B.Sc. COMPUTER SCIENCE
SYLLABUS: 2011

CHOICE BASED CREDIT SYSTEM (CBCS)

St. JOSEPH'S COLLEGE (Autonomous)
Re-accredited with A+ Grade by NAAC
College with Potential for Excellence by UGC
TIRUCHIRAPPALLI - 620 002, TN
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| Total Credits for All Semesters | 145 |

Exam at the end of the year

Outside class hours

Additional credits (4+2=6) (Given to Soft skills in SEM IV and 2 core papers in VI)
Syllabus : 2011

B.Sc. Computer Science

முறையிட்டு - 1

முறையிட்டு - 4

(14 மாதம் முதல்)

பாரதிய பாதுகாப்பு பிரிவினால் பாட்டுகள்

நிறுவன நிறுவன நிறுவன

முறையிட்டு - 5

(14 மாதம் முதல்)

பாரதிய பாதுகாப்பு பிரிவினால்

பாட்டுகள் - 7 முதல் 12 முதல் இந்தியத்திலிருந்து

முறையிட்டு - 3

(10 மாதம் முதல்)

முறையிட்டு - 3

(10 மாதம் முதல்)

பாட்டுகள் - 1 | பாட்டுகள் - 2 | பாட்டுகள் - 3

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GENERAL ENGLISH – I

Objectives:
1. To enable the students to develop their effective communicative skills in English.
2. To empower the students with fluency and accuracy in the use of English Language.
3. To transform them into globally employable persons with placement skills.

UNIT-I 12 Hrs
Prose      Education.
           Employment.
           Unemployment.
Poem      William Shakespeare—“All the World’s a Stage.”
Letter Writing      Formal and Informal.
Short Story  O Henry – Robe of Peace. (Extensive Reading).
Essential English Grammar – 1-6 units

UNIT-II 12 Hrs
Prose      Application.
           Planning.
           Curriculum Vitae.
Poem      Ben Jonson—“On Shakespeare”
           Reading Comprehension
Short Story  Rudyard Kipling—The Miracle of Puran Bhagat
           (Extensive Reading).
Essential English Grammar – 7-12 units.

UNIT-III 11 Hrs
Prose      Interview.
           Reporting.
           General Knowledge.
Poem      Robert Herrick—“Gather Ye Rosebuds.”
           Note Making
Short Story  H.G.Wells—The Truth About Pyecraft (Extensive Reading).
Essential English Grammar – 13-18 units

UNIT-IV 20 Hrs
Prose      Review.(Super Toys)
           Stress.
           No Time.
Poem      Oliver Goldsmith—“The Village Schoolmaster”
           Developing story from hints
Short Story  John Galsworthy—“Quality” (Extensive Reading).
Essential English Grammar – 19-24 units

UNIT-V 15 Hrs
Prose      Killers.
           Galloping Growth.
           A Short Story.
Poem      William Blake—“From Auguries of Innocence”
           Précis Writing
Short Story  William Somerset Maugham— Mabel
           (Extensive Reading).
Essential English Grammar – 25-30 units

Text Books
Semester I

Hours/week : 5
Credit : 4

PROBLEM SOLVING USING C

Objective:
To learn the problem solving techniques along with the features of ‘C’ language and to develop programming skills

Unit – I (15 Hrs.)
Introduction to Computers: Generation of computers – Types of computers – Components of computer – Types of software – programming languages.

Unit - II (15 Hrs.)
Algorithms – Flow charts – Developing algorithms and flowcharts for solving simple problems using sequential, selection and iterative programming structures.

Unit – III (15 Hrs.)
Data Types - Variables - Operators - Control structures - Looping structures - Arrays - Strings.

Unit – IV (15 Hrs.)
Functions – Built-in-functions - Types of functions - Scope of Variables - Call by value and call by reference.

Unit – V (15 Hrs.)
Pointers - Pointer to Array - Pointer Array - Pointer Arithmetic - Pointer of Pointer - Functions and Pointers - Structures and Pointers – Dynamic Allocation - Function pointer-Structure and Union.

BOOKS FOR STUDY:

BOOK(S) FOR REFERENCE:
Objective: To give fundamental principles of digital electronics, semiconductor memories, A/D and D/A converters.

Unit – I (15 Hrs.)
Number Systems: Number systems - Decimal, Binary, Octal, Hexadecimal - conversion from one to another. Characters and codes: ASCII code, Excess-3 code, gray code - binary addition, subtraction, multiplication and division - unsigned binary numbers - signed magnitude numbers - complements in number systems.

Unit – II (15 Hrs.)
Logic Gates: AND, OR, NOT, NOR & NAND gates, EX-OR gates. Boolean Algebra and Boolean laws and theorems: De Morgan's theorems - Duality theorem - simplification of sum of product and product of sum expressions - Karnaugh map and simplifications.

Unit –III (15 Hrs.)
Simple arithmetic circuits: Half and Full adders - Binary adder/subtractor - BCD adder Data processing circuits: Multiplexers - Demultiplexers - Encoders and Decoders.

Unit – IV (15 Hrs.)

