15LAU101


dுற்புறம் தொடர்

Semester-I

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அது - I: கிருப்பம் கிளைப்பிள்

குறுக்கை: மலர் பருப்பு, - பாலமுழுக்கு குறுக்கை.

குறுக்கை: ஞானசுருக்கி - குறிச் செய்வு

பொதுவு: பாலமுழுக்கு பருப்பு - குறிச் செய்வு - குறுக்கை.

குறுக்கை: கல்லோரா வருடக் குறுக்கை - குறுக்கை.

பொதுவு: கல்லோரா குறுக்கை - பாலமுழுக்கு குறுக்கை - குறுக்கை.

குறுக்கை: கல்லோரா வருடக் குறுக்கை - குறுக்கை.

குறுக்கை: கல்லோரா குறுக்கை - பாலமுழுக்கு குறுக்கை.

குறுக்கை: கல்லோரா வருடக் குறுக்கை - குறுக்கை.

குறுக்கை: கல்லோரா குறுக்கை - பாலமுழுக்கு குறுக்கை.

அது - II: கிருப்பம் கிளைப்பிள்

1. குறுக்கை - குறுக்கைகளிடம் குறுக்கை 20

2. பொதுவுக்கு குறுக்கை - குறுக்கைகளிடம் குறுக்கை

3. குறுக்கை - குறுக்கைகளிடம் குறுக்கை

அது - III: கிருப்பம்

1. குறுக்கை - குறுக்கைகளிடம்

2. குறுக்கை - குறுக்கைகளிடம்

3. குறுக்கை - குறுக்கைகளிடம்

அது - IV: கிருப்பம்

1. குறுக்கை - குறுக்கை

2. குறுக்கை - குறுக்கை

3. குறுக்கை - குறுக்கை

4. குறுக்கை - குறுக்கை

5. குறுக்கை - குறுக்கை

அது - V: கிருப்பம்

1. குறுக்கை - குறுக்கை

2. குறுக்கை - குறுக்கை

B.Sc, Electronics and Communication Systems, 2015, Karpagam Academy of Higher Education, Coimbatore -21,
OBJECTIVES
- To enable the learners to acquire English language skills at a faster pace.
- To train the learners to reflect on the literary works and communicate flexibly.

UNIT I:
- **Prose:** Google Guys (Extract) – Richard L Brandt
- **Poetry:** The Blind Pedlar – Osbert Sitwell
- **Short Story:** A Garden So Rich – Christie Craig
- **Vocabulary:** Prefixes, Antonyms, Sentence Completion
- **Grammar:** Articles, Adverbs, Pronouns
- **Composition:** Proverb Expansion

UNIT II:
- **Prose:** Happiness 101 – Geeta Padmanabhan
- **Poetry:** An Old Woman – Arun Kolatkar
- **Vocabulary:** Suffixes, Analogies
- **Grammar:** Nouns, Adjectives
- **Composition:** Dialogue Writing

UNIT III:
- **Prose:** Structured Procrastination – John Perry
- **Short Story:** The Umbrella Man – Roald Dahl
- **One-Act Play:** The Boy Who Stopped Smiling – Ramu Ramanathan
- **Vocabulary:** Synonyms, Euphemisms, Word Definitions
- **Grammar:** Verbs, Conjunctions and Interjection, Indirect/Reported Speech

UNIT IV:
- **Poetry:** No Sentence – Anjum Hassan
- **One-Act Play:** While the Auto Waits- O’ Henry
- **Vocabulary:** Words Often Confused, Anagrams
- **Grammar:** Prepositions, Voice- Active and Passive
- **Composition:** Letter Writing- Informal

UNIT V:
- **Short Story:** The Bird – Amar Jalil
- **One-Act Play:** The Cellphone Epidemic – Claudia I. Haas
- **Vocabulary:** Portmanteau Words, One Word Substitute
- **Grammar:** Questions, Pronunciation
- **Composition:** Letter Writing- Formal

PRESCRIBED TEXT

REFERENCES
SCOPE

Electronics is the branch of science and technology that deals with electrical devices and circuits involving active electrical components such as vacuum tubes, transistors, diodes and integrated circuits. Electronics is distinct from electrical and electro-mechanical science and technology, which deals with the generation, distribution, switching, storage and conversion of electrical energy to and from other energy forms using wires, motors, generators, batteries, switches, relays, transformers, resistors and other passive components. This paper gives the basic theory of construction and operations of Electronic Devices and circuits.

OBJECTIVES

- To know the Passive and Active devices in the field of Electronics.
- To learn the basic operations of Electronic devices and circuits.

UNIT I - Passive Circuit Components


UNIT II - Network Theorems


UNIT III - Semiconductor Devices and Special Diodes


UNIT IV - Wave Shaping and Switching Circuits

UNIT V- Amplifiers and Oscillators


TEXT BOOKS

REFERENCES
SCOPE

On successful completion of this course the learner gain a clear knowledge about various aspects of Complex Numbers, Vectors, Matrices etc and the techniques of numerical Methods which are very useful in solving the problems arise regarding designs in the field of Electronics.

OBJECTIVE

To enable the students to learn and gain knowledge about Conversion of rectangular form into polar form, concepts of vector and scalar fields, properties of matrices, Differential Equations and numerical Methods.

UNIT I

Complex Numbers: Definition of complex number – Argand Diagram – rectangular form-polar form-Conversion of rectangular form into polar form and vice versa-Addition, subtraction, Multiplication and Division by using polar and Rectangular forms-Applications of Demoivre’s theorem – Cos nθ , Sin nθ, tan nθ- Expansions of cos nθ, sin nθ – Expressions of Sinθ, Cosθ, Tanθ in powers of θ (simple problems only)

UNIT II


UNIT III


UNIT IV

Differential Equations: Types of Linear Linear differential equations with constant coefficients – Simultaneous differential equations with constant coefficient.

UNIT V


TEXT BOOKS

REFERENCES
1. Study of CRO and Colour coding of Resistors.
2. Verification of Ohms law
3. Verification of Kirchhoff's Law
4. Verification of Thevenin's Theorem
5. Verification of Superposition Theorem
6. Verification of Maximum Power Transfer Theorem
7. VI Characteristics of Junction diode
8. VI Characteristics of Zener diode
9. Clipping and Clamping circuits
10. Half wave rectifier and Full wave rectifier.
11. Zener diode as Voltage regulator
12. RC coupled Amplifier
13. Phase shift Oscillator
14. Transistor characteristics of CE
15. Transistor characteristics of CB

(Any 12 Experiments)
Instruction Hours/week: L: 2 T: 0 P: 0   Marks: Internal: 100 External: Nil  Total: 100

SCOPE

The students fit for the future time and to develop a sense of competitive spirit, co-operation, leadership, diligence, punctuality, and team-spirit as well as to provide a backdrop for the development of their creative talents

OBJECTIVES

To improve the integral development of human begins
To train the students towards sustainable lifestyle
To create awareness about the values and their significance and role
To imbibe the concept of discipline and freedom

UNIT – I

Concept of Self, self-esteem and self-confidence. Concept of personality, determinants and disorganisation of it. Personality development – meaning.

UNIT – II

Goal setting – meaning and importance; steps in goal setting Manners and Etiquette – meaning need and importance; means to improve. Positive thinking.

UNIT – III

Discipline – meaning. Concept of Roles and Responsibility Time Management – Meaning and steps for effective time management.

UNIT – IV

Interpersonal relationship – meaning and importance; means to improve it. Healthy friendship.

UNIT – V

Family Relationship importance of it; Means to improve. Spirituality – meaning. Its relationship with Altruism, sacrifice, self control, tolerance and truthfulness.

