M	S	M
CO3	S	M	M	M	S
CO4	S	M	M	M	S
CO5	S	M	M	S	S

Key: S-Strong, M-Medium/Moderate, L-Low

Subject Name: PERSONALITY ENRICHMENT – LEVEL I

Subject Code: TSSEG

COURSE OBJECTIVES:

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

SYLLABUS:

UNIT – I: SELF DISCLOSURE

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

i. Self Description– Reflect and answer the following questions on a sheet of paper about yourself: Who am I? What am I like? How do others perceive me? What are my strengths as a person? In what areas do I want to develop greater skills?

ii. Adjective Checklist – the following exercise is aimed at providing an opportunity for participants to disclose their view of themselves to the other members of their group and to receive feedback on how the other group members perceive them.

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

UNIT – I: SELF DISCLOSURE

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

Exercises:

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

Unit III – Interpersonal Effectiveness

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

Exercises:

1. Being positive about yourself
2. Understanding your shyness analyze the social situation of shyness and the

causes of your shyness.

3. Systematic Muscle Relaxation train one in the procedure for systematic muscle relaxation.
4. Learning how to breathe deeply help one to relax systematically when one is anxious by controlling one's breathing.

Unit IV: Study Skills

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

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

Unit V: Goal Setting and Managing Time

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

Exercises:

1. Steps to prepare one's short term goals and long term goals.
2. Role play activity through reflection of identifying how priority managementaffect one's ability to live a balanced life.

REFERENCES:

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

LEARNING OUTCOMES:

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

Subject Name: PRACTICALS III/ DATA STRUCTURES USING JAVA LAB

Subject Code: SZ231

COURSE OBJECTIVES

1. To implement linear and non-linear data structures
2. To understand the different operations of search trees
3. To implement graph traversal algorithms
4. To get familiarized to Searching algorithms
5. To get familiarized to Sorting algorithms

SYLLABUS:

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

COURSE OUTCOMES:

1. Write functions to implement linear and non-linear data structure operations.
2. Suggest appropriate linear and non-linear data structure operations for solving a given problem.
3. Write algorithms for tree-traversals.
4. Write searching methods
5. Analyse various sorting methods

MAPPING-COURSE OBJECTIVES WITH PROGRAMME OUTCOME:

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	S	M	S	S	S
CO2	M	S	M	S	S
CO3	S	M	M	S	S
CO4	S	M	S	S	M
CO5	S	S	S	S	M

Key: S-Strong, M-Medium/Moderate, L-Low

SEMESTER IV

Subject Name: COMPUTER NETWORKS

Subject Code: SZ24A

COURSE OBJECTIVES:

1. To understand the basic concept of Computer network.
2. To impart knowledge about inter networking devices and communication media.
3. To learn about protocols used in various layers.
4. To acquire knowledge about algorithms used in various layers.
5. To study the basics of Network Security

SYLLABUS:

UNIT - I

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

UNIT - II

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

UNIT - III

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

UNIT - IV

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

UNIT - V

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

COURSE OUTCOMES

1. Analyse and compare different network models.
2. Able to list out the features of various communication media.
3. Able to explain the working of various protocols.
4. Able to identify appropriate algorithms that fits in a particular layer.
5. To demonstrate cryptographic concepts in Network Security.

TEXT BOOKS:

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

REFERENCE BOOKS:

1. Stallings, “Data and Computer Communications”, Pearson Education 2012, 7th Edition.
2. B. A. Forouzan, “Data Communications and Networking”, Tata McGraw Hill 2007, 4th Edition.

3. F. Halsall, “Data Communications, Computer Networks and Open Systems”, Pearson Education 2008.
4. D. Bertsekas and R. Gallagher, “Data Networks”, PHI 2008, 2nd Edition.
5. Lamarca, “Communication Networks”, Tata McGraw Hill 2002.

WEB REFERENCES:

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

MAPPING-COURSE OBJECTIVES WITH PROGRAMME OUTCOME:

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	S	L	M	M	M
CO2	S	L	M	M	M
CO3	S	L	M	M	M
CO4	S	M	M	M	M
CO5	S	M	M	S	M

Key: S-Strong, M-Medium/Moderate, L-Low

Subject Name: OPEN SOURCE TECHNOLOGIES

Subject Code: SZ24B

COURSE OBJECTIVES:

1. To provide a basic idea of Open-source technology.
2. Understand software development process
3. To understand the role and future of open-source software in wide areas.

SYLLABUS:

UNIT - I

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

UNIT - II

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

UNIT - III

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

UNIT - IV

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

UNIT - V

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

COURSE OUTCOMES

1. To recognize the benefits and features of Open-Source Technology and to interpret, contrast and compare open-source products among themselves
2. To design and develop open-source projects.
3. Able to apply open-source ethics in usage of any open-source software
4. Able to understand the concepts of open-source projects and its requirement for implementation.
5. Compare and contrast the concepts of open and closed source software

TEXT BOOKS:

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

REFERENCE BOOKS:

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

WEB REFERENCES:

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

MAPPING-COURSE OBJECTIVES WITH PROGRAMME OUTCOME:

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	S	S	L	S	M
CO2	L	S	M	M	S
CO3	S	L	S	S	S
CO4	S	S	S	S	M
CO5	S	M	S	L	M

Key: S-Strong, M-Medium/Moderate, L-Low

Subject Name: E-COMMERCE TECHNOLOGIES

Subject Code: SZ24C

COURSE OBJECTIVES:

1. Provide students with an overview and understanding of e-commerce with a specific emphasis on Internet Marketing.
2. Analyze the enabling technologies of the world wide web and e-marketing
3. Explore the major issues associated with e-commerce-security, privacy, intellectual property rights, authentication, encryption, acceptable use policies, and legal liabilities.
4. Classify, compare and contrast the various payment systems.
5. Comprehend information system, wireless technologies and management modules

SYLLABUS:

UNIT - I

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

UNIT - II

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

UNIT - III

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

UNIT - IV

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

UNIT - V

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

COURSE OUTCOMES

1. Obtain a general understanding of basic business management concepts.
2. Able to grasp enabling technologies.
3. Elucidate the security issues, threats and challenges of E-Commerce.
4. Distinguish pros and cons of various payment systems.
5. Cognize the human resource information system modules.