Unit – V (15 Hrs.)
Memory Elements: RAM - static RAM - Dynamic RAM - ROM - Magnetic Disk memories - Magnetic tape – Cache Memory

BOOK (S) FOR STUDY:
1. Donald P. Leach and Albert Paul Malvino, "Digital Principles and Application", Fifth Edition, Tata McGraw-Hill Publishing Company Ltd., New Delhi, 2003. UNIT I – Chapter 5; UNIT II – Chapters 2 & 3; UNIT III – Chapter 6 & 4; UNIT IV – Chapter 8, 9, 10;

BOOK FOR REFERENCE:
SOFTWARE LAB – I (PROBLEM SOLVING USING C)

1. Simple programs using Operators, sequential structure
2. Programs using Branching structures (If, switch, goto)
3. Programs using looping structures (for, while, do-while)
4. Operations on single dimensional array
5. Matrix operations
6. String manipulations (Using Array)
7. Working with functions
8. Working with Pointers
9. Working with Structures
10. Editing a record using function and structure pointer.

ALLIED MATHEMATICS - I

[For I B.Sc. Physics, Chemistry, Computer Science, Electronics, I BCA]

UNIT – I
Partial Fractions - Binomial Series - Summation of series - Finding terms - Coefficient of $x^n$ (simple problems only).

UNIT – II
Exponential Series - Summation - Logarithmic Series - Summation.

UNIT – III
Matrices – Rank of a matrix - Solving simultaneous linear equation in three unknowns using Elementary operations method - Eigen values and Eigen vectors - Verification of Cayley Hamilton theorem.

UNIT – IV
Higher Derivatives - Formation of equations involving derivatives - Applications of Leibnitz's theorem.

UNIT – V
Expansions of $\cos nq$ and $\sin nq$ - Powers of sines and cosines off in terms of functions of multiples of $q$.

Text Book:
பதிவு - 2  
11UGT210002  

பலகோணத்து - II  

பலகோணத்து  
1. சமத்துள்ள குழுக்களியல் எண்ணிக்கை வளர்ச்சிய.  
2. குழுக்கள் எண்ணிக்கையில் அலைவு. எண்ணிக்கையில் வளர்ச்சியும் பாலற்றம் பாலற்றம் பிள்ளை வளர்ச்சிய.  
3. நட்சத்தை எண்ணிக்கையில் வளர்ச்சியும் புகழ்ச்சிய.  

பாணாக்கள்  
1. குழுக்கள் முழுள்ள எண்ணிக்கையில் வளர்ச்சியும், புகழ்ச்சியும், பிள்ளை வளர்ச்சியும் வளர்ச்சிய.  
2. குழுக்கள் எண்ணிக்கையில் வளர்ச்சியும் புகழ்ச்சியும் எண்ணிக்கையில் வளர்ச்சிய.  

அட்சு : 1  
(12 மணி நேரம்)  
சிற்றொழிவுத்துறை - வரைக்குடும்ப வழிகாட்டு - புரோக்குக்குடும்ப வழிகாட்டு  
சிற்றொழிவுத்துறை - வரைக்குடும்ப வழிகாட்டு  

அட்சு : 2  
(12 மணி நேரம்)  
பலகோணம் - குழுக்கள் முழுள்ள எண்ணிக்கை  
குழுக்களில் வளர்ச்சியும் - குழுக்களில் புகழ்ச்சியும்  
குழுக்கள் - 7 முடிக் 9 புரோக்கு  

அட்சு : 3  
(12 மணி நேரம்)  
சிற்றொழிவுத்துறை - வரைக்குடும்ப வழிகாட்டு  
சிற்றொழியியில் குழுக்களில்: 1 - 20 மணி நேரம்  

அட்சு : 4  
(12 மணி நேரம்)  
சிற்றொழியியில் - வரைக்குடும்ப வழிகாட்டு  
சிற்றொழியில் - குழுக்களில் வளர்ச்சியும்  
சிற்றொழியில் - 10 முடிக்கு 12 மணி நேரம்  
சிற்றொழியில் - 21 - 37 மணி நேரம்  

B.Sc. Computer Science  

அட்சு : 5  
(12 மணி நேரம்)  
சிற்றொழியில் எண்ணிக்கை - நுழைவு படைத்து  
சிற்றொழியில் எண்ணிக்கை - நுழைவு செயல்பாடு வளர்ச்சியும் - குழுக்களில் வளர்ச்சியும்  

பலகோணத்து  
2. சிற்றொழியில் எண்ணிக்கை, புரோக்குக்குடும்ப வழிகாட்டு, 2010.  
3. முழுள்ள எண்ணிக்கை - புரோக்குக்குடும்ப வழிகாட்டு, 2011-2014  
4. குழுக்களில் எண்ணிக்கை, புரோக்குக்குடும்ப வழிகாட்டு, 2010  

பெட்டிப்பிள்ளை சமாதானம்  

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GENERAL ENGLISH –II

Objectives:
1. To enable the students to develop their effective communicative skills in English.
2. To empower the students with fluency and accuracy in the use of English Language.
3. To transform them into globally employable persons with placement skills.

UNIT-I 12 Hrs
Prose  Environment.
       A Dead Planet.
       Riddles.
Poem  William Wordsworth—Nutting.
       Shelley- Ozymandias.
       Filling Money Order Chalan and Bank Chalan
Short Story  G.K.Chesterton – The Hammer of God (Extensive Reading)
Essential English Grammar: -31-36 Units

UNIT-II 12 Hrs
Prose  Qahwah
       A Dilemma
       Computeracy
Poetry  John Keats—La Belle Dame Sans Merci
        Robert Browning- The Last Ride Together
Short Story  Katherine Mansfield—A Cup of Tea (Extensive Reading)
Dialogue Writing
Essential English Grammar:37-42Units

UNIT-III 11 Hrs
Prose  Review (Use Your English)
       You and Your English
Poetry  Walt Whitman- I Celebrate Myself.
        Mathew Arnold—Dover Beach.
**Objective:**
To expose different features of COBOL language and program development in COBOL.