TEXT BOOKS

Instruction Hours / week: L: 2 T: 0 P: 0     Marks: Internal: 100 External: Nil Total: 100

SCOPE

To achieve the analytical and reasoning competencies and to improve their communication and presentation skills

OBJECTIVES

➢ To impact knowledge on both Aptitude and Soft skills to the students
➢ To critically evaluate and demonstrate various principles involved in solving mathematical problems and to adopt new and faster methods of calculations.
➢ Reinforcing competencies in soft skills which are crucial in a social setting

UNIT - I
Introduction to Quantitative Aptitude, Speed Maths, Problems on Numbers, Averages, Ratios and Proportions, Problems on Ages

UNIT - II
Number Series, Blood Relation, Image Analysis, Direction Sense, Syllogism, Coding and Decoding

UNIT – III
Percentages, Data Interpretation, Profit and Loss, Simple Interest and Compound Interest

UNIT – IV
Parts of Speech, Tense, Subject Verb Agreement, Active and Passive Voice, Articles, Prepositions

UNIT - V
Conditional Clause, Degrees of Comparison, Goal Setting, Interpersonal Skills
15LAU201  


dு. சிற்கித்த தொழிலில்
1. வேதன - ஏண்டில் சேர்வவாகும் குன்றாகியம்பால் 15 பால்கள்
2. வேதனம் - அன்பனார் தரிக்கின்றார் குட்டுக்கலணமல்டிக்கு 11 பால்கள்

உள்ள போட்டி

அ). அணுக்கற்காட

துறைமுறை: 1. மண்டல பிள்ளை, கிளாப்பான மண்டல, முதலிய வெளிக்காய் பயிற்சிக்காக்கழ
2. மண்டல பிள்ளை, கிளாப்பான மண்டல, முதலிய வெளிக்காய் பயிற் சுற்றுலாக்கழ

துறைமுறை: 1. மண்டல பிள்ளை, கிளாப்பான மண்டல, முதலிய வெளிக்காய் பயிற் சுற்றுலாக்கழ
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முழுவதும்: 1. மண்டல பிள்ளை, கிளாப்பான மண்டல, முதலிய வெளிக்காய் பயிற்சிக்கழ
2. மண்டல பிள்ளை, கிளாப்பான மண்டல, முதலிய வெளிக்காய் பயிற் சுற்றுலாக்கழ

புதுக்கும் கால்கள் - தன்மையாக்கார், முதலிய வெளிக்காய் பயிற்சிக்கழ

பிற்பருக்கர் - ஐருந்து வெளியில் பிள்ளை பயிற்சியான, முதலிய வெளியில் பயிற்சிக்கழ

சிற்கித்தரம் - ஐருந்து பிள்ளை பயிற்சியான, முதலிய வெளியில் பயிற்சிக்கழ

அருங்காடகம் - 1. தீர்க்க வழக்கு, கிளாப்பான - வழக்கு, முதலிய வெளியில்
2. பிற்பருக்கர் ஐருந்து வெளியில், முதலிய வெளியில் பயிற்சிக்கழ.


1. கொள்ளும் நேர்ம் தரவு, தொடர் - பரையலம்,

2. செய்றும் விளக்கம் வெளிப்படுத்தும் புரட்சி - குறுத்தி குறன்கை

3. பயிற்சி நடத்தும் பள்ளிக் கோட்டை - குறுத்தி குறன்கை

4. பயிற்சி நடத்தும் பள்ளிக் கோட்டை - குறுத்தி குறன்கை

5. பயிற்சி நடத்தும் பள்ளிக் கோட்டை - குறுத்தி குறன்கை

6. பயிற்சி நடத்தும் பள்ளிக் கோட்டை - குறுத்தி குறன்கை

B.Sc, Electronics and Communication Systems, 2015, Karpagam Academy of Higher Education, Coimbatore -21,
OBJECTIVES

- To train the students in acquiring proficiency in English by reading different kinds of genres in literature.
- To provide aesthetic pleasure through literature.

UNIT I:
Prose: The Unexpected - Robert Lynd
Poetry: The Village Schoolmaster – Oliver Goldsmith
Short Story: The Lion’s Share – Arnold Bennett
Vocabulary: Homonyms
Grammar: Irregular Verbs

UNIT II:
Prose: Travel by Train – J. B. Priestly
Poetry: The Gift of India – Sarojini Naidu
Grammar: Sentence patterns
Composition: Reading Comprehension

UNIT III:
Prose: Women’s Education is Almost More Important than the Education of Boys and Men – Indira Gandhi
Short Story: The Necklace – Guy De Maupassant
Vocabulary: Similes
Grammar: Discourse Markers
Composition: Report Writing

UNIT IV:
Poetry: Ozymandias – P.B. Shelley
One-Act Play: The Pot of Broth- W.B. Yeats
Vocabulary: Collective Nouns
Grammar: Correction of Sentences
Composition: Picture Reading

UNIT V:
Short Story: The Silver Butterfly– Pearl S. Buck
One-Act Play: The Bear – Anton Chekov
Vocabulary: Acronyms
Grammar: Question Tags
Composition: Drafting Advertisement

PRESCRIBED TEXT

REFERENCES
SCOPE

Digital Electronics represent signals by discrete bands of analog levels, rather than by a continuous range. All levels within a band represent the same signal state. In most cases the number of these states is two, and they are represented by two voltage bands: one near zero volts and a higher level near the supply voltage, corresponding to the "false" ("0") and "true" ("1") values of the Boolean domain respectively. This paper presents the basics of digital circuit construction and its operations.

OBJECTIVES

➢ To learn the fundamentals of different numbering system and its conversions and the basics of Boolean algebra laws and theorems.

➢ To provide a strong foundation in designing sequential and combinational circuit.

➢ To familiarize with the function of gates, flip flops, shift registers, counters and their design.

UNIT I - Number Systems & Boolean Algebra


UNIT II- Combinational Logic Design


UNIT III - Counters & Registers

RS, JK, JK Master–slave, D&T flip flops – Level Triggering and Edge Triggering – excitation tables – Asynchronous & Synchronous Counters – Modulus Counters – Shift Register – Johnson Counter- Ring Counter – State Diagram-State Table

UNIT IV-D/A, D/A Converter and Memories

Digital to Analog Converter: Resistive Divider type and Ladder type – Accuracy and Resolution - Analog to Digital Converter: Counters - Ramp type - Simultaneous Conversion – Dual slope type – Successive Approximation type – Memories and their types.

UNIT V- Logic Families and Programmable Logic Devices
Logic Families: RTL, DTL, TTL families, Schottky–Clamped TTL, Emitter Coupled (ECL), MOS Inverters, CMOS Inverters, Comparison of performance of Various Logic families. Introduction to PLD’s – PAL – PLA

TEXT BOOKS

REFERENCES
SCOPE
On successful completion of this course the learner gain a clear knowledge about the necessity, properties and applications of Fourier series, Fourier Transform, Laplace Transform and the concept of Statistics and the usage of them in their respective fields.

OBJECTIVES
To enable the students to learn and gain knowledge about finding Fourier coefficients for a given periodic function, the application of Parseval’s theorem and Laplace Transforms of various functions and various Statistical measures such as mean, median, mode etc.

UNIT I
Fourier series – Definition – Finding Fourier coefficients for a given periodic function with period $2\pi$ – Odd and Even functions – Half Range Series.

UNIT II
Definition of Fourier Transform - Properties of Fourier Transform - Inverse Fourier transform - Convolution theorem - Finite Fourier Sine & Cosine Transform – Parseval’s theorem.

UNIT III

UNIT IV

UNIT V
Probability: Concept of Probability - Addition theorem – Multiplication theorem - Binomial distribution, Poisson Distribution & Normal distribution (No derivations) and simple problems.

TEXT BOOKS

REFERENCES
1. Realization of logic gates using diodes and transistors
2. Verification of Logic Gates using IC
3. Realization of logic gates using universal gates
4. Code converters
5. Realization of Multiplexer using basic gates
6. Encoder and Decoder
7. Realization Half and Full adders
8. Realization of Subtractor
9. Realization of Parity generator
10. Flip-Flop Circuit
11. 4 bit Binary adder
12. Ring Counters
13. A/D converter
14. D/A converter
15. Comparator

(Any 12 Experiments)
SCOPE

The study creates awareness among the people to know about various renewable and nonrenewable resources of the region, enables environmentally literate citizens (by knowing the environmental acts, rights, rules, legislation, etc.) to make appropriate judgments and decisions for the protection and improvement of the earth.