TEXT BOOKS:

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

REFERENCE BOOKS:

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

MAPPING-COURSE OBJECTIVES WITH PROGRAMME OUTCOME:

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	S	M	S	S	S
CO2	M	S	M	S	M
CO3	S	S	L	S	L
CO4	S	S	M	M	L
CO5	S	M	S	S	M

Key: S-Strong, M-Medium/Moderate, L-Low

Subject Name: COST AND MANAGEMENT ACCOUNTING

Subject Code: SZ34A

COURSE OBJECTIVES:

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

SYLLABUS:

UNIT - I

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

UNIT - II

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

UNIT - III

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

UNIT - IV

Overheads: Factory, Administration, Selling and Distribution of Overheads – Classification – Allocation and Apportionment – Redistribution (Secondary Distribution) – Absorption of Overheads including ‘Machine Hour Rate.

UNIT - V

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

COURSE OUTCOMES

1. Express the role and value of cost accounting in the modern economic environment.
2. Students are able to identify and compute the elements of costs
3. Enable the students to identify the differences between management accounting and financial accounting and management accounting and cost accounting.
4. To apply the marginal costing techniques in taking various managerial decisions.

5. Help the students to prepare purchases budget, sales budget, overhead budget, labour budget, cash budget and flexible budget.

TEXT BOOKS:

1. Wheldon A.J., Cost Accounting and Costing Methods.
2. Iyengar S.P., Cost Accounting: Principles and Practice.
3. Bhar B.K., Cost Accounting: Methods and Problems.
4. Bigg W.W., Cost Accounts.

REFERENCE BOOKS:

1. Prasad N.K., Cost Accounting: Principles and Problems.
2. Jain S.P. and Narang K.L., Advanced Cost Accounting.
3. Agarwal M., Theory and Practices of Cost Accounting.
4. Robert Anthony: Management Accounting: Text and Cases.
5. Maheshwari S.N., Principles of Management Accounting.

WEB REFERENCES:

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

MAPPING-COURSE OBJECTIVES WITH PROGRAMME OUTCOME:

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	S	M	M	S	S
CO2	S	M	M	S	S
CO3	S	M	M	M	S
CO4	S	M	M	S	S
CO5	S	M	M	S	M

Key: S-Strong, M-Medium/Moderate, L-Low

Subject Name: OPEN SOURCE TECHNOLOGIES LAB

Subject Code: SZ241

COURSE OBJECTIVES

1. To be aware of the various open source software available for different problem needs
2. To be familiar with the usage of the software like installation and configuration
3. To be able to work in open source softwares.
4. Allows to work with linux OS.
5. Able to control Version

SYLLABUS:

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

COURSE OUTCOMES:

1. Students must be able to use appropriate open-source tools based on the nature of the problem
2. Students should be able to code and compile different open-source software
3. Design and develop simple applications using PERL, PHP and Python
4. Implement the usage of various Operating System
5. Able to control version in the software

MAPPING-COURSE OBJECTIVES WITH PROGRAMME OUTCOME:

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	S	M	M	M	L
CO2	S	L	S	M	S
CO3	M	S	S	L	S
CO4	M	S	M	M	M
CO5	M	L	M	M	M

Key: S-Strong, M-Medium/Moderate, L-Low

Subject Name: PERSONALITY ENRICHMENT – LEVEL II

Subject Code: TSSEH

COURSE OBJECTIVES

1. To understand the nature, causes, symptoms and repercussions of stress.
2. To recognize trust as a crucial factor for better work performance.
3. To know how conflict resolution skill is a competitive advantage at work.
4. To realize that emotional intelligences as important as academic intelligence for success in life.
5. To appreciate the contribution of self esteem in building a positive personality.

SYLLABUS:

UNIT 1: STRESS MANAGEMENT

The Nature of Stress – A wellness Lifestyle – Distress symptoms: emotional distress, cognitive distress, behavioural distress, physical distress symptoms – managing stress: exercise, nutrition, sleep, healthy pleasures – self talk and stress – Relaxation Methods: breathing techniques, meditation techniques, visualization techniques – self hypnosis- muscle relaxation techniques – Using social support.

Exercises:

1. Distressors and Distress Symptoms
2. Identifying Personal uses for self talk management
3. Social support networks from which you draw and networks through which you give social support

UNIT 2: MAINTAINING TRUST

Developing and maintaining trust – being trusting and trustworthy – building interpersonal trust – re-establishing trust after it has been broken – trusting appropriately – trust and friendship.

Exercises:

1. Practicing Trust Building Skills
2. Developing Trust

UNIT 3: RESOLVING INTERPERSONAL CONFLICTS

Understanding conflicts of Interests- conflict strategies – negotiating to win – negotiating to solve the problems – steps for effective problem solving negotiating – refusal skills.

Exercises:

1. Non verbal conflict
2. Confronting the opposition
3. Using the conflict strategies – role playing

UNIT 4: APPLYING EMOTIONAL INTELLIGENCE

Emotional Intelligence and emotional competence - components of emotional intelligence – behavioural skills of emotional intelligence.

Exercise:

Role model using a modelling/group exercise

UNIT 5: ENHANCING SELF ESTEEM

Self theory and the Johari window- Characteristics of fully functioning individuals – manifestations of low and high self esteem – techniques for enhancing self esteem – nurturance techniques

Exercises:

1. Weakness-strength
2. Managing your identified areas of self criticism and dealing with negative messages.
3. Nurturing relationships

REFERENCES:

1. Schafer, W. (1998). Stress Management for Wellness. 4 th edition. Australia: Thomson & Wadswoth.
2. Johnson, D.W. (1997). Reaching out – Interpersonal Effectiveness and Self Actualization. 6th ed. Boston: Allyn and Bacon.
3. Robbins, S. P. and Hunsaker, Phillip, L. (2009). Training in Interpersonal skills. Tips for managing people at work. 5th ed. New Delhi: PHI Learning.
4. Frey, D and Carlock, C. (1989). Enhancing Self Esteem. 2 nd edition. Indiana: Accelerated Development INC.

LEARNING OUTCOMES:

After completion of this paper the students will be able to:

1. To manage their stress better through enhanced understanding about its nature and cause.
2. To practice trust building in their personal and professional lives.
3. To apply conflict resolution skills appropriately.
4. To relate the behaviour of self and others with emotional intelligence.
5. To maintain a better self esteem irrespective of shortcomings they may encounter in life.