**UNIT I (12 Hrs.)**
**Introduction to COBOL:** History of COBOL – Coding Format for COBOL Programs – Structure of a COBOL Program – Character Set – COBOL Words – Data Names and Identifiers – Literals – Figurative Constants – Continuation of Lines – Language Description Notation Identification and Environment division: Identification Division – Environment Division.

**UNIT II (12 Hrs.)**

**UNIT III (12 Hrs.)**

**UNIT IV (12 Hrs.)**
**Table Handling:** Occurs clause and Subscripting – Assigning values to Table Elements – one and two dimensional Tables – Perform verb and
Syllabus : 2011
Semester : II  Hours/week : 4
11UCS230205  Credit : 4

DISCRETE MATHEMATICS

Objective:
To know the applications of graph theory, computer representations of graph, fundamental ideas of mathematical logic, concepts of set theory and boolean algebra.

UNIT I  (12 Hrs.)

UNIT II  (12 Hrs.)

UNIT III  (12 Hrs.)

UNIT IV  (12 Hrs.)

UNIT V  (12 Hrs.)
Relation and orderings: Relations-properties- relation matrix and graph – partition and covering- equivalence,compatibility relations-composition of binary relations.
Function: Definition- composition of functions- Inverse functions-Binary and n-ary operations-Boolean algebra.

BOOK(S) FOR STUDY:
   Unit I and II: Chapters: 1,2, 3.1-3.7,7.1,7.9,9.1,9.2,11.5
   Unit III: Chapters: 1-1, 1- 2.1 – 1-2.4, 1-2.6 – 1-2.10.
   Unit IV: Chapters: 1.3, 2-1.1 – 2-1.6, 2-1.8, 2-1.9.
   Unit V: Chapters:2-3.1 – 2-3.7,3-4.1 – 3-4.4, 4-2.1(only definition and applications, proof for theorems not preferred)

BOOK(S) FOR REFERENCE:

SOFTWARE LAB – II (COBOL)
1. Simple problems with arithmetic operators
2. Simple problems using control structures
3. Table handling (one and two dimensional)
4. Payroll Processing using sequential files.
5. Telephone bill/Electricity bill preparation using sequential files.
7. Bank transaction using random files
8. Sorting and Merging of files.
ALLIED MATHEMATICS - II

UNIT - I
Integration - Integrals of functions containing linear functions of x - Integrals of functions involving $a^2 + x^2$ - integrals of Rational algebraic functions - Integration of irrational functions.

Book 1: Chap. I sec 6.1, 6.2, 7 (Omit 7.4), 8 case (i) to (iv) only

UNIT – II
Properties of definite integrals - Simple applications - Integration by parts - Bernoulli's formula.

Book 1: Chap. I Sec. 11, 12, 15
Page no: 61-72, 93, 94.

UNIT – III
Differential equations of first order - Variable separable - Homogeneous equations - Nonhomogeneous equations - Linear equation - Bernoulli's equation.

Book 1: Chap 4: Sec 1-5
Page no: 205-218.

UNIT – IV
Second order Linear equations with constant co-efficients - Particular integrals for $e^{kx}$, sin kx, cos kx, $x^n$ and $e^{kx} x$.

Book 2: Chap 3: Sec 1-4, Page no: 42-60.

UNIT – V
Laplace transform - Definition - Some general theorems - Inverse Transform.

Book 1: Chap 7: 7.1, 7.2, 7.3, 7.4, 7.5
Page no: 289-308.

Text Book:
பாதுகாtparam - III

பிரிவங்கள்
1. பொதுதனியில் கப்பல் வருவத்திலான பொருள் வழியில் கச்சை, பறவைனல் வழியில் பொருள் வழியில் பொருள் வழியில் கச்சை முழுநைன்று நேர்த்தொடர் வழியில்
2. பொது கால் திட்டம் செய்ய வேண்டும் சரக்கு நேர்த்தொடர் நேர்த்தொடர்
3. பொது கால் நேர்த்தொடர் நேர்த்தொடர்
4. அம்மன் வழியில் அம்மன் வழியில் பொருள் வழியில்
5. பொருள் வழியில் கச்சை முழுநைன்று நேர்த்தொடர் நேர்த்தொடர்

பண்டைய
1. பொதுதனியில் கப்பல் வருவத்தில் கச்சை முழுநைன்று நேர்த்தொடர்
2. பொதுதனியில் கப்பல் வருவத்தில் கச்சை முழுநைன்று நேர்த்தொடர்
3. பொதுதனியில் கச்சை முழுநைன்று நேர்த்தொடர்

முறைமை
1. பொதுதனியில் கப்பல் வருவத்தில் கச்சை முழுநைன்று நேர்த்தொடர்
2. பொதுதனியில் கப்பல் வருவத்தில் கச்சை முழுநைன்று நேர்த்தொடர்
3. பொதுதனியில் கச்சை முழுநைன்று நேர்த்தொடர்

முறைமை

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B.Sc. Computer Science

முறைமை

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</table>
GENERAL ENGLISH - III

Objectives:
1. To enable the students to complete the pre-reading task to comprehend the local and global issues in the lessons.
2. To enable the students to complete the post-reading task centering on Grammar and Skill Development
3. To empower the students with globally employable skills.