OBJECTIVES

- Creating the awareness about environmental problems among people.
- Developing an attitude of concern for the environment.
- Motivating public to participate in environment protection and improvement.

UNIT - I: Eco system and natural resources: Environment – Definition – components - Ecosystem -Definition, Concept, Scope, importance, structure and functions of ecosystem. Energy flow, Ecological succession. Food chains and food webs. Classification of ecosystem. Natural resources: Forest resources; water resources

UNIT - II: Environmental pollution: Cause, effects and control measures of Air pollution, water pollution, soil pollution, marine pollution, noise pollution, thermal pollution and nuclear hazards pollution. Solid waste management.


UNIT - V: Environment ethics: Environmental Ethics - Gender equity, ethical basis of environment education and awareness, conservation ethic and traditional value systems of India. Valuing nature, cultures, social justice, Human heritage, equitable use of resources, preserving resources for future generation, common property resources, Ecology and its uses and its degradation, Introduction to Environmental Protection Act (EPA).

TEXT BOOKS

REFERENCES

OBJECTIVES

- To develop confidence to respond in English during situations where the use of English is imperative.
- To develop fluency in actual conversation in the English language.
- To develop speech skills necessary for confident and intelligent participations in Group Discussions and develop skills related to teamwork in work places.

UNIT I
Listening: Listening comprehension – Listening for Specific Information – Note Taking – Interpreting Charts and Diagrams.

UNIT II
Telephone Skills – Understanding telephone conversation – handling calls – leaving messages – making requests - giving instructions and orders
(Completing dialogues)

UNIT III
Reading: Reading – Reading with a purpose – Skimming and Scanning – locating main points – reading critically – Sequencing of sentences – Reading comprehension.

UNIT IV
Translation- Translating short sentences and passages from English to Tamil and from Tamil to English.

UNIT V
Vocabulary: Improve English vocabulary: Synonyms – Antonyms – Prefixes – Suffixes – Idioms – Collocations – Different types of English – British and American (Choose the best answer type from a database of 50 words each for each topic)
Functional Grammar: Forming questions, getting answers – Articles – Parts of Speech – Punctuation – Common mistakes in English (Homophones)(Exercise based)

REFERENCES
SCOPE

This course has the importance of core material in the field of communication. All advance technologies rely on the basic principles of communication systems. The Communication System is a collection of individual communications networks, transmission systems, relay stations, tributary stations, and data terminal equipment capable of interconnection and interoperation to form an integrated whole. This paper gives the primary concept of various analog and digital modulation and demodulation techniques.

OBJECTIVES

- To know the fundamental concepts of Communication.
- To learn the designing procedure and operations of the circuits used for communications.
- To provide a strong foundation in the design and construction of Analog Communication systems like AM, FM.

UNIT I - Modulation Techniques


UNIT II - Wave Propagation


UNIT III - Antenna Theory


UNIT IV - Receiver

UNIT V - Modulation Types Analog & Digital Modulation


TEXT BOOKS

REFERENCES
SCOPE

A Linear Integrated Circuit (linear IC) is a solid-state analog device characterized by a theoretically infinite number of possible operating states. It operates over a continuous range of input levels. In contrast, a digital IC has a finite number of discrete input and output states. The Linear IC is the Operational Amplifier, which consists of resistors, diodes, and transistors in a conventional analog circuit. Linear ICs are employed in audio amplifiers, A/D (Analogue-to-Digital) converters, Averaging Amplifiers, Differentiators, DC (Direct-Current) Amplifiers, Integrators, Multi-vibrators, Oscillators, Audio Filters, and Sweep Generators. This paper enriches the basic needs of Linear Integrated Circuit for typical applications.

OBJECTIVES

- To know the fundamental concepts and characteristics of operational amplifier.
- To learn the designing procedure and operations of the different Integrated Circuits
- To provide a strong knowledge in the application areas of Linear Integrated Circuits.

UNIT I - IC Fabrication Technology


UNIT II - Operational Amplifier


UNIT III - Comparators and Filters


UNIT IV - Voltage Regulator

UNIT V - Timer and PLL

Introduction to Timer - Description of Functional block diagram of 555 timer –
Monostable operation – Applications: – Linear ramp generator – Pulse width modulator –
Frequency Divider - Astable operation – Applications: Schmitt trigger –Pulse Position
Modulator - FSK Generator Introduction to Phase locked loop –Basic Principles –VCO

TEXT BOOKS
1. Linear Integrated Circuits, Roy Choudhury. D, Shail Jain, New Age International Ltd, Fourth

REFERENCES
<table>
<thead>
<tr>
<th>Experiment</th>
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<tbody>
<tr>
<td>1. AM Modulation and Demodulation</td>
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<td>2. FM Modulation and Demodulation</td>
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<td>3. Pulse Amplitude Modulation and Detection</td>
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<td>4. Pulse Width Modulation and Detection</td>
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<td>5. Pulse Position Modulation and Detection</td>
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<td>6. Pulse Code Modulation and Detection</td>
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<td>7. Amplitude Shift Keying and Detection</td>
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<td>8. Frequency Shift Keying and Detection</td>
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<tr>
<td>9. Audio Amplifier using TBA 810</td>
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<td>10. IF Amplifier</td>
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<td>11. Study of Yagi uda Antenna</td>
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<td>12. IF amplifier</td>
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### PRACTICAL – IV
LINEAR INTEGRATED CIRCUITS LAB

(Any 10 Experiments)

1. Op-amp: Adder and Subtractor
2. Op-amp: Integrator and Differentiator
3. Op-amp: Schmitt trigger
4. Voltage to Current Converter and Current to Voltage Converter
5. Instrumentation Amplifier
6. Low Pass and High Pass Filters using Op-amp
7. Square and Triangular wave Generator
8. Astable multivibrator using 555
9. Monostable multivibrator using 555
10. Regulated power supply using IC 723
11. VCO using IC 555.
12. Function Generator using 8038
SCOPE
Introduce the students into the various aspects of office automation from primitive methods employed in the office to carrying out daily systems of office management to the modern day in-office automated systems.

OBJECTIVES

➢ Exchange of Information
➢ Management of Administrative Documents
➢ Handling of Numerical Data
➢ Meeting Planning and Management of Work Schedules

UNIT I

UNIT II

UNIT III
MS-Excel: Building a Worksheet - Editing a Worksheet - Formatting a Worksheet - Using Workbooks to organize information - Customizing Excel to work the way you do - Using formulas and functions to crunch numbers - Creating Worksheet Charts - Working with Lists, Databases and Pivot tables - Analyzing business data - Using Excel to publish to the Web.

UNIT IV
Getting started using MS-PowerPoint - Entering and Editing Text - Formatting text - Inserting Tables, Graphics, and Drawings - Adding special effects and Internet Links - Perfecting your presentation – Setting-Up and Publishing the slide show - Running the slide show.

UNIT V
MS-Access: Understanding Data basics - Creating tables and relationships - Using datasheets to enter and view data - Using Forms to enter and view data – Using Queries to get answer - Using Wizards to generate reports - Formatting Forms and Reports.

TEXT BOOK

REFERENCES
SCOPE
C is a general-purpose programming language. It is designed for developing system software, portable application software. Despite its low-level capabilities, the language was designed to encourage cross-platform programming.

OBJECTIVES
➢ To gain experience about structured programming
➢ To help students to understand the implementation of C language
➢ To understand various features in C

UNIT-I - Programming and Problem Solving

Construct algorithms for the following: Addition and Multiplication of Two numbers – Check for Odd or Even numbers – Check for Prime numbers – Summation of Set of Numbers.

UNIT-II - Introduction to C

UNIT-III - Functions, Structures and Union

UNIT-IV - Pointers
Pointers – Introduction – Declaring Pointer Variables - Pointer and Arrays - Pointers and Strings – Array of Pointers - Functions and Pointers - Function Returning Pointers -Pointers to functions - Pointers and Structures

UNIT-V - File Management

TEXT BOOKS
REFERENCES

WEB SITES
2. http://www2.its.strath.ac.uk/courses/c/
SCOPE
Grasp the fundamentals of a programming language and know the basic differences between programming languages. It provides knowledge on program logics and different platforms to build effective software.