Subject Name: ENVIRONMENTAL STUDIES

Subject Code: ENV4B

COURSE OBJECTIVES

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

SYLLABUS:

Unit - I

Introduction to Environmental Studies: Multidisciplinary nature of environmental studies; Scope and importance; concept ofsustainability and sustainable development.

Unit - II

Ecosystem (2 lectures)

What is an ecosystem? Structure and function of ecosystem; Energy flow in anEco system:Food chains, food webs and ecological succession, Case studies of the following ecosystem:

a) Forest ecosystem

b) Grassland ecosystem

c) Desert ecosystem

d) Aquatic ecosystem (ponds, stream, lakes, rivers, ocean, estuaries)

Unit - III

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

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

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

Unit - IV

Biodiversity and Conservation (8 lectures)

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

Unit - V

Environmental Pollution (8 lectures)

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

Unit - VI

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

Unit - VII

Human Communities and the Environment (7 lectures) Human population growth, impacts on environment, human health and welfare. Resettlement and rehabilitation of projectsaffected persons; case studies. Disaster management: floods, earthquake, cyclone and landslides. Environmental movements : Chipko, Silent Valley, Bishnois of Rajasthan.

Environmental ethics : Role of Indian and other religions and cultures in environmental conservation. Environmental communication and public awareness, case studies(e.g. CNGVehicles in Delhi)

Unit - VIII

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

LEARNING OUTCOMES:

- Acquired fundamental knowledge of different aspects of environment andlocal, regional and global environmental problems.
- Acquired the knowledge and skills needed for the environmental design and management.
- Analyze and determine pollution using Environmental Analytical Techniques, Biostatistics andComputational Techniques.

SEMESTER V

Subject Name: DATABASE MANAGEMENT SYSTEM

Subject Code: SAZ5A

COURSE OBJECTIVES:

1. Introduces the basic concepts of database management systems

SYLLABUS:

UNIT - I

Advantages and Components of a Database Management Systems – Feasibility Study – Class Diagrams – Data Types – Events –Normal Forms – Integrity – Converting Class Diagrams to Normalized Tables – Data Dictionary.

UNIT - II

Query Basics – Computation Using Queries – Subtotals and GROUP BY Command – Queries with Multiple Tables – Sub queries –Joins – DDL & DML – Testing Queries

UNIT – III

Effective Design of Forms and Reports – Form Layout –Creating Forms – Graphical Objects – Reports – Procedural Languages –Data on Forms – Programs to Retrieve and Save Data – Error Handling.

UNIT - IV

Power of Application Structure – User Interface Features –Transaction – Forms Events – Custom Reports – Distributing Application – Table Operations – Data Storage Methods – Storing Data Columns – Data Clustering and Partitioning.

UNIT - V

Database Administration – Development Stages – Application Types – Backup and Recovery – Security and Privacy – Distributed Databases – Client/Server Databases – Web as a Client/Server System –Objects – Object Oriented Databases – Integrated Applications.

COURSE OUTCOMES

1. To Apply the database concepts and design database for the given information system and apply the concepts of Normalization and design database which possess no anomalies.
2. To Create database and develop database programming skills then perform computations on SQL and to implement different types of joins and its applications.
3. Learn to make effective form design with graphical objects, to retrieve and save data to the database and handling exception.
4. Representation of application structure, partitioning and clustering and performing operations on table.
5. To familiarize with database administrator, backup and recovery, security and privacy along with distributed and client server databases.

TEXT BOOKS:

1. G. V. Post – Database Management Systems Designing and Building Business Application – McGraw Hill International edition – 1999.

REFERENCE BOOKS:

1. Raghu Ramakrishnan – Database Management Systems – WCB/McGraw Hill – 1998.
2. C.J. Date – An Introduction to Database Systems – th Edition – Addison Wesley -2000.

MAPPING-COURSE OBJECTIVES WITH PROGRAMME OUTCOME:

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	S	S	S	S	M
CO2	M	S	M	S	M
CO3	S	S	S	M	S
CO4	M	S	S	S	M
CO5	S	M	M	S	S

Key: S-Strong, M-Medium/Moderate, L-Low

Subject Name: SOFTWARE ENGINEERING

Subject Code: SAZ5B

COURSE OBJECTIVES:

1. To Understand Software Engineering concepts .
2. Identify the key activities in managing a software project.
3. To acquire knowledge of Requirement Engineering and Analysis Modeling.
4. To Understand about Software Design and Implementation.
5. Understanding of Software Testing approaches and Maintenance.

SYLLABUS:

UNIT - I

Introduction to Software Engineering Some definition – Some size factors – Quality and productivity factors – Managerial issue. Planning a Software Project: Defining the problem – Developing a solution strategy – planning the development process – planning an organization structure – other planning activities.

UNIT - II

Software Cost Estimation: Software – Cost factors – Software cost estimation techniques – specification techniques – level estimation – estimating software maintenance costs. The software requirements specification – formal specification techniques - languages and processors for requirements specification.

UNIT – III

Software Design: Fundamental Design concepts – Modules and modularizing Criteria – Design Notations – Design Techniques – Detailed Design Consideration – Real time and distributed system design – Test plan – Mile stones walk through and inspection.

UNIT - IV

Implementation issues: Structured Coding techniques – coding style – standards and guidelines – documentation guidelines – type checking – scooping rules – concurrency mechanisms.

UNIT - V

Quality assurance – walk through and inspection - Static analysis – symbolic exception – Unit testing and Debugging – System testing – Formal verification: Enhancing maintainability during development – Managerial aspects of software maintenance – Configuration management – source code metrics – other maintenance tools and techniques.

COURSE OUTCOMES

1. Identify factors that affect size, Quality Issues, Plan a software Project.
2. Identify Requirements, Analyze and prepare Models.
3. Ability to Design and Implement the software projects.
4. Knowledge about the different testing methods and testing execution.
5. Ability to perform Debugging and Maintenance operation

TEXT BOOKS:

1. Richard E.Fairly - Software Engineering Concepts - Tata McGraw-Hill book Company.

REFERENCE BOOKS:

1. R.S.Pressman, 1997, Software Engineering – 1997 - Fourth Ed., McGraw Hill.
2. Rajib Mall ,2004,Fundamentals of Software Engineering,2nd Edition, PHI.