UNIT-I 12 Hrs
Larry Collins & Dominque Lapierre
Freedom at Midnight (Extract)
Alfred Uhry
Driving Miss Daisy
Extensive Reading—Robinson Crusoe (Chapters 1-3)

UNIT-II 12 Hrs
Alfred Lord Tennyson
Ulysses
Nathanial Branden
Our Urgent Need for Self-esteem
Extensive Reading—Robinson Crusoe (Chapters 4-6)
Essential English Grammar—67-72.
Reader’s Mail :The Hindu

UNIT-III 11 Hrs
Daniel Goleman
Emotional Intelligence
Marcel Junod
The First Atom Bomb.
Extensive Reading—Robinson Crusoe (Chapters 7-9)
Essential English Grammar—73-78.
Job Application.

UNIT-IV 20 Hrs
E.K.Federov
Climate Change and Human Strategy.
Paolo Mauro
Corruption: Cases, Consequences and Agenda for further Research.
Extensive Reading—Robinson Crusoe (Chapters 10-12)
Essential English Grammar—79-84.
Minutes Writing.

UNIT-V 15 Hrs
Anne Frank
The Diary of Young Girl
A.P.J.Abdul Kalam
Wings of Fire
Extensive Reading—Robinson Crusoe (Chapters 13-15)
Resume Writing.

Text Books
PROGRAMMING IN C++

Objective:
To introduce the concepts of object oriented programming and to impart the programming skills in C++.

Unit-I (15 Hrs.)
Object Oriented Programming - Advantages of OOP - Characteristics of OO languages - C++ programming basics - Functions: Simple Functions - Call by value - Call by reference - Returning values of different type - Function overloading - inline functions - Default arguments - Recursive functions.

Unit-II (15 Hrs.)
Class - Objects - Constructors - Destructors - Objects as function arguments - Returning objects from functions - Structures and Classes - Static data - Static function - Array of objects.

Unit-III (15 Hrs.)
Access specifiers - Friend function - Friend class - Operator overloading - Type casting - Pointers - Template.

Unit-IV (15 Hrs.)
Inheritance - Derived class constructors - Class hierarchies - Types of inheritance - Virtual base class - Function overriding - Virtual functions - Pure virtual functions - Abstract class.

Unit-V (15 Hrs.)
Files and Streams: I/O manipulators - Streams - String I/O - Character I/O - Object I/O - I/O with multiple objects - File pointers - Disk I/O with member functions.

BOOK FOR STUDY:

BOOK(S) FOR REFERENCE:

SOFTWARE LAB - III (C++)
1. Functions using i) Call by value ii) Call by reference iii) Recursive call iv) Returning different data types.
2. In-line function, Overloaded function and Default arguments.
3. Operator overloading (Unary and Binary).
4. Class and All types of Constructors.
5. Static function and Array of objects with static data.
6. Friend function and Friend class.
7. i) Simple and Multilevel inheritance ii) Implementing derived class constructors.
9. Virtual functions, pure virtual functions and Abstract class.
10. Dynamic polymorphism.
11. Function Template and Class Template.
12. I/O Streams with text file and data file.
ALLIED: APPLIED PHYSICS - I

Objectives:

- To acquire knowledge of current electricity and Potentiometer.
- To understand the basic principle of electromagnetism and magnetic materials and circuits.
- To study the basic principles of Laser and optical fibers and their applications.
- To learn about alternating current generation and distribution and a principle of a Transformer.

UNIT – I: Electricity and Capacitor

Electric current and its units – Definition of important parameters-Ohm’s law and its verification-Effect of temperature on resistance-Electric power and electric energy and their units-Principle of capacitor-capacity of parallel plate capacitor-Energy of charged capacitor-Potentiometer-Principle-calibration of ammeter and voltmeter.

UNIT – II: Electromagnetism


UNIT – III: Magnetic Properties of Materials And Magnetic Circuit


UNIT – IV: Laser and Optical Fibre


UNIT – V: Alternating Current and Transformer


BOOK FOR STUDY:


BOOKS FOR REFERENCE:

ALLIED- I : PRINCIPLES OF ELECTRONICS

Objectives:
• To acquire the basics knowledge of principles of Electronics

UNIT – I : SEMICONDUCTOR DIODES AND RECTIFIERS

Rectifiers - Half Wave Rectifiers - Full Wave Rectifiers - Full Wave Bridge Rectifiers.

UNIT – II : TRANSISTORS AND AMPLIFIERS

Bipolar Junction Transistor - Transistor Biasing - Configurations : CB, CE, CC - Transistor Static Characteristics : CB, CE and CC.

UNIT – III : OSCILLATORS


UNIT – IV : OPERATIONAL AMPLIFIER


UNIT – V : 555

555 Timer - Pin Configuration - Functional Block Diagram of Timer - Monostable Multivibrator - Applications - Astable Multivibrator - Applications

BOOKS FOR STUDY
1. Thereja, B.L., "Basic Electronics Solid State", S. Chand and Company Ltd., New Delhi, 2010

BOOKS FOR REFERENCE:

UNIT BOOK SECTIONS

<table>
<thead>
<tr>
<th>UNIT</th>
<th>BOOK</th>
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</table>
B.Sc. Computer Science

மாணவக்கட்டை

1. குறைவானது, ஓலி. உறுப்பினர் தொகுதிகள், துறைப்பாராட்டுதலுக்கு (புதிய),
   எண்ம அல்லது கலந்து பிற்பகுதிப் பாதுகாப்பு-2. (முனை - 3 விதை
   கோடு - 4 புதியசதுரம்)
2. வழியாட்டு பாடல் - விளக்க துறைப்பாராட்டு - முடிவுப்படுத்து, ஆம்மா
   நிறைவிட்டு, வருணகிவிளக்காட்சி எகவேல், குறுவியல் - 613 006.