OBJECTIVES
- No explicit prerequisite course work is required, but students are expected to have a fundamental understanding of Language Basics, Programming Fundamental and OOP's Concepts.
- Understanding the platform; Determinism and concurrency; Handling input and output securely; Safe error handling and logging; Engineering for security features; Software security in operations.
- Program logics and different platforms to build effective software.
- Choose the architecture based on the problem to be solved.
- Build, compile, and execute a VB program.

UNIT I
Introduction to Windows and visual basic - customizing forms - properties window - tool box - creating controls - name property - properties of command button - event procedures for command button - access keys - image controls - text boxes – labels - message boxes - grid.

UNIT II
Function procedures - sub procedures – arrays - control arrays- adding & removing controls in control array-using arrays with function and procedures.

UNIT III
Intrinsic controls : Pointer , Label , Frame , Checkbox, Combo box, Hscroll Bar, Timer, DirListbox , Shape , Image OLE, Picture Box. List box, Text box, Command button, Option button, Vscrollbar, Drive List box, Line controls usage and properties.Tree View Control – List View Controls.

UNIT IV
Project with multiple forms - MDI forms - list box - combo box - option button - check box - scroll bars – timers - menu editor - line & shape control - creating objects - building classes.

UNIT V
DDE – Methods, Properties, Events – Database Programming: Data Tools – DAO, ADO, OLEDB and RDO Data base Connections – ActiveX commands.
TEXT BOOK

REFERENCES
OFFICE AUTOMATION LAB

(Any 10 Programs)

MS-WORD

1. Type a paragraph and perform the following.
   - Change the font size
   - Bold, italics, underline
   - Line spacing
   - Changing of background color and text color
   - Inserting footer and header
   - Alignment – left, right, justified, center

2. Type a document and perform the following operations.
   - Change the text into THREE columns
   - Check spelling and grammar
   - Bullets and numbering list items
   - Find and replace

3. Prepare the department timetable using MS-Word.
4. Prepare the job application letter enclosing your Bio-data.
5. Using Mail Merge to prepare an interview calls letter.

MS-EXCEL

6. To link an Excel worksheet into a word document using Object.
7. An excel worksheet contains monthly sales details of five companies. Find the monthly and quarterly average sales of each company.
8. Draw a line chart showing the sales turnover of five different companies over a period of ten years.
9. Draw a pie chart showing particular class student semester result.
MS-ACCESS

10. Create a database and maintain the address of your classmates with the following constraints.

- Roll number should be the primary key.
- Names should not be empty
- Maintain at least 10 records.
- Recall information according to place, city.

11. Create an item table with the following structure.

- Item number, Item name, Quantity, Net price.

- Find the net price for all records.
- Display only the item number, item name for net price > 10000
- To increase the rate by 10% for all records.
- Display all the details for item name = “nut” and quantity >10.

POWER POINT

12. Prepare a power point presentation with atleast three slides for Department Inaugural Function.

13. Draw an organization chart with minimum three hierarchical slides.

14. Design an advertisement campaign with minimum three slides.
(Any 10 Programs)

1. Write a program to find factorial of a given number using recursive and non recursive
2. Write a program to generate Fibonacci series.
3. Write a program to print Multiplication table using for and Do While Loops
4. Write a program to find Maximum number without using arrays
5. Write a program to convert a given number into words
6. Write a program
   (i) to find the length of a string
   (ii) concatenation of two strings
7. Write a program to reverse the given string
8. Write a program to count the vowels in a given sentence
9. Write a program to check the given string is palindrome or not
10. Write a program to perform matrix multiplication
11. Using any one sorting method to sort given ‘n’ numbers using pointers.
12. Write a program to prepare an employee pay slip using structures
13. Write a program for Electricity Bill Preparation using files
14. Write a program for the Odd and even numbers are stored in separate files the original files.
15ECU313 C  |  VISUAL PROGRAMMING LAB  |  Semester-III
| L | T | P | C |
| 3 | - | - | 2 |

(Any 10 Programs)

1. Write a program to convert the number entered by the user to its equivalent decimal, octal, and hexadecimal
2. Write a program to perform arithmetic operations getting input from the user through input box.
3. Write a program to perform geometrical calculations
4. Write a program to accept user name and age. If age is greater than 18 displays “eligible to vote”, else display how many years he has to wait to vote.
5. Write a program to check whether accepted string is palindrome or not.
6. Write a program to calculate the simple interest and compound interest
7. Write a program to calculate the total marks of student and print grade.
8. Write a program to perform string operations.
9. Write a program to add, remove, clear item from the list box.
10. Write a calculator program to perform arithmetic operations.
11. Write a program to create menu bar with title color and size. Color menu allows selection of color from menu and fills program with the selected color. Color menu has menu items fill color and exit. When fill color menu is clicked another menu should popup with list of colors. Size menu contains menu item small and large. When small & large is clicked form should be minimized and maximized.
12. Write a program to illustrate the drag and drop operations of mouse.
Instruction Hours / week: L: 2 T: 0 P: 0    Marks: Internal: 100 External: Nil Total: 100

SCOPE

To achieve the analytical and reasoning competencies and to improve their communication and presentation skills

OBJECTIVES

➢ To impact knowledge on both Aptitude and Soft skills to the students
➢ To critically evaluate and demonstrate various principles involved in solving mathematical problems and to adopt new and faster methods of calculations.
➢ Reinforcing competencies in soft skills which are crucial in a social setting

UNIT - I
Time, Speed and Distance, Time and Work, Pipes and Cisterns, Geometry, Data Arrangement

UNIT – II
Analogy, Logic based Venn diagram, Probability, Permutation and Combination, Logarithms

UNIT – III
Data Sufficiency, Clocks, Calendar, Reading Comprehension, Sentence Correction, Sentence Completion, Spotting the Errors, Jumbled Sentences

UNIT – IV
Synonyms, Antonyms, Verbal Analogy, Statements and Assumptions, Group Discussion

UNIT - V
Resume Writing, Introduction to HR rounds, Time Management, Attitude and Behaviour
OBJECTIVES

➢ To train the students in understanding the concepts of communication.
➢ To train the students in developing their written communication and presentation skills.

UNIT I

Concept of Communication – Barrier to Communication – Body language – Personality Development – Etiquette and Manners- Soft Skills – Emotional Intelligence

UNIT II

Listening Comprehension – Reading Comprehension – Paragraph writing – Precis Writing – Writing Resume and Covering Letter -Speaking – Welcome Address, Vote of Thanks, Compering, Debates, Role Play, Dialogues – Vocal Communication Techniques. Voice, Quality, Volume, Pitch

UNIT III

Dicto Composition – Letter Writing (Informal, Letters to the Editor etc) – Term paper – Book reviews

UNIT IV


UNIT V

Effective Presentation – Planning – Audience Analysis – Logical Sequencing – Timing of the Presentation – Conclusion – Answering Queries – Group Discussion – Interview.

PRESCRIBED TEXT


REFERENCES

SCOPE

**Industrial and Power Electronics** is the application of solid-state electronics for the control and conversion of electric power. Power electronic converters can be found wherever there is a need to modify a form of electrical energy (i.e. change its voltage, current or frequency). The power range of these converters is from some milli-watts to hundreds of megawatts. An AC/DC converter called rectifier is the most typical power electronics device found in many consumer electronic devices and other converters are normally employed wherever required. This paper will provide enough knowledge about handling the Industrial equipments and working of Power electronic devices.

**OBJECTIVES**

- To learn the various converters for single phase and 3-Phase circuit.
- To provide a strong knowledge about industrial applications of electronic and electric control devices.
- To know the fundamental concept of Industrial Electronics and its Applications.