MAPPING-COURSE OBJECTIVES WITH PROGRAMME OUTCOME:

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	M	S	M	S	S
CO2	M	S	M	S	M
CO3	S	M	S	M	S
CO4	M	M	S	M	S
CO5	S	M	M	S	S

Key: S-Strong, M-Medium/Moderate, L-Low

Subject Name: RESOURCE MANAGEMENT TECHNIQUES

Subject Code: SAZ5C

COURSE OBJECTIVES:

1. To learn the basic concepts, models and statements of Operation Research theory which are frequently applied to business decision making.
2. To make use of simplex method to solve optimization problems.
3. The objective is to minimize the total cost of transporting goods from the various supply origins to the different demand destinations.
4. The objective of sequencing is to determine the sequence of performing jobs such that we can minimize the total cost/time.
5. The techniques help managers to optimize the longest time duration in order to minimize the total project cost and time.

SYLLABUS:

UNIT - I

Basics of Operations Research (OR): Characteristics of O.R - Necessity of O.R in Industry -OR and Decision making - Role of computers in O.R. Linear programming: Formulations and Graphical solution (of 2 variables) canonical & standard terms of Linear programming problem. Algebraic solution: Simplex method.

UNIT - II

Algebraic solution: Charnes method of penalties - two phase simplex method - concept of Duality - properties of duality - Dual simplex method

UNIT – III

Transportation model: Definition - formulation and solution of transportation models - the row - minima, column - minima, matrix minima and vogel's approximation methods. Assignment model: Definition of Assignment model - comparison with transportation model- formulation and solution of Assignment model - variations of Assignment problem

UNIT - IV

Sequencing problem: Processing each of n jobs through m machines - processing n jobs through2 machines - processing n jobs through 3 machines - processing 2 jobs through m machines - processing n jobs through m machines - travelling salesman problem. Game Theory: Characteristics of games - Maximin, Minimax criteria of optimality – Dominance property - algebraic and graphical method of solution of solving 2 x 2 games.

UNIT - V

Pert - CPM: Networks - Fulkerson's Rule - measure of activity - PERT computation - CPM computation - resource scheduling. Simulation: Various methods of obtaining random numbers for use in computer simulation - Additive, multiplicative and mixed types of congruence random number generators - Monte Carlo method of simulation - its advantages and disadvantages

COURSE OUTCOMES

1. Identify and develop operational research models from the verbal description of the real system. Use mathematical software to solve the proposed models.
2. Understand the mathematical tools that are needed to solve optimization problems
3. Understand how to accommodate unequal supply and demand conditions as well as unacceptable routes, capacitated routes, or capacitated transshipment points. Pert - CPM: Monte Carlo method of simulation - its advantages and disadvantages
4. Sequencing problems are concerned with an appropriate order (sequence) for a series of jobs to be done on a finite number of service facilities

5. Students will discover the project life cycle and learn how to build a successful project from pre-implementation to completion.

TEXT BOOKS:

1. Hamdy A. Taha: ,1996,Operation Research An Introduction, 5th edition, Prentice Hallof India, Pvt. Ltd., New Delhi .

REFERENCE BOOKS:

1. Ackoff R.L. and Sasieni M. W, 1968, Fundamentals of Operations Research,John Wiley and sons, New York.
2. Charnes A. Cooper W. and Hendersen A.,1953, Introduction to Linear Programming,Wiley and Sons, New York.
3. Srinath L.S,1973, PERT and CPM principles and applications, Affiliated East West PressPvt. Ltd., New York .

MAPPING-COURSE OBJECTIVES WITH PROGRAMME OUTCOME:

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	S	S	S	S	S
CO2	S	S	S	M	M
CO3	M	M	S	S	S
CO4	S	S	S	M	S
CO5	S	S	S	S	S

Key: S-Strong, M-Medium/Moderate, L-Low

Subject Name: VISUAL PROGRAMMING

Subject Code: SEZ5A

COURSE OBJECTIVES:

1. To inculcate knowledge on Visual Basic concepts and Programming

SYLLABUS:

UNIT - I

Customizing a Form - Writing Simple Programs - Toolbox - Creating Controls - Name Property - Command Button - Access Keys - Image Controls - Text Boxes - Labels - Message Boxes - Grid - Editing Tools - Variables - Data Types - String - Numbers.

UNIT - II

Displaying Information - Determinate Loops - Indeterminate Loops - Conditionals - Built-in Functions - Functions and Procedures.

UNIT – III

Lists - Arrays - Sorting and Searching - Records - Control Arrays - Combo Boxes - Grid Control - Projects with Multiple forms - DoEvents and Sub Main - Error Trapping

UNIT - IV

VB Objects - Dialog Boxes - Common Controls - Menus - MDI Forms - Testing, Debugging and Optimization - Working with Graphics.

UNIT - V

Monitoring Mouse activity - File Handling - File System Controls - File System Objects - COM/OLE - automation - DLL Servers - OLE Drag and Drop.

COURSE OUTCOMES

1. To learn various visual basic concepts
2. Front-end designing using Visual Basic is done.
3. Connectivity between front-end and back-end will be done.
4. Report Generation done using various report tools
5. File handling in Visual Basic

TEXT BOOKS:

1. Gary Cornell - Visual Basic 6 from the Ground up - Tata McGraw Hill - 1999.

REFERENCE BOOKS:

1. Noel Jerke - Visual Basic 6 (The Complete Reference) - Tata McGraw Hill – 1999

MAPPING-COURSE OBJECTIVES WITH PROGRAMME OUTCOME:

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	M	S	S	S	S
CO2	M	M	M	S	S
CO3	M	S	M	S	S
CO4	L	S	M	S	S
CO5	M	S	S	M	S

Subject Name: RDBMS LAB

Subject Code: SAZ51

COURSE OBJECTIVES

1. This course gives an exposure to visual programming using Visual Basic software
2. To learn about the table creation and queries using SQL Server
3. To learn about the menus and its creation.
4. To learn about Visual Basic programs and database connectivity
5. To understand the Creation of Report in Visual Basic

SYLLABUS:

Creation of a Database and performing the operations given below using a Menu Driven Program.
a) Insertion b)Deletion c) Modification d) Generating a Simple report for the following:

1. Payroll
2. Mark sheet Processing
3. Saving Bank account for banking
4. Inventory System
5. Invoice system
6. Library information system
7. Student information system
8. Income tax processing system
9. Electricity bill preparation system
10. Telephone directory maintenance

COURSE OUTCOMES:

1. Gain knowledge about Visual Basic software
2. Understand the basic queries and table creation using SQL Server
3. Ability to create the menus for the programs
4. Learnt about database connectivity and ability to write programs using Visual Basic
5. Understand the Report Creation. Design and implement simple project with Front End and Back End.