பெருநிலையான பாகம்

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Syllabus : 2011
Sem: IV
Code: 11UGE420104
Hours :5
Credits: 3

GENERAL ENGLISH -IV

Objectives:
1. To enable the students to complete the pre-reading task to comprehend the local and global issues in the lessons.
2. To enable the students to complete the post-reading task centering on Skill Development and Grammar.
3. To empower the students with globally employable soft skills.

UNIT-I 12 Hrs
Life Stories
F.G.Herod
Mother Teresa
R.K.Narayan
Swami and Friends

Extensive Reading
Treasure Island (1-4)

Essential English Grammar
91—95.

Film Review (The Hindu).

UNIT –II 12 Hrs
Imogen Grosberg
See Off the Shine
George Orwell
The Porting Spirit

Extensive Reading
Treasure Island (5-8)

Essential English Grammar
96-100.

Article Writing on Current Issues.

UNIT-III 11 Hrs
Philip Agre
Building an Internet Culture
Satyajit Ray
Odds Against Us

Extensive Reading
Treasure Island (9-12)

Essential English Grammar
101-105.

UNIT-IV 20Hrs
Jerzy Kosinski
TV as Babysitter.
E.F.Scumacher
Technology With Human Face.

Extensive Reading
Treasure Island (13-17)

Essential English Grammar
106-110.

Mock Group Dynamics

UNIT-V 15 Hrs
Aluizio Borem, Fabrico
R.Santos & David E.Bower
Advent of Biology
Mark Ratner & Daniel Ratner
Nanotechnology

Extensive Reading
Treasure Island (18-22)

Essential English Grammar
111-114.

Presentation Skills

Text Books
Objective:
To give a fundamental knowledge on data structures and exposure to development of algorithms related to data structures.

Unit - I (12 Hrs.)

Unit - II (12 Hrs.)

Unit - III (12 Hrs.)

Unit - IV (12 Hrs.)

Unit - V (12 Hrs.)

BOOK(S) FOR STUDY:

SOFTWARE LAB - IV
(DATA STRUCTURES USING C AND C++)

C++ PRACTICALS
1. Create a class Array
2. Create a class Stack
3. Convert Infix to Postfix and evaluate Postfix using Stack class
4. Create classes Queue and Circular Queue

C PRACTICALS
5. Operations on Singly linked list
6. Operations on Doubly linked list
7. Binary Tree Creation and Traversals
8. Analyze Bubble Sort with number of passes, comparisons and data moves
9. Sequential and Binary Search
10. Merge two sorted data files.
ALLIED: APPLIED PHYSICS - II

Objectives:
• To understand the different switches and display devices supporting devices of a computer.
• To acquire knowledge of semiconductor diodes and transistors, op-amp and its applications.
• To understand the knowledge of different types of communication.

UNIT – I : Switches and Devices
Microphones – Digital displays – Loud speakers – Head phones and ear pieces – Cathode Ray Oscilloscope (CRO) – Pick-ups – Heat and Light Sensors – Relays and switches

UNIT- II : Semiconductor Diodes and Transistors
Semiconductors – P-type and N-type semiconductors – Junction diode – Junction Diode characteristic – Semiconducting diode as a rectifier – Other diodes – Transistor characteristics – Transistor as a switch – Transistor as a current amplifier.

UNIT – III : Power Supplies, Safety and Instruments

UNIT – IV : Analog and Digital Electronics

UNIT – V : Communication Systems
Audio systems – Sound recording – Complete Hi-fi system – Radio and Television- Radio waves, Radio system – Colour Television – Cable and Satellite TV – Telephone system, Simple Telephone circuits – Telephone exchange

BOOK FOR STUDY:

<table>
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<tr>
<th>UNIT</th>
<th>BOOK</th>
<th>CHAPTER</th>
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BOOK FOR REFERENCE:
ALLIED - II: COMMUNICATION ELECTRONICS

Objectives:
- To acquire knowledge about analog and digital modulation and demodulation technique
- To understand the concepts and techniques involved in mobile communication

UNIT – I: SINGLE SIDEBAND AND COMMUNICATIONS SYSTEMS
Introduction - Definitions - Theory of amplitude modulation and modulation index - sidebands produced in amplitude modulation - Power distribution on an AM Waves - Methods of amplitude modulation - Phase modulation - Introduction - Definition - Express for FM wave - sideband terms produced in frequency modulation - Phase modulation - Frequency Modulation method - Comparative advantages, disadvantages and merits of FM, PM and AM.

UNIT – II: RADIO RECEIVERS

UNIT – III: DIGITAL AND DATA COMMUNICATION
Introduction - Types of analog pulse modulation - Generation and demodulation of PAM waves - pulse duration (width) modulation (PWM) - Pulse Position Modulation (PPM) - Generation and demodulation of PPM - Pulse Code Modulation (PCM) - Generation and demodulation of PCM - Multiplex Transmission - Frequency Division Multiplexing - Time Division Multiplexing.