**UNIT I - Thyristors and UJT**


**UNIT II - Turn On/Off Mechanisms**


**UNIT III - Controlled Rectifiers & Inverters**


**UNIT IV - Convertors and Power MOSFET**


**UNIT V - Applications**

TEXT BOOKS

REFERENCES
SCOPE
Microwave transmission refers to the technology of transmitting information by the use of the radio waves whose wavelengths are conveniently measured in small numbers of centimeters, by using various electronic technologies. Microwave signals are used for both satellite and ground-based communications. Many TV and telephone communications in the world are transmitted over long distances using microwave signals. The signals can carry thousands of channels at the same time, making it a very versatile communication system. Satellite communications play a vital role in the global telecommunications system.

OBJECTIVES
➢ To know the fundamental concepts of Microwave Waveguides.
➢ To Learn the Microwave Standards and RADAR Technology
➢ To Provide a strong knowledge about of Spread Spectrum and Communication in Space.

UNIT I – Electro-magnetics and Waveguides

UNIT II - Microwave Tube Circuits and Antennas

UNIT III - Radar
Introduction – Block Diagram of Simple RADAR – Classification – Free space radar range equation – Maximum unambiguous range – Pulsed RADAR system – Target detection – Scanning and Tracking with radars – Frequency diversity - Doppler Effect – CW Doppler radar – MTI Radar – Frequency modulated CW radar

UNIT IV - Orbital Mechanics and Launchers

UNIT V - Satellite and Link Design
Satellite subsystems – Attitude and orbital control system – Telemetry, Tracking, Command and monitoring – Power systems – Communication subsystems– Equipment reliability and space communication.-Basic transmission Theory – Design of Downlinks – Uplink design

TEXT BOOKS
2. Satellite Communications, Timothy Pratt, Charles Bostian and Jeremy Allnut, Wiley India
REFERENCES
1. Characteristics of SCR
2. Characteristics of TRIAC
3. Characteristics of MOSFET
4. Characteristics of UJT
5. Characteristics of DIAC
6. Commutation of Thyristors
7. Single Phase Inverter
8. Speed Control of DC Motor.
9. Burglar Alarm
10. Automatic Street Light Controller
11. UJT as Relaxation Oscillator
12. TRIAC Flashes
13. Lamp dimmer
14. Thyristor Chopper
15. Automatic battery charger

(Any 12 Experiments)
SCOPE
It is an entry-level course for creating database systems. This course designed for students who wish to learn how to make websites. Students are expected to have programming experience in Visual Basic & Relational Database Management System.

OBJECTIVES
➢ This course enables students to understand web page site planning, management and maintenance
➢ To evaluate website quality, learn how to create and maintain quality web pages learn to create and manipulate images.
➢ To gain the skills and project-based experience needed for entry into web design and development careers.
➢ Develop awareness and appreciation of the many ways that people access the web, and will be able to create standards-based websites that can be accessed by the full spectrum of web access technologies.

UNIT – I  Introduction to HTML
Introduction-html browsers-history of html and sgml- html command tags-quotation marks-spacing-special symbols-tags with automatic line breaks-urls-understanding domain names-links-defining web page-main body of text- headers-adding paragraph-formatting text-font type, size, predefined fonts, bold, italic-setting colors-text color, superscripts and subscripts-underlining text-preformatted text-blinking text-block quotes-margins-line breaks-ordered and unordered list-links-scaling an image-images alignment

UNIT – II  HTML, Forms, Frames

UNIT – III  eXtensive Markup Language

UNIT – IV ASP

UNIT – V  Java Script and VB Script
Java Script: Introduction-Operators-Assignments-Comparisons-Reserved Words-Browsers to Use-Software Requirement-Starting with Java Script-Using Quotes, Alert-

VB Script: Introduction-Adding VB Script code to HTML-Adding VB Script code to Documents-Data Types-Getting the Message Across.

**TEXT BOOKS**

**REFERENCES**

**WEB SITES**
1. www.w3schools.com/
2. www.htmlcodetutorial.com/
3. alexle.net/archives/category/web-technolgy
4. jmarshall.com/easy/
SCOPE
C++ Programming is designed for developing system software, portable application software. Despite its low-level capabilities, the language was designed to encourage cross-platform programming. The students should already be familiar with the C programming language.

OBJECTIVES
- The objective of this course is to provide the student with the fundamental knowledge and skills to become a proficient C++ programmer.
- The student will learn to transpose the physical problem domain into a hierarchy of objects.
- Industry standard software engineering techniques will be presented and used to architect the system design.
- The student will program in a structured style whereby reinforcing the concepts of software quality, reliability and maintainability.

UNIT – I Introductions
- Principles of object oriented programming: Basic concepts of object oriented programming – Benefits of OOP – Applications of OOPs – Structure of C++ Program C++

UNIT – II Control Structure, Functions and Constructors

UNIT – III Operator Overloading and Inheritance

UNIT – IV Pointers and I/O Operations

UNIT – V File Management
- Files: Classes for file stream operations – Opening and Closing a file – sequential input and output operations – updating a file random access – Command Line Arguments. Templates :- Templates – class templates – function templates – member function templates
TEXT BOOK

REFERENCES

WEB SITES
1. www.daniweb.com
2. www.eships.com
3. www.allexperts.com
SCOPE

Students should have an understanding of Microsoft Windows 2000, XP, or Vista. Students are expected to have basic knowledge in Graphical User Interface and object oriented programming.

OBJECTIVES

- No explicit prerequisite course work is required, but students are expected to have a fundamental understanding of Language Basics, Programming Fundamental and OOP's Concepts
- Understanding the platform; Determinism and concurrency; Handling input and output securely; Safe error handling and logging; Engineering for security features; Software security in operations.

UNIT–I

Introduction to .NET, .NET Framework features & architecture, CLR, Common Type System, MSIL, Assemblies and class libraries. Introduction to visual studio, Project basics, types of project in .Net, IDE of VB.NET- Menu bar, Toolbar, Solution Explorer, Toolbox, Properties Window, Form Designer, Output Window, Object Browser.
The environment: Editor tab, format tab, general tab, docking tab. visual development & event drive Programming -Methods and events.

UNIT–II

The VB.NET Language- Variables -Declaring variables, Data Type of variables, Forcing variables declarations, Scope & lifetime of a variable, Constants, Arrays, types of array, control array, Collections, Subroutines, Functions, Passing variable Number of Argument Optional Argument, Returning value from function – Message box – Input box.. Control flow statements: conditional statement, loop statement. MsgBox & Inputbox.

UNIT – III

Working with Forms : Loading, showing and hiding forms, controlling One form within another. GUI Programming with Windows Form: Textbox, Label, Button, Listbox, Combobox, Checkbox, PictureBox, RadioButton, Panel, scroll bar, Timer, ListView, TreeView, toolbar, StatusBar.There Properties, Methods and events. OpenFileDialog, SaveFileDialog, FontDialog, ColorDialog, PrintDialog. Link Label. Designing menues : ContextMenu, access & shortcut keys.

UNIT–IV


UNIT–V

Database programming with ADO.NET – Overview of ADO, from ADO to ADO.NET, Accessing Data using Server Explorer. Creating Connection, Command, Data Adapter and Data
Set with OLEDB and SQLDB. Display Data on data bound controls, display data on data grid. Generate Reports Using CrystalReportViewer.

**TEXT BOOKS**

**REFERENCES**
(Any 10 Programs)

1. Create a simple HTML document about yourself or a topic of your choice using the basic tags such as Bold, Italic, Heading, images, horizontal rule and images.

2. Create a HTML document which includes an unordered list, ordered list, definition list to your document and create a link to Yahoo

3. Develop static pages (using only HTML) of an online Book store. The pages should resemble: www.amazon.com. The website should consist the following pages.
   a. Home page
   b. Registration and user login
   c. User profile page
   d. Items catalog
   e. Shopping cart
   f. Payment by credit card
   g. Order confirmation

4. Create a table in HTML document with following formats
   - table with no borders
   - display table headers
   - to handle cells that have no content
   - table cells that span more than one row or one column
   - Adding background image to a table

5. Create and save an XML document at the server, which contains 10 users information. Write a program, which takes User Id as an input and returns the user details by taking the user information from the XML document.