MAPPING-COURSE OBJECTIVES WITH PROGRAMME OUTCOME:

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	M	S	M	S	S
CO2	S	S	M	S	S
CO3	S	S	M	S	S
CO4	S	S	S	M	S
CO5	S	S	M	S	M

Key: S-Strong, M-Medium/Moderate, L-Low

Name of the Subject : VALUE EDUCATION
Subject Code : VAE5Q

Learning Objectives:

- Values are socially accepted norms to e valuate objects, persons and situations that form part and parcel of sociality.
- A value system is a set of consistent values and measures.
- Knowledge of the values are inculcated through education.
- It contributes in forming true human being, who are able to face life and make it meaningful

Syllabus:

UNIT - I

Value education-its purpose and significance in the present world–Valuesystem–Therole of culture and civilization – Holistic living – balancing the outer and inner – Body, Mind and Intellectual level – Duties and responsibilities.

UNIT - II

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

UNIT - III

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

UNIT - IV

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

UNIT V

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

Reference Book:

1. M.G. Chitakra: Education and Human Values, A.P.H. Publishing Corporation, New Delhi, 2003.
2. Chakravarthy, S.K: Values and ethics for Organizations: Theory and Practice, Oxford University Press, New Delhi, 1999.
3. Satchidananda, M.K: Ethics, Education, Indian Unity and Culture, Ajantha Publications, Delhi, 1991

SEMESTER VI

Subject Name: SOFTWARE TESTING

Subject Code: SAZ6C

COURSE OBJECTIVES:

1. To impart the knowledge of Software Testing.
2. To discuss and evaluate the Flow Testing Techniques.
3. To extract the Testing Strategies.
4. Instruction of Metrics and Classifications.
5. To Implement the Testing Scenarios with Decision tables and State Testing

SYLLABUS:

UNIT - I

Introduction: Purpose – Productivity and Quality in Software – Testing Vs Debugging – Model for Testing – Bugs – Types of Bugs – Testing and Design Style.

UNIT - II

Flow/Graphs and Path Testing – Achievable paths – Path instrumentation – Application – Transaction Flow Testing Techniques

UNIT – III

Data Flow Testing Strategies - Domain Testing: Domains and Paths – Domains and Interface Testing

UNIT - IV

Linguistic –Metrics – Structural Metric – Path Products and Path Expressions. Syntax Testing – Formats – Test Cases.

UNIT - V

Logic Based Testing – Decision Tables – Transition Testing – States, State Graph, State Testing.

COURSE OUTCOMES

1. To understand the Model and design of Software Testing
2. Understand the concepts of Paths and Flow/Graphs, able to implement the techniques in applications.
3. Extracting the nature of Data Flow Testing
4. Classification of Metrics and implementing Test Cases
5. Demonstrating the classification of Testing and understanding the concepts of Decision tables and State Graphs

TEXT BOOKS:

1. B. Beizer , 2003, Software Testing Techniques, II Edn., DreamTech India, New Delhi.
2. K.V.KK. Prasad , 2005, Software Testing Tools, DreamTech. India, New Delhi.

REFERENCE BOOKS:

1. Burnstein, 2003, Practical Software Testing, Springer International Edn.
2. E. Kit, 1995, Software Testing in the Real World: Improving the Process, Pearson Education, Delhi.
3. R.Rajani, and P.P.Oak, 2004, Software Testing, Tata Mcgraw Hill, New Delhi.

MAPPING-COURSE OBJECTIVES WITH PROGRAMME OUTCOME:

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	M	S	S	S	S
CO2	M	S	S	S	S
CO3	S	M	S	S	S
CO4	M	S	S	S	S
CO5	S	S	S	S	S

Key: S-Strong, M-Medium/Moderate, L-Low

Subject Name: WEB TECHNOLOGY

Subject Code: SAZ6A

COURSE OBJECTIVES:

1. To understand the basics of scripting languages.
2. To study about the features of VBScript and Javascript.
3. To learn the basic language structure and controls of ASP.NET.
4. To study about the security and authentication concepts in ASP.NET.
5. To learn to create web applications that use the most recent client-side scripting languages.

SYLLABUS:

UNIT - I

Introduction to VBScript - Adding VBScript Code to an HTML Page - VB Script Basics - VBScript Data Types - VBScript Variables - VBScript Constants - VBScript Operators – mathematical-comparison-logical - Using Conditional Statements - Looping Through Code - VBScript Procedures – type casting variables - math functions –date functions – string functions –other functions - VBScript Coding Conventions - Dictionary Object in VBScript - Err Object

.UNIT - II

Introduction to Javascript – Advantages of Javascript – Javascript syntax - Data type –Variable - Array – Operator & Expression – Looping – control structures - Constructor Function – user defined function Dialog Box.

UNIT – III

Javascript document object model – Introduction – Object in HTML – Event Handling – Window object – Document object – Browser object – Form object – Navigator object – Screen object – Build in object – User defined object – Cookies

UNIT - IV

ASP.NET Language Structure – Page Structure – Page event , Properties & Compiler Directives . HTML server controls – Anchor, Tables, Forms, Files . Basic Web server Controls – Label, Text box, Button, Image Links, Check & radio Button, Hyperlink, DataList Web Server Controls – Check box list. Radio button list, Drop down list, List box, Data grid, Repeater.

UNIT - V

Request and Response Objects, Cookies, Working with Data – OLEDB connection class, command class, transaction class, data adaptor class, data set class. Advanced issues – email, Application issues, working with IIS and page Directives , error handling.Security – Authentication, IP Address, Secure by SSL & Client Certificates.