UNIT – IV: CELLULAR TELEPHONE COMMUNICATIONS & TRANSMISSION
History of wireless communication - A simplified reference model - Frequencies for radio transmission - multiplexing - frequency division multiplexing - time division multiplexing - code division multiplexing - modulation - amplitude shift keying - frequency shift keying - phase shift keying - advanced frequency shift keying - advanced phase shift keying - multi carrier modulation.

UNIT – V: CELLULAR TELEPHONE COMMUNICATION SYSTEM

BOOKS FOR STUDY:

UNIT BOOK SECTIONS
I  1  3.1 - 3.6, 4.1 - 4.7
II  1  7.1, 7.2, 7.5, 7.10, 7.11, 7.13-7.15
III  1  12.1 - 12.3, 12.5 - 12.12
IV  2  1.2, 1.3, 2.1, 2.5, 2.6
V  2  4.1, 4.1.1 - 4.1.8
SEMESTER – III & IV
11UPH430405A
CREDITS : 2

ALLIED: PHYSICS PRACTICAL

Any 16 Experiments

1. Resistance of a Thermistor - Multimeter
2. EMF of a Thermocouple – Multimeter
3. Temperature Co-efficient of Thermistor
4. Potentiometer – Calibration of Ammeter
5. Potentiometer – Calibration of Voltmeter
6. Field along the axis of a coil
7. Junction Diode – V-I characteristics
8. Zener Diode – V-I Characteristics
9. Bridge Rectifier - π filter circuit
10. Regulated Power supply Using Zener Diode
11. Transistor Characteristics – CE Mode
12. FET Characteristics – CG Mode
13. Ballistic Galvanometer – Figure of Merit
14. Single Stage R-C coupled amplifier – Frequency Response
15. Operational- Amplifier – adder, subtractor, comparator,
16. Basic Logic Gates – Using IC’s
17. Logic gates using IC’s to solve Boolean expressions.
18. Logic Gates Using IC’s - The study of universal gates & Demorgan’s Theorem
19. Encoders using Diodes
20. Encoders using OR gates.
22. R-S, J-K, D,T Flip-flops using Logic gates IC’s

SEMESTER – III & IV
11UPH430405B
CREDITS : 2

ALLIED: ELECTRONICS PRACTICAL

1. Study of Diode Characteristics
2. Study of Zener Diode Characteristics
3. Study and construction of Half Wave Rectifier with & without filter
4. Study of Transistor Characteristics - CB Configuration
5. Study of Transistor Characteristics - CE Configuration
6. Study of Transistor Characteristics - CC Configuration
7. Study of Photo Electronic Devices (LED and Photodiode)
8. Construction and Study of Hartley Oscillator - Transistor
9. Construction and Study of Phase Shift Oscillator - Transistor
10. Construction and Study of Colpitts Oscillator - Transistor
11. Study of Basic Operations of Operational Amplifier
12. Study of Operational Operational Amplifier Applications
13. Study and Construction of Astable & Monostable MVT using 555
14. Study of PAM, PPM and PWM
15. Study of Transmission Line Characteristics
ELECTIVE – I : SYSTEMS ANALYSIS AND DESIGN

Objective:
To give basic concepts of System, System Analysis, Design and Implementation

UNIT I (12 Hrs.)

UNIT II (12 Hrs.)

UNIT III (12 Hrs.)

UNIT IV (12 Hrs.)

UNIT V (12 Hrs.)

BOOK FOR STUDY:

BOOK(S) FOR REFERENCE:
ELECTIVE – I
UNIFIED MODELING LANGUAGES

Objective:
To specify, visualize, construct and document the artifacts of a software systems

UNIT - I  (12 Hrs.)

UNIT - II  (12 Hrs.)

UNIT - III  (12 Hrs.)

UNIT - IV  (12 Hrs.)

UNIT - V  (12 Hrs.)

BOOK FOR STUDY:

BOOK FOR REFERENCE
SOFT SKILLS

Objective:
- Imparting effective communication skills (Spoken and Written)
- Developing effective presentation skills
- Becoming a self confident person through a mastery of interpersonal skills, team management skills and leadership skills
- Developing a broad career plan matching the job requirements
- Achieving a mature outlook and becoming industry ready

UNIT - I

UNIT - II
Writing Skills : Effective Writing techniques – Writing good essays, assignments and articles – Letter writing – Good E-mail writing – Effective resume writing – Tips for better Bio-data writing.

UNIT - III

UNIT - IV
Listening Skills : Types of Listening – Roadblocks to listening – Improving listening Skills – Listening to feelings – Preparing for job interview – Listening in interviews – Bargaining in interview.

UNIT - V
Learning Skills : Learning styles – Learning methods: SQ4R, Soprano, Cornull, Memetic study techniques – Concentration techniques –

BOOK(S) FOR STUDY
Semester: V
11UCS530212

PROGRAMMING IN JAVA

Objective:
To impart sound knowledge and programming skills in JAVA.

Unit - I (15 Hrs.)

Unit - II (15 Hrs.)

Unit - III (15 Hrs.)

Unit - IV (15 Hrs.)

Unit V (15 Hrs.)

BOOK(S) FOR STUDY:

BOOK FOR REFERENCE:
Semester: V
11UCS530213

DATABASE SYSTEMS

Objective:
To understand the basic concepts and organization of a database and to impart basic knowledge on relational database.