6. Creation of a XML document of 20 students of III IT. Add their roll numbers, marks obtained in 5 subjects, total and percentage and save this XML document at the server.
Write a program that takes students’ roll number as an input and returns the students marks, total and percentage by taking the students’ information from the XML document.

7. Write an XML file which will display the Book information which includes the following:
   a. Title of the book
   b. Author Name
   c. ISBN number
   d. Publisher name
   e. Edition
   f. Price

   Write a Document Type Definition (DTD) to validate the above XML file.

8. Develop a Web page using Java script to perform the following information
   - Input student information.
   - Display student results for a given roll number.

9. Develop a web page for online exam using Java Script

10. Create a web page using two image file which switch between one another as the mouse pointer moves over the image. Use the On Mouse over and On Mouse event handler

11. Using VBScript create a calculator.

12. Create a HTML form that has number of text boxes when the form runs in the browser fill the textboxes with data. Write a Java script that verifies that all text boxes have been filled, if a text box has been left empty pop up an alert message indicating which box has been left empty. When Alerts OK button is clicked, set focus to that specific text box. If all the text boxes are filled, display thank you.
1. Create a class **Patient** with necessary data members. In the main () program, have the facility to
   - Store the details of n inpatients and outpatients
   - Display the details in a neat format

2. Create two classes **British** and **Metric** to store the measurements of distance in the British (feet and inches) and Metric (meters and centimeters) systems respectively. In the main () program, perform the following:
   - Get two measurements: one in British and the other in Metric
   - Ask the user in which system (British or Metric) (s) he wants the output.

3. Add two input measurements and print the result according to the user’s choice Create a class **Date** whose data members are Day, month, and Year. Write necessary member functions and perform the following operations using overload operator.
   - Increment a date by a day

4. Create a class **Date** whose data members are Day, month, and Year. Write necessary member functions and perform the following operations using overload operator.
   - Compares two dates

5. Create a class **String** that has a character array as a data member and perform the following operations using overloaded operators.
   - ‘+’ To add two strings
   - ‘==’ To compare two strings

6. Create a class **Computer** and derive two classes **Client** and **Server** from it. In the main () program, get the data about n clients and servers and print it back in a neat format.

7. Create a class **Shape** that contains two data members of type double to hold the two dimensions of the shape. Derive 3 more classes’ **Circle**, **Rectangle** and **Triangle** from the class Shape. Using appropriate member functions, get the values, calculate and print the area of different shapes using dynamic binding.
   **Hint**: Write 2 member functions in all the derived classes: one to set the data and the other to calculate and display the area.
8. Create a class **Staff** that contains the name, designation, and years of experience of a staff member of a college. Using containership, create two more classes **TeachingStaff** and **NonTeachingStaff** according to the following specifications. In addition to the properties of the staff class, the TeachingStaff class should contain the highest qualification, the staff member possesses and the departments he belongs to. The NonTeachingStaff class needs to contain the properties of Staff only. In the main (), get data about some of the teaching and NonTeachingStaff members of your college and print the details in neat format.

9. Create a class **Address** as whose data members are Name, Street, City, Pincode and Phone Number of a person. In the main () program, using array of pointers, get addresses of n persons, sort it in alphabetical order of names and display it back in a neat format.

10. Create a class that copies the content of a text file into another file. Write the program in such a way that the program accepts command line arguments and make the program to execute in a way exactly the copy command in DOS.

11. Create a class **Student** that could have the name, register number and marks in the subjects of the semester. Have the program to perform the following operations:
   - Store the data about n students in a data file.
   - Print the mark list of each student whenever requested.
   - Add details about some more students at any time.

12. Sort an integer and a floating-point array using function template.
15ECU412C .NET PROGRAMMING LAB

Semester-IV
L T P C
- - 3 2

(Any 10 programs)

1. Write a VB.NET program to calculate Simple interest and compound Interest
2. Write a VB.NET program to find mouse events and coordinates where the mouse is clicked.
3. Write a VB.NET program to implement Calculator.
4. Write a VB.NET program to implement Notepad
5. Write a VB.NET program to draw several shapes and fill with color.
6. Write a VB.NET program to perform the following in list box
   a) Add an item
   b) Delete an item
   c) List count
   d) Clear the List
7. Write a VB.NET program to calculate the days elapsed between the given two dates.
8. Write a VB.NET program to create Menu and link multiple forms with different colors.
9. Write a VB.NET program to animate the picture using animation control.
10. Write a VB.NET program to check whether given string is a Palindrome or not.
11. Write a VB.NET program to generate Fibonacci series for the input given using Input box.
12. Write a program to calculate the total marks of the student and print the grade
13. Write a VB.NET Program to maintain details of students. Use Crystal Report to generate report.
14. Write a VB.NET Program to implement Employee Payroll.
15. Write a VB.NET program to create and manipulate a File.
SCOPE

A Microprocessor 8085 incorporates most or all of the functions of a computer’s central processing UNIT (CPU) on a single integrated circuit (IC, or microchip). The Intel 8085 is an 8-bit microprocessor introduced by Intel in 1977. The 8051 is a 8-bit microcontroller chip designed by Intel in 1980, when it was released.

OBJECTIVES

- To know the fundamental concept of microprocessor 8085 and 8051 microcontroller architecture and to program it in assembly language.
- To learn the interfacing of different peripherals for various typical applications.
- To provide a strong practical knowledge in the application areas.

UNIT I – Introduction To 8085

UNIT II – 8085 Peripheral Devices
Introduction to Programmable Peripheral Interface 8255 — Programmable Interval Timer 8254 -8259 Interrupt Controller – 8237 DMA Controller – 8279 Keyboard Display Interface-8251 USART.

UNIT III – 8051 Microcontroller
Introduction to microcontrollers – Pin Diagram – Architecture – 8051 Instruction Set - Addressing Modes- Introduction to 8051 Assembly–I/O Port Programming.

UNIT IV - 8051 Interrupts & Peripherals

UNIT V – Real World Applications
Interfacing LCD to 8051 – Interfacing ADC to 8051 – Interfacing DAC to the 8051- interfacing sensors to 8051 – interfacing Stepper motor to the 8051 – interfacing keyboard to 8051.

TEXT BOOKS

REFERENCES
SCOPE

A **Digital communications** is the physical transfer of data (a digital bit stream) over a point-to-point or point-to-multipoint communication channel. The data is represented as an electromagnetic signal, such as an electrical voltage, radio wave, microwave or infrared signal. While analog communications is the transfer of continuously varying information signals whereas digital communications is the transfer of discrete messages. Fiber-optic communication is a method of transmitting information from one place to another by sending pulses of light through an optical fiber. The light forms an electromagnetic carrier wave that is modulated to carry information.

OBJECTIVES

- To know the fundamental concept of Digital and Fiber Optic Communications and Shift keying operations.
- To learn the operations of the circuits used for Digital and Fiber Optic Communications and Network Protocols.
- To provide a strong foundation in the construction and functions of Modulation circuits like PAM, PPM and PWM.

UNIT I – Data Communication


UNIT II – Digital and Analog Transmission


UNIT III – Wireless LAN’s


UNIT IV – Optical Fiber communication


UNIT V – Optical Sources and Detectors

  Laser –Basic Concepts-Optical Emission from Semiconductors - Semiconductor Injection Laser. LED – LED power and efficiency - LED structures-LED characteristics. Photo

TEXT BOOKS

REFERENCES
<table>
<thead>
<tr>
<th>15ECU503</th>
<th>BIOMEDICAL INSTRUMENTATION</th>
<th></th>
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<td>Semester-V</td>
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</table>

**SCOPE**

Biomedical Instrumentation has become indispensable nowadays for the better service of Biomedical Equipments and most importantly for the survival of patients. The service quality of hospitals is often judged according to the state of the equipments they have at their disposal, which is the key factor for the better treatment of the patients. A large number of electronic equipments are being used in hospitals for Patient Care Diagnosis to carry out advanced surgeries.