COURSE OUTCOMES

1. To create web pages using various HTML tags and VBScript.
2. To implement DOM of Javascript in developing simple web applications.
3. To design simple ASP.NET applications.
4. Able to apply some advanced features in developing ASP.NET applications.
5. Develop a web application using scripting languages.

TEXT BOOKS:

1. Bayross, 2000, Web Enabled Commercial Application Development Using HTML, DHTML, Javascript, Perl CGI, BPB Publications.
2. A.Russell Jones, Mastering Active Server Pages 3, BPB Publications.

REFERENCE BOOKS:

1. HathleenKalata, Internet Programming with VBScript and JavaScript, Thomson Learning
2. Mike McGrath, XML Harness the Power of XML in easy steps, Dreamtech Publications
3. T.A. Powell, 2002,Complete Reference HTML , TMH.
4. J.Jaworski, 1999, Mastering Javascript, BPB Publications.
5. Powell, Thomas; Schneider, Fritz, JavaScript: The Complete Reference, 2nd edition2004, TMH

MAPPING-COURSE OBJECTIVES WITH PROGRAMME OUTCOME:

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	S	M	M	L	M
CO2	S	M	M	L	M
CO3	S	S	M	M	M
CO4	S	S	M	M	S
CO5	S	M	S	M	S

Key: S-Strong, M-Medium/Moderate, L-Low

Subject Name: DATA COMMUNICATION AND NETWORKING

Subject Code: SAZ6B

COURSE OBJECTIVES:

1. To learn the components of communication devices.
2. To learn various network topologies.
3. To learn about various types of networks available for communications.
4. To understand the functioning of ATM
5. To learn various routing algorithms.

SYLLABUS:

UNIT - I

Introduction to Data Communication, Network, Protocols & standards and standards organizations - Line Configuration - Topology - Transmission mode - Classification of Network - OSI Model - Layers of OSI Model

UNIT - II

Parallel and Serial Transmission - DTE/DCE/such as EIA-449, EIA-530, EIA-202 and x.21 interface - Interface standards - Modems - Guided Media - Unguided Media - Performance - Types of Error - Error Detection - Error Corrections.

UNIT – III

Multiplexing - Types of Multiplexing - Multiplexing Application - Telephone system - Project 802 - Ethernet - Token Bus - Token Ring - FDDI - IEEE 802.6 - SMDS - Circuit Switching - Packet Switching - Message switching - Connection Oriented and Connectionless services.

UNIT - IV

History of Analog and Digital Network - Access to ISDN - ISDN Layers – Broadband ISDN - X.25 Layers - Packet Layer Protocol - ATM - ATM Topology - ATM Protocol.

UNIT - V

Repeaters - Bridges - Routers - Gateway - Routing algorithms - TCP/IP Network, Transport and Application Layers of TCP/IP - World Wide Web

COURSE OUTCOMES

1. Understand the basics of data communication, networking, internet and their importance.
2. Able to understand the encoding methods of analog and digital transmission.
3. Understanding the use of LAN components like Bridges, Routers, Switches etc..
4. Analyze and apply various routing algorithms to find the shortest path for a given network
5. Understanding the connection establishment and congestion control with respect to TCP Protocol.

TEXT BOOKS:

1. Behrouz and Forouzan,2001, Introduction to Data Communication and Networking, 2nd Edition, TMH.

REFERENCE BOOKS:

1. Jean Walrand 1998,Communication Networks (A first Course),Second Edition, WCB/McGraw Hill.
2. Behrouz and Forouzan,2006, Data Communication and Networking,3nd Edition, TMH

MAPPING-COURSE OBJECTIVES WITH PROGRAMME OUTCOME:

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	S	S	L	S	S
CO2	S	S	M	M	M
CO3	M	S	M	S	L
CO4	S	S	M	S	M
CO5	M	S	S	M	M

Key: S-Strong, M-Medium/Moderate, L-Low

Subject Name: MULTIMEDIA SYSTEMS

Subject Code: SEZ6D

COURSE OBJECTIVES:

1. To learn various routing algorithms._Students will be able to understand the significance and underlining infrastructure of multimedia system.
2. Understand the working principles of various multimedia input-output devices.
3. To understand the multimedia systems components, evolving technologies and fundamental elements of any multimedia system.
4. Gain knowledge about various multimedia related standards.
5. Understand the design and development process of multimedia projects

SYLLABUS:

UNIT - I

What is Multimedia: Definitions - CD-ROM and the Multimedia Highway - Where to use Multimedia - Introduction to Making Multimedia: The stages of a Project - What You Need – Multimedia Skills and Training: The team - Macintosh and Windows Production Platforms: Macintosh Versus PC - The Macintosh Platform – The Windows Multimedia PC Platform - Networking Macintosh and Windows Computers- Hardware Peripherals: Connection - Memory and Storage Devices - Input Devices - Output Hardware – Communication Devices

UNIT - II

Basic Tools: Text Editing and Word Processing Tools – OCR Software - Painting and Drawing Tools - 3-D Modeling and Animation Tools - Image-Editing Tools - Sound Editing Tools - Animation, Video and Digital Movie Tools - Helpful Accessories - Making Instant Multimedia: Linking Multimedia Objects - Office Suites – Word Processors - Spreadsheets - Databases - Presentation Tools. Multimedia Authoring Tools: Types of Authoring Tools - Card-and-Page-Based Authoring Tools - Icon-Based Authoring Tools - Time-Based Authoring Tools - Object-Oriented Authoring Tools - Cross-Platform Authoring Notes.

UNIT – III

Text: The Power of Meaning - About Fonts and Faces – Using Text in Multimedia - Computers and Text - Font Editing and Design Tools - Hypermedia and Hypertext - Sound: The Power of Sound - Multimedia System Sounds - MIDI Versus Digital Audio - Digital Audio- Making MIDI Audio - Audio File Formats - Working with Sound on the Macintosh - Notation Interchange File Format (NIFF) – Adding Sound to Your Multimedia Project - Toward Professional Sound: The Red Book Standard - Production Tips.

UNIT - IV

Images: Making Still Images -Color - Image File Formats. Animation: The Power of Motion - Principles of Animation – Making Animations That Work - Video: Using Video - How Video works - Broadcast Video Standards - Integrating Computers and Television -Shooting and Editing Video - Video Tips - Recording Formats – Digital Video.