UNIT - I (15 Hrs.)

UNIT - II (15 Hrs.)

UNIT - III (15 Hrs.)
Normalization: Introduction - Normalization – Definition of Functional Dependence (FD) – Normal Forms: 1NF, 2NF, 3NF and BCNF.

UNIT - IV (15 Hrs.)
Structured Query Language: Features of SQL – Select SQL Operations – Grouping the Output of the Query – Querying from Multiple Tables – Retrieval Using Set operators – Nested Queries. T-SQL – Triggers and Dynamic Execution: Transact-SQL.

UNIT - V (15 Hrs.)

BOOK FOR STUDY:

BOOK FOR REFERENCE:
MICROCOMPUTER ARCHITECTURE

Objective:
To impart knowledge on architectures and assembly language Programming concepts of 8-bit & 16-bit Processors.

Unit – I (15 Hrs.)

Unit – II (15 Hrs.)
Programming: Simple examples - 8-bit addition and subtraction - 16-bit addition - 8-bit decimal subtraction - complements of 8-bit and 16-bit number - shifting bits - masking bits - finding square - finding largest of two numbers - finding largest and smallest in an array - ordering data array - sum of series of numbers - 8-bit multiplication and division – multibyte addition and subtraction.

Unit – III (15 Hrs.)

Unit – IV (15 Hrs.)
Data transfer instructions - arithmetic instructions - branch instructions - LOOP, NOP, HLT instructions - flag manipulation - shift, rotate and logical instructions Modular Programming for manipulating segment registers.

Unit – V (15 Hrs.)
BIOS and DOS services – DOS interrupts.

BOOK(S) FOR STUDY:

BOOK(S) FOR REFERENCE:
Objective:
To impart data representation techniques with XML and to study various features of XML

Unit - I (12 Hrs.)

Unit - II (12 Hrs.)

Unit - III (12 Hrs.)
Validity - Document Type Declaration - Document Type Definitions (DTDs) - DTD Syntax: Element and Attribute Declarations – Entity Declaration.

Unit - IV (12 Hrs.)

Unit - V (12 Hrs.)

BOOK(S) FOR STUDY

BOOK FOR REFERENCE:
ELECTIVE – II
SOFTWARE ENGINEERING

Objective:
To introduce the basic concepts of Software Engineering and the various phases in Software Development.

UNIT - I (12 Hrs.)

UNIT - II (12 Hrs.)

UNIT - III (12 Hrs.)

UNIT - IV (12 Hrs.)

BOOK FOR STUDY:
Unit I: Chapters 1 & 2
Unit II: Chapters 3 & 4
Unit III: Chapters 5, 6, 7 & 9
Unit IV: Chapters 10, 11
Unit V: Chapters 12, 13 & 14

BOOK FOR REFERENCE:
SOFTWARE LAB - V (JAVA)

1. Create classes for entities
2. Arrays and Vector classes
3. Inheritance and Method overriding
4. Interfaces
5. Packages
6. Multithread programming
7. I/O Streams
8. Applets and Swing
9. JDBC
10. Network (TCP/IP and UDP)
11. Simple Servlet

SOFTWARE LAB – VI (RDBMS)

SQL
1. Table Creation, data Insertion, Deletion, Updation and Selection.
2. DML: Operators (Arithmetic, Relational, Logical), SQL Functions (Single Row Function, Group Functions).
3. DML: Set operations, Join operations
4. Nested queries
5. Creation of Synonym, Sequence & Index, Creation and manipulation of View.

PL/SQL
6. PL/SQL - block
7. Cursors
8. Functions & Procedure
9. Packages
10. Triggers
SKILL BASED ELECTIVE
OFFICE AUTOMATION

Objective:
To understand the need of Office Automation, Word, Excel and PowerPoint.

UNIT - I (10 Hrs.)

UNIT - II (10 Hrs.)
MS Excel: Introduction to Excel - Using Commands and Functions - Inserting and Deleting Rows and Columns - Formatting a Worksheet - Printing the Worksheet - Creating Charts.

UNIT - III (10 Hrs.)

BOOK FOR STUDY:

BOOK FOR REFERENCE:
COMPUTER NETWORKS

Objective:
To give the concepts of network model and the applications of various layers in the network model.

Unit – I (15 Hrs.)

Unit-II (15 Hrs.)

Unit-III (15 Hrs.)

Unit – IV (15 Hrs.)

Unit – V (15 Hrs.)

BOOK FOR STUDY:
Unit-I: Chapters 1,2,3 & 7
Unit –II : Chapters 10,11,12,13 &14
Unit- III : Chapters 15, 18 &19
Unit-IV: Chapters 21, 22,23
Unit – V : Chapters 24, 26,27

BOOK(S) FOR REFERENCE:
Syllabus : 2011
Semester : VI
11UCS630218
Hours/week : 5
Credits : 4

OPERATING SYSTEMS

Objective:
To gain the basic knowledge about the operating systems and its various schemes and services

UNIT I (15 Hrs.)
Operating system Overview – Basic concepts and terminologies operating system resource manager – process view point – Hierarchical and extended machine view – I/O programming and interrupt programming – I/O programming – Interrupt structure and processing.

UNIT II (15 Hrs.)

UNIT III (15 Hrs.)

UNIT IV (15 Hrs.)