**OBJECTIVES**

- To know the fundamental concept of origin of Bio-electric signals and recording it with highly precision equipment.
- To learn the various medical equipment for Diagnostics & Therapeutic purposes.
- To provide a large number of qualities trained Medical Electronics professionals for preventive and maintenance of medical equipments.

**UNIT I - Bioelectric Signals**


**UNIT II –Electrodes and Transducers**

Basic Electrode Theory – Bio-potential Electrodes – Biochemical Electrodes – Electrical Conductivity of electrode jellies and creams – Transducers and Transduction Principles: Transducers for Biomedical Applications – Biosensors and Smart Sensors

**UNIT III - Biomedical Recording and Patient Monitoring System**


**UNIT IV - Diagnostic and Therapeutic Equipments**


**UNIT V - Advancements in Medical Instrumentation**


**TEXT BOOKS**

2. Electronics and Medicine and Biomedical Instrumentation, Nandini.K.Jog, Prentice Hall of
REFERENCES
1. Biomedical Instrumentation Application and Design, John G Webster, Wiley India Pvt Ltd 2012.
SCOPE
VHDL (VHSIC hardware description language) is a hardware description language used in electronic design automation to describe digital and mixed-signal systems such as field-programmable gate arrays and integrated circuits. This course enriches the features of programming and simulation techniques.

OBJECTIVES
- To learn the basics of language elements.
- To provide a strong knowledge about the VHDL Modeling.

UNIT I – Introduction And Basic Terminology

UNIT II – Basic Language Elements
Identifiers-Numbers-Characters-Strings-Bit Strings-Data Objects-Data Types- Integer Types-Physical Types-Floating Point Types-Enumeration Types-Arrays-Operators: Arithmatic Operators-Relational Operators-Logical Operators.

UNIT III – Behavioral Modeling

UNIT IV – Dataflow Modeling

UNIT V – Structural Modeling
An Example of Component declaration - Component Instantiation - Other Examples-Resolving Signal Values – Signal Packages.

TEXT BOOKS

REFERENCES
SCOPE

Very-Large-Scale Integration (VLSI) is the process of creating Integrated Circuits by combining thousands of transistors into a single chip. VLSI began in the 1970s when complex semiconductor and communication technologies were being developed.

OBJECTIVES

- To learn the fabrication techniques of Integrated Circuits.
- To provide a strong knowledge about the Design specifications of IC technology.
- To know the fundamental rules of layout design.

UNIT I - Introduction to MOS Technology


UNIT II - Layout Design


UNIT III - Design of System


UNIT IV - Tools for Design


UNIT V - CMOS Design Projects & Fast VLSI Circuits


TEXT BOOKS


REFERENCES

SCOPE
Printed Circuit boards are physical and electrical scaffolds that hold the electronics together and designing them requires a lot finesse and ingenuity.

OBJECTIVE
➢ To understand the types of Printed Circuits Board
➢ To learn the Fabrication Process
➢ Validate the PCB with Design Rules Check

UNIT I - Types of PCB

UNIT II - Layout and Artwork

UNIT III - Laminates and Photo Printing

UNIT IV - Etching and Soldering

UNIT V - Design Rules and Automation
Reflection – Crosstalk – Ground and Supply line noise – Electromagnetic interference from pulse type EM fields and automation – Automated artwork drafting – CAD.

TEXT BOOKS

REFERENCES
SCOPE
SPICE (Simulated Program with Integrated Circuit Emphasis) is a general purpose software that simulates different circuits and can perform various analysis of electrical and electronic circuits including time domain response, small signal frequency response, total power dissipation, determination of nodal voltages, branch current in a circuit, transient analysis, determination of operating point of transistors, determinations of transfer functions etc.

OBJECTIVES
➢ To gain familiarity with PSPICE, and to review in greater detail.
➢ To investigate the use of the industry-standard circuit simulation tool PSpice.

UNIT I - Introduction

UNIT II - DC Circuit Analysis

UNIT III - Transient Analysis

UNIT IV - Semiconductor Devices
Diode Characteristics in SPICE – BJT Characteristics in SPICE – JFET Characteristics in SPICE - MOSFET Characteristics in SPICE.

UNIT V - Operational Amplifier
Inverting and Non-inverting Amplifier – Active Filters: Low Pass Filters - High Pass Filters – Band Pass Filters – Band Reject Filters.

TEXT BOOKS

REFERENCES
PRACTICAL – VI
MICROPROCESSOR AND MICROCONTROLLER
LAB

(Any 12 Experiments)

Microprocessor Lab

1. Addition of 8/16-bit and array of data.
2. Multiplication and Division.
3. Fill and transfer an array of data.
5. Data Transfer using Parallel Ports.
6. DC Motor Controller.
7. Counter using Seven Segment Display.
8. Digital to Analog Converter Interface.

Microcontroller Lab

10. LCD Interfacing.
15. Lamp Dimmer.
SCOPE

Electronics is the branch of science and technology that deals with electronic devices and circuits involving active and passive components such as vacuum tubes, transistors, diodes and Integrated Circuits. This paper gives the basic theory of construction and operations of Electronic Devices and Circuits.

OBJECTIVES

➢ To know the passive and active devices in Electronics.

➢ To learn the fundamental operations of semiconductor materials and devices.

UNIT I – Passive Components

UNIT II - Semiconductor Devices and Special Diodes

UNIT III - Digital Electronics

UNIT IV - Amplifiers & Oscillators
Classification of amplifiers- Single stage RC coupled amplifier - Oscillators –Types of oscillators: Hartley oscillator, Colpitts Oscillator & RC Phase shift oscillator.

UNIT V -.Operational Amplifiers

TEXT BOOKS

REFERENCES
SCOPE
This course presents the architecture and Programming Concepts of PIC16F877 microcontroller, and Micro C/OS-II RTOS functions. It provides the functional concepts of interfacing and Operation of RTOS based system design instruction set, programming, and interfacing concepts of PIC16F877 microcontroller and RTOS based system design.

OBJECTIVES
- To develop the programming skills in PIC16F877 microcontroller.
- To develop the various concepts of Embedded System.
- To provide a strong knowledge in the field of RTOS.

UNIT I – PIC 16F87x Microcontrollers

UNIT II – Peripheral Features of 16F87x Microcontrollers

UNIT III - Introduction to PIC Peripherals and Interfacing
Introduction to PIC Peripherals and Interfacing: PIC16imer programming in assembly and C - Serial Port programming in assembly and C - Interrupt programming in assembly and C - ADC and DAC interfacing - CCP and ECCP programming - DC Motor interfacing and PWM.

UNIT IV - ARM Processor Fundamentals

UNIT V – Real Time Operating Systems

TEXT BOOKS
REFERENCES
SCOPE
This course provides the concept of Cellular Networks, GPRS, Wi-Fi, WiMax Systems. It encompasses the various Mobile Communication Technologies and the Structure of Protocols. Wireless services such as cell phones, radio and Wi-Fi are designed using a hub-and-spoke model where the hubs are deployed and interconnected as part of a well planned structure. This radically new model of topology growth/evolution and of network operation poses unique challenges at every level.

OBJECTIVE
➢ To know the fundamental concept of Mobile Communication.
➢ To understand the concept of Protocol standards and security tasks.

UNIT I – Cellular Networks
Cellular systems - Frequency Management and Channel Assignment - Types of handoff and their characteristics - FDMA – TDMA – CDMA – Cellular Wireless Networks.

UNIT II - GPRS

UNIT III - WiFi and WLL
Introduction WiFi-802.11b-802.11g-802.11a-802.16-WLL – overview –WLL Configurations-Benefits-Highlights-Propgagation Considerations-Standards of IEEE 802.16.

UNIT IV - WiMax

UNIT V - Data Services
SMS: Strength of SMS –SMS Architecture:SMMT-SMOM –SMS as an information bearer-Operator –Centric full-Operator Independent pull-Value added service through SMS.