UNIT - V

Planning and Costing : Project Planning - Estimating - RFPs and Bid Proposals - Designing and Producing : Designing - Producing -Content and Talent : Acquiring Content - Using Content Created by Others - Using Content Created for a Project - Using Talent - Delivering: Testing - Preparing for Delivery - Delivering on CD-ROM – Compact Disc Technology - Wrapping It Up - Delivering on the World Wide Web

COURSE OUTCOMES

1. Analyse the usage of Multimedia in Real World.
2. Realize the use of color, text and diagrams when representing information
3. Explore the different types of motion capture systems, virtual reality and how they can work together
4. Understand the principals of 3D animation are based on the traditional concepts of 2D animation
5. Deployment of a multimedia project, create a demo and its correspondent documentation which must reflects its result

TEXT BOOKS:

1. Tay Vaughan - Multimedia: Making it Work. - Fourth Edition - Tata McGraw Hill Edition - 1999..

REFERENCE BOOKS:

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

MAPPING-COURSE OBJECTIVES WITH PROGRAMME OUTCOME:

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	S	L	M	M	M
CO2	M	M	L	S	S
CO3	S	L	S	S	S
CO4	M	S	M	L	S
CO5	L	L	S	S	S

Key: S-Strong, M-Medium/Moderate, L-Low

Subject Name: E-COMMERCE

Subject Code: SEZ6B

COURSE OBJECTIVES:

1. To impart the knowledge and understanding the concepts of ECommerce
2. To discuss the concepts of Secure Transactions and Protocols.
3. To extract the Knowledge about the Payment Processes on Web Servers.
4. Instruction of Security Tools and Strategies.
5. To Implement the Payment with EDI over the Internet.

SYLLABUS:

UNIT - I

Electronic Commerce and Opportunities: Background the Electronic Commerce Environment – Electronic Marketplace Technologies – Modes of Electronic Commerce: Overview: Electronic Data Interchange.

UNIT - II

Approaches to Safe Electronic Commerce. Overview – Secure Transport Protocols – Secure Transaction – Secure Electronic Payment Protocol (SEPP) – Secure Electronic Transaction (SET)

UNIT - III

Certificates for Authentication – Security on Web Servers – Payment Schemes: Internet Monetary Payment and Security Requirements- Payment and purchase order process – Online electronic cash

UNIT - IV

Internet / Intranet Security Issues and Solutions: The Need for Computer Security – Specific Intruder Approaches – Security Strategies- Security Tools – Encryption – Enterprise Networking and Access to the Internet Antivirus Programs. - Security Teams

UNIT - V

MasterCard/Visa Secure Electronic Transaction: Introduction –Business Requirements – Concepts – payment Processing. E-mail and secure e-mail technologies for Electronic Commerce: Introduction the Means of Distribution – A model for Message Handling- MIME, S/MIME, MOSS, MIME and Related Facilities for EDI over the Internet.

COURSE OUTCOMES

1. To study about the concepts of Electronic commerce
2. To clarify the concepts of Secure Transport and Electronic Transaction
3. To implement the Security Strategies and Understanding the Concepts of Security tools.
4. To impart the applications of Security on Web Server and Payment Processes
5. Explanation of MIME, S/MIME, MOSS, MIME and demonstrating the Payment Processing

TEXT BOOKS:

1. Daniel Minoli & Emma Minoli, “Web Commerce Technology Handbook”. Tata McGraw Hill – 1999.

REFERENCE BOOKS:

1. K.Bajaj & D Nag , “E-Commerce”, Tata McGraw Hill – 1999.
2. Mamta Bhusry – “E-Commerce”

MAPPING-COURSE OBJECTIVES WITH PROGRAMME OUTCOME:

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	M	M	S	S	S
CO2	M	M	S	S	S
CO3	S	S	S	S	S
CO4	M	M	S	S	S
CO5	S	S	S	S	S

Key: S-Strong, M-Medium/Moderate, L-Low

Subject Name: WEB APPLICATION LAB

Subject Code: SAZ61

COURSE OBJECTIVES

1. To understand the features like choice lists, hit counter ,mouse over images etc.
2. To study about the retrieval of data from the database and display it on the webpage.
3. To learn about navigation through the web pages.
4. To acquire knowledge about various controls in ASP.
5. To learn about creation of web pages using scripts and ASP.

SYLLABUS:

1. Write a program outputs the squares, roots, cubes and complements of integers between 1 and 100.
2. Create a calculator.
3. Write a script to Sort numbers and strings
4. Create a program to generate a hit counter
5. Create a program to verify whether email address provided by user is valid or invalid.
6. Write a program to scroll the text on status bar.
   The form consists of two multiple choice list and one single choice list
   the first multiple choice list display the major dishes available.
   the second Multiple choice list display the stocks available.
   The single choice list display the miscellaneous (Milkshakes, soft drinks, softy available etc.)
7. Write a sript to create a digital clock.
8. Create a web page using two image file which switch black and white one another as the mouse pointer moves over the image. Use the On Mouse over and On Mouse event, onDblclick handler
9. Build a WWW page with an image and 3 buttons., Pick three favorite graphics, Label the buttons and make each one swap in the graphic you have chosen
10. Create a frameset that has two frames, side by side. Make the left-hand frame contain a form with 3 radio buttons
    The buttons should be for three search engines:
    Yahoo (http://www.yahoo.com)
    Altavista (http://www.altavista.com)
    Infoseek (http://www.infoseek.com)
    When the user clicks on of the option buttons, the frame on the right hand side should be loaded with the right search engine.
11. Write a program to implement Employee database with all validation
12. Create a login form, to expire, if the user does not type the password within 100 seconds Create an employee database and manipulate the records using command object in ASP
13. Develop an application to illustrate the usage of Request and Response Objects in
14. Write an ASP program using Request Object to give the exact list of headers sent by the browser to the Web server.
15. Create an Active Server Page to display the records one by one from a student database. The student database should contain roll no, name, marks & total.
16. Design an ASP application that describes books in the Online Bookshop.(Use AD Rotator Component, Content Rotator Component, Content Linking Component)
17. Create a document and add a link to it. When the user moves the mouse over the link it should load the linked document on its own (User is not required to click on the link).
18. Create a document, which opens a new window without a toolbar, address bar, or a status bar that unloads itself after one minute.
19. Create a document that accepts the user's name in a text field form and displays the same the next time when the user visits the site informing him that he has accessed the site for the second time, and so on.