UNIT V (15 Hrs.)
Information Management: File system model – Symbolic , basic file system – Access Control verification – Logical, Physical file system – Allocation strategy, Device Strategy Modules.

BOOKS FOR STUDY:

BOOK(S) FOR REFERENCE:
OPERATIONS RESEARCH

Objective:
To give an overall idea about the various Optimization techniques and their usages.

UNIT-I (15 Hrs.)

UNIT-II (15 Hrs.)

UNIT-III (15 Hrs.)

UNIT-IV (15 Hrs.)
Project Scheduling by PERT-CPM – Network diagram representations – Critical path calculations – Probability considerations in Project Scheduling – Cost consideration.

UNIT-V (15 Hrs.)
Inventory Management: Inventory Control – ABC analysis – Economic Lost size problems – EOQ with uniform demand and shortages – Limitations of Inventories – Buffer stock – Determination of Buffer stocks.

(Note: Stress may be on the working of numerical problems)
ELECTIVE - III
COMPUTER GRAPHICS

Objective:
To impart the basic principles of generating primitives, shapes, package development, interactive graphics, raster graphics, two and three dimensional graphics and their transformations.

Unit - I (12 Hrs.)

Unit - II (12 Hrs.)

Unit - III (12 Hrs.)

Unit - IV (12 Hrs.)

Unit - V (12 Hrs.)

BOOK(S) FOR STUDY:

BOOK(S) FOR REFERENCE:
ELECTIVE – III WEB GRAPHICS

Objective:
To offer the knowledge of creating and working with digital images and to produce a presentation package using multimedia tools.

Unit I (12 Hrs.)

Unit II (12 Hrs.)

Unit III (12 Hrs.)

Unit IV (12 Hrs.)
Illustrator: interface – working with shapes – layers – blend, path and mask.

Unit V (12 Hrs.)
Director: work space – animation and effects – sound and video.

BOOK FOR STUDY:

BOOK FOR REFERENCE:
HARDWARE LAB (ELECTRONICS)

Non-Clocked Experiments:
1. Encoders and Decoders
2. Multiplexers and De-Multiplexers
3. ALU

Clocked Experiments:
4. Memory Devices
5. Flip-Flops and Counters
6. Shift Registers

Arithmetic Experiments:
7. Adders and Subtractors
8. 4-bit Adder and BCD adder

FUNDAMENTALS OF COMPUTER NETWORKS

Objective:
To give the concepts of network model and the applications of various layers in the network model.

Unit-I (10 Hrs.)

Unit-II (10 Hrs.)
Network Standards and OSI - Need for network standard - OSI reference model - Physical layer - Data link layer - Network layer - Transport layer - Session layer - Application layer.

Unit-III (10 Hrs.)

BOOK FOR STUDY:

BOOK(S) FOR REFERENCE:
Objective:
To give the concepts of E-Commerce & Internet and their applications of Business.

Unit-I (10 Hrs.)
Electronic Commerce - Electronic data interchange - Benefits of EDI - E-commerce over the Internet - Internet commerce - Examples - Commercenet - Electronic communication - PCs and networking: Networking - Network topology - Communication Media - VSAT.

Unit-II (10 Hrs.)
The Internet: Introduction - Communication protocols - Services and resources - Mail - Internet search - Browsers.

Unit-III (10 Hrs.)
Getting connected to internet - Setting up a web site - Web servers - Business to business E-commerce Payments for goods and services - Bottlenecks.

BOOK FOR STUDY:
Unit I : Ch 1 - 2
Unit II : Ch 5 - 6
Unit III: Ch 17

BOOK FOR REFERENCE:
SKILL BASED ELECTIVES

BOTANY
11UBO540601 Mushroom Culture
11UBO640602 Herbal Technology

BUSINESS ADMINISTRATION
11UBU540601 Personality Development
11UBU640602 Managerial Skills

CHEMISTRY
11UCH540601 Food and Nutrition
11UCH640602 Everyday Chemistry

COMMERCE
11UCO540601A Accounting for Executives
11UCO540601B Soft Skills for Managers
11UCO640602A Total Quality Management
11UCO640602B Fundamentals of Accounting Packages

COMMERCE (CA)
11UCC540601 Soft Skills
11UCC640602 Basics of Accounting

COMPUTER APPLICATIONS (Dept of IT)
11UBC540601A Fundamentals of IT
11UBC540601B Internet Concepts
11UBC640602A Visual Programming
11UBC640602B Flash

COMPUTER SCIENCE
11UCS540601A Office Automation
11UCS540601B Internet Concepts
11UCS640602A Fundamentals of Computer Networks
11UCS640602B E-Commerce

ECONOMICS
11UEC540601 Security Analysis
11UEC640602 Economics of Insurance

ELECTRONICS
11UEL540601 DVD Troubleshooting and Assembling
11UEL640602 PC Assembling

ENGLISH LITERATURE
11UEN540601 Business English Writing
11UEN640602 Media Skills

HISTORY
11UHS540601 Indian History for Competitive Exams
11UHS640602 Tourism and Travel Management

MATHEMATICS
11UMA540601 Mathematics for Competitive Exams
11UMA640602 MATLAB

PHYSICS
11UPH540601 Cell Phone Servicing
11UPH640602A Electrical Wiring
11UPH640602B Videography

STATISTICS
11UST540601 Data Analysis for Competitive Exams
11UST640602 Statistics for Management

TAMIL
11UTA540601 Tamil
11UTA640602 Tamil