TEXT BOOKS

REFERENCES
SCOPE
Robotics is the science that deals with the technology of robots, their design, manufacture and application. Robotics is synonymous with automation. Robots are mainly used for carrying materials including heavy parts to and from inconvenient locations and handling hazardous materials like nuclear waste. The benefit of robots is that they never get tired or exhausted. The mechanization in processing of Robotics is divided into three types and they are hard, programmable, and flexible.

OBJECTIVES
- To understand the basic configurations of Robotics.
- To understand the various types of Robots.
- To get an exposure in Robot Control Systems.

UNIT I - Fundamentals of Robotic Technology

UNIT II – Control System and Components

UNIT III - Robot Effectors
Types of end effectors – Mechanical grippers – Tools as End effectors – The Robot / End effectors interface.

UNIT IV – Sensors and Vision Systems

UNIT V - Robot Motion Analysis and Control
Introduction to manipulator kinematics – Robot dynamics configuration of a robot controller – Flexible Manufacturing System Concept – Transfer system – Processing operation – Assembly and inspection

TEXT BOOKS

REFERENCES
SCOPE
This course presents the concept of Instrumentation and basic principles involved in the control systems. It contains the different types of transducers and digital instruments. It also provides the knowledge in the fundamentals of Instrumentation and control systems and its application scenarios.

OBJECTIVES
- To understand the concept of Stability Analysis of Control Systems in Instrumentation.
- To understand the usage of Instrumentations used in Control Systems.
- To know the Compensation techniques used in the Control Systems.

UNIT I - Transducers and Measurements

UNIT II - Digital Instruments

UNIT III - Concepts of Control Systems
Introduction to Control Systems-Human elements in control systems-block diagram fundamentals -open loop control system-closed loop control systems- Linear and Nonlinear Systems- Effect of feedback on Overall gain, Stability, Sensitivity and Noise.

UNIT IV - Introduction to Block diagrams
Block diagram reduction-Signal flow graph-Signal flow graph algebra-construction of signal flow graph from block diagram- Mason’s gain formula-Time Response Analysis of First and second order systems-Steady state Error.

UNIT-V - Stability Analysis of Control System

TEXT BOOKS

REFERENCES
SCOPE
MATLAB is a high-level language and interactive environment for numerical computation, visualization, and programming. The MATLAB can be used to analyze data, develop algorithms and create models and applications.

OBJECTIVE
➢ To introduce the MATLAB for numerical computations to know the basic concepts.
➢ To familiarize basic commands through the Command window and output through the Graph window.

UNIT I - Introduction

UNIT II - Vectors and Matrices

UNIT III - I/O Statements and Graphics

UNIT IV - Control Structures and MAT LAB Programming

UNIT V - Simulink

TEXT BOOKS
REFERENCES
(Any 12 Experiments)

1. Writing and testing programs involving arithmetic, logical and BIT oriented instructions
2. LED interfacing
3. Data transfer program with parallel port
4. Key interfacing and Seven segment display interface
5. Stepper motor controller interface
6. Speed control of DC motor
7. PWM generation
8. Waveform generation
9. A/D converter interface
10. D/A converter
11. LCD interface
12. Programming using interrupts
13. Solid State Relay
14. I2C Interface
15. Serial Communication Interface
SCOPE
The Scope of Electronic Instrumentation engineering is vast, and appears to be growing, in part due to the increased use of automatic control in manufacturing and process plants. Growth is also tied to the development of more accurate and more robust sensors, which allow us to detect phenomena of interest (such as the presence of minute levels of toxins in food) with much higher precision than what we could do a generation ago.

OBJECTIVE
- To know the field of Electronic Instrumentation has been extremely widespread application in all discipline.
- To understand Mining & Metallurgy, Robotics, Textile, Rolling Mills, Cranes & Hoists, Arc furnaces, Chemical engineering, Process control, static relays, etc.

UNIT I - Electronic Test Instruments

UNIT II - Signal Sources
Sine wave generator-Frequency synthesized sine wave generator-Sweep frequency generator, pulse and square wave generator-Function generator-Wave analyzer-Applications - Harmonic distortion analyzer-Spectrum analyzer-Applications-Audio Frequency generator-Noise generator.

UNIT III - Oscilloscopes
General purpose oscilloscope-Screens for CRT graticules-Vertical & horizontal deflection systems- Time base operation, triggers – sweep control, z axis input - Delay lineMultiple trace-Dual beam & dual trace-Probes-Oscilloscope techniques-special oscilloscopes - Storage oscilloscope-sampling oscilloscope-digital CRO.

UNIT IV - Digital Instruments

UNIT V - DISPLAY AND RECORDING DEVICES
Bar graph display-Segmental and dot matrix display-X-Y recorders, magnetic tape recorders-Digital recording-Data loggers-Interference and screening-Electrostatic and electromagnetic interference & earth loops.

TEXT BOOKS

REFERENCES
SCOPE
Programmable Logic and Distributed Control Systems is used for optimum controlling of the process parameters. PLC consisting of programmable micro controllers that uses a specialized computer language. Learn the concepts of Computer based control systems and automation process using PLC and Distributed Control Systems.

OBJECTIVE
- To provide knowledge in PLC architecture and PLC intermediate functions
- To get strong programming skills and working knowledge in PLC applications.

UNIT I - Review of Computers In Process Control

UNIT II - Programmable Logic Controller (PLC) Basics
Definition- overview of PLC systems - Input/ Output modules - Power supplies –ISO slots. General PLC programming procedures - Programming on-off outputs-Auxiliary commands and functions - Creating Ladder Diagrams from process control descriptions. PLC basic functions - Register basics - Timer functions - Counter functions.

UNIT III - PLC Intermediate Functions
Arithmetic functions - number comparison functions - Skip and MCR functions - Data move systems - PLC Advanced intermediate functions- utilizing digital bits - sequencer functions - PLC Advanced functions: alternate-programming languages - operation. PLC-PID functions - PLC installation - trouble shooting and maintenance

UNIT IV - Interface and Backplane Bus Standards for Instrumentation Systems
Field bus: Introduction - concept - international field bus standards. HART protocol: method of operation - structure - operating conditions and applications.

UNIT V - Distributed Control Systems (DCS)
Evolution of DCS - building blocks - detailed descriptions and functions of field control UNITs- operator stations - data highways - redundancy concepts. DCS - supervisory computer tasks and configuration - DCS- system integration with PLC and computers.

TEXT BOOKS

REFERENCES
SCOPE
MEMS and Control Engineering provides the principles of micro fabrication for the development of micromechanical devices and the design of Microsystems. It also explains the principles of energy transduction, sensing and actuation on a microscopic scale. Design and Digital control systems gives the effects of scaling, similarities and differences between micromechanical assemblies and macroscopic machines. This paper presents the designing concepts of digital control system.

OBJECTIVES
➢ To learn the various micro fabrication technologies for MEMS
➢ Understand unique requirements for MEMS fabrication
➢ To know about the merging of mechanical devices with circuits
➢ To know about the current trends and future technology for MEMS

UNIT I - Overview and Working Principles of MEMS

UNIT II - Fabrication & Microsystems Design

UNIT III - Concepts of Control System

UNIT IV - Time Response Analysis & Stability in Time and Frequency Domain

UNIT V - Design of Digital Control System

TEXT BOOKS

REFERENCES

SCOPE

Digital Signal Processing introduces the concepts and techniques associated with the digital signal processing. Familiarize with techniques suitable for analyzing and synthesizing both continuous-time and discrete time systems. To gain an appreciation of the technology and the software tools currently available for the design techniques of DSP systems.

OBJECTIVES

- To understand the fundamental concepts and theory of Discrete Fourier Series and Discrete Fourier Transform.
- To understand the discrete Fourier transforms (DFT), its applications and implementation by FFT techniques.
- To apply a design technique for FIR type digital filters.

UNIT I - Structures For Discrete Time Systems


UNIT II - Filter Design Techniques


UNIT III - Computation of Discrete Fourier Transform


UNIT IV TMS 320 C 6713 Overview


UNIT V -Introduction to MATLAB


TEXT BOOKS


REFERENCES