COURSE OUTCOMES:

1. Able to create web pages using various controls.
2. To create simple scripts using VBScript and Javascript.
3. To apply the concept of request and response objects in developing web applications.
4. Analyze a web page and identify its elements and attributes.
5. Able to build web applications using scripting languages and ASP.

MAPPING-COURSE OBJECTIVES WITH PROGRAMME OUTCOME:

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	S	M	L	M	M
CO2	M	M	M	M	M
CO3	M	M	L	M	M
CO4	S	S	M	S	S
CO5	S	S	L	S	S

Key: S-Strong, M-Medium/Moderate, L-Low

INTERNAL AND EXTERNAL MARKS ASSESSMENT PROCEDURE

- All Language, Major, Allied , Elective, Value Education, EVS and Non Major Elective the assessment procedure is 25% of Internals (conducted by College) and 75% of External (University Examination).
- The assessment procedure for practical is 40% of Internals (conducted by college) and 60% of External (University Examination).
- Professional English & Soft Skills the assessment procedure is 50% of Internals (conducted by college) and 50% of External (University Examination).

INTERNAL ASSESSMENT PROCEDURE

SUBJECT NAME	MARKS	TOTAL	SPECIAL INSTRUCTION IF ANY
COMMUNICATIVE ENGLISH	Attendance -5 marks Continuous Assessment (Written Test or Assignment)- 10 marks Internal Examination Listening Tasks-15 marks Speaking (Individual topics or in pairs)- 15 marks Study Skills-5 marks	50 marks	
THEORY PAPERS	Assignments - 5 marks Seminar - 5 marks Attendance - 5 marks Internal Test - 10 marks	25 marks	Internal test 10 marks awarded considering best two test marks out of three tests
PROFESSIONAL ENGLISH	**Semester I** **Listening** Three passages - all passages to include a question on vocabulary. a. Instruction / process description followed by info gap activities to include questions on vocabulary. b. Listen and complete a flow chart. c. Simple content from domain, with questions pertaining to understanding and analysis (Critical Thinking) **15 marks** **Speaking** Three speaking activities Individual, pair and Group. All activities to include use of domain specific vocabulary a. Individual – short talk presentation with PPT b. Pair mind mapping – brain stormingwith Role play /Interview c. Group – Group Discussion **15 marks** **Reading** Two passages – fact and opinion (simple content from domain with questions pertaining to understanding and analysis (Critical Thinking). [All passages to include a question on	50 marks	

	vocabulary] a. Passage to distinguish fact and opinion **b.** Passage describing products / gadgets **10 marks** **Writing** [All activities to include use of domain specific vocabulary.] a. Develop a story with pictures **b.** Describe a process **10 marks** **Semester II** **Listening** Three passages - all passages to include a question on vocabulary A. Domain specific Lecture/ TED Talk/ Speech - followed by info gap activities to include questions on vocabulary. B. Listen to a Product Launch Speech – infer advantages and disadvantages of the product and vocabulary **C.** Listen to academic lectures/ watch academic videos - compose a paragraph based on them using appropriate vocabulary. **15marks** **Speaking** Three Speaking Activities - All activities to include use of domain specific vocabulary A. Individual [short talk, academic presentation with PPT on a domain specific topic / innovation and creation of a new product] **B.** Pair [create a vlog] C. Group. [small group discussion / debate on a domain specific topic] **15 marks** **Reading** Two passages **i.** Domain specific web page **(5 marks)** **ii.** Domain specific product with description **(5marks)** Each passage to be followed by questions pertaining to Understanding (1 mark) ← 10 Analysis (1 mark) ← CriticalThinking (1 mark) ← two questions on vocabulary (2 marks)← **Writing** Creating a Web Page **(5 marks)** B. Paraphrasing a domain specific article/ essay **(5 marks)**		

Practical Internals:

Attendance	5 Marks
Record	5 Marks
Practical Test best 2 out of 3	30 Marks
TOTAL INTERNAL MARKS	**40 Marks**

EXTERNAL ASSESSMENT
PROCEDURE

SUBJECT NAME	MARKS	TOTAL	SPECIAL INSTRUCTION IF ANY
COMMUNICATIVE ENGLISH	**Reading** One long comprehension passage, Info-gap questions, graph interpretation **20 marks** **Grammar** Spotting Errors, Direct & Indirect speech, Active & Passive voice, Tenses **10 marks** **Writing** Descriptive, Narrative, Compare & Contrast, Argumentative essay writing, Free Writing **20 marks**	50 marks	
THEORY PAPERS	**Section A - 20 marks** (l0 out of 12questions x 2 marks each) **Section B - 25 marks** (5out of 7 questions x 5 marks each) **Section C - 30 marks** (3 out of 5 questions x 10 marks each).	75 marks	
PROFESSIONAL ENGLISH	**Semester I** **Vocabulary** (MCQ, Info-gap questions – domain specific vocabulary) (Q. No. A,B**) 10 marks** **Reading** C. One long passage (simple content from domain with questions pertaining to understanding and analysis (Critical Thinking). **D.** Compare and contrast essay based on an info-graph – pie chart/ bar graph etc **20 marks** **Writing** **E.** Long Passage for Note making and summarising F. Free writing – **20 marks** **Semester II** **Vocabulary/Grammar/Punctuation** (MCQ, Info gap questions – domain specific vocabulary**) 10 marks** **Reading** One long Domain Specific Passage. [Simple content with questions pertaining to Understanding← Analysis and← Critical Thinking]← 2. Persuasive Essay based on a given product profile etc. **20marks** **Writing** 3. Paraphrasing a Passage into power point slides. (Writing content for PPT from a passage) 4. Creating Minutes/ Circular for a Meeting (Board/Company/Clients etc.)/ Speech writing 20marks	50 marks	

HEAD OF THE DEPARTMENT

SHANTHI RAVICHANDRAN

Digitally signed by SHANTHI RAVICHANDRAN
Date: 2022.11.17 17:02:00 +05'30'

PRINCIPAL