

VELTECH HIGH TECH

DR RANGARAJAN DR. SAKUNTHALA ENGINEERING COLLEGE

(Owned by Vel Trust 1997)

(AN ISO 9001: 2008 CERTIFIED INSTITUTION)

Accredited By NAAC with 'A' Grade and NBA Accredited Institution

(Approved by AICTE New Delhi and Govt. of Tamil Nadu, Affiliated to Anna University Chennai)



SYLLABUS

WEEKLY SCHEDULE

III SEMESTER 2017-18

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

IV YEAR DEGREE COURSE

#42, Avadi – Vel Tech Road,
Avadi

Chennai – 600062

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Vision of the Institute

Elevating Well Being of Humanity by Augmenting Human Resource Potential Through Quality Technical Education and Training

Mission of the Institute

To effectuate supremacy in technical education through articulation of research and industry practices for social relevance. To inculcate the habit of lifelong learning To exhibit professional ethics, commitment and leadership qualities

Vision of the Department

To emerge as a centre of academic eminence in electronics and communication and related spheres through knowledge acquisition and propagation meeting global needs and standards

Mission of the Department

- To impart quality education by inculcating fundamental knowledge in electronics and communication engineering with due focus on research and industry practices.
- To propagate lifelong learning.
- To impart the right proportion of knowledge, attitudes and ethics in students to enable them take up positions of responsibility in the society and make significant contributions.

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs)

- PEO1: To prepare students with strong foundation in basic science and mathematics and ability to use these tools in professional career and/or higher education by acquiring knowledge in area of Electronics and Communication Engineering.
- PEO2: Analyze real life problems, design appropriate system to provide solutions that are technically sound, economically feasible and socially acceptable.
- PEO3: To train students with electrical and computer engineering breadth so as to Work on multi-disciplinary projects.
- PEO4: Exhibit professionalism, ethical attitude, communication skills, team work in their profession and adapt to current trends by engaging in lifelong learning.

PROGRAM OUTCOME (POs)

- PO1: Apply knowledge of computing, mathematics, science and engineering fundamentals appropriate to the discipline.
- PO2: Identify, formulate, research literature and solve complex Electronics and Communication Engineering problems for reaching substantial conclusions.
- PO3: Design, implement and evaluate an electronics-based system, process, component or program to the standards for the benefits of the society.
- PO4: Perform investigations of complex problems including design of experiments, analysis and interpretation of data and synthesis of information to provide valid conclusions.
- PO5: Use current techniques, skills and modern engineering tools necessary for computing practice.
- PO6: Demonstrate understanding of the societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to engineering practice.
- PO7: Understand that the solutions have to be provided taking the environmental issues and sustainability into consideration.
- PO8: Understand and commit to professional ethics, responsibilities and norms of engineering practice.
- PO9: Function effectively as an individual and as a member or leader in diverse teams and in multidisciplinary settings
- PO10: Communicate effectively on complex Electronics and Communication engineering activities with the engineering community and with society at large, such as being able to comprehend, write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
- PO11: An understanding of engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects.
- PO12: Realize the need for lifelong learning and engage them to adopt technological changes.

WEEK DETAILS

SL.NO.	WEEK	FROM	TO
1	WEEK1	24.06.2017	24.06.2017
2	WEEK2	27.06.2017	01.07.2017
3	WEEK3	03.07.2017	08.07.2017
4	WEEK4	10.07.2017	15.07.2017
5	WEEK5	17.07.2017	22.07.2017
6	WEEK6	24.07.2017	29.07.2017
7	WEEK7	31.07.2017	05.08.2017
8	WEEK8	07.08.2017	12.08.2017
9	WEEK9	16.08.2017	19.08.2017
10	WEEK10	21.08.2017	26.08.2017
11	WEEK11	28.08.2017	01.09.2017
12	WEEK12	04.09.2017	09.09.2017
13	WEEK13	11.09.2017	16.09.2017
14	WEEK14	18.09.2017	23.09.2017
15	WEEK15	25.09.2017	28.09.2017
16	WEEK16	03.10.2017	07.10.2017
17	WEEK17	09.10.2017	14.10.2017

SUBJECT CONTENTS

SL.NO	SUBJECT CODE	SUBJECT NAME
THEORY		
1	MA6351	Transforms and Partial Differential Equations
2	EE6352	Electrical Engineering and Instrumentation
3	EC6301	Object Oriented Programming and Data Structures
4	EC6302	Digital Electronics
5	EC6303	Signals and Systems
6	EC6304	Electronic Circuits- I
PRACTICAL		
7	EC6311	Analog and Digital Circuits Laboratory
8	EC6312	OOPS and Data Structures Laboratory

TEST / EXAM SCHEDULE

SL. NO	SUBJECT CODE	SUBJECT NAME	UNIT TEST I	UNIT TEST II	Pre Model Exam	UNIT TEST IV
1	MA6351	Transforms and Partial Differential Equations	10.07.2017 FN	27.07.2017 FN	16.08.2017	07.09.2017 FN
2	EE6352	Electrical Engineering and Instrumentation	10.07.2017 AN	27.07.2017 AN	17.08.2017	07.09.2017 AN
3	EC6301	Object Oriented Programming and Data Structures	11.07.2017 FN	28.07.2017 FN	18.08.2017	08.09.2017 FN
4	EC6302	Digital Electronics	11.07.2017 AN	28.07.2017 AN	19.08.2017	08.09.2017 AN
5	EC6303	Signals and Systems	12.07.2017 FN	29.07.2017 FN	21.08.2017	09.09.2017 FN
6	EC6304	Electronic Circuits-I	12.07.2017 AN	29.07.2017 AN	22.08.2017	09.09.2017 AN

SL.NO	SUBJECT CODE	SUBJECT NAME	MODEL EXAM
1	MA6351	Transforms and Partial Differential Equations	28.09.2017
2	EE6352	Electrical Engineering and Instrumentation	04.10.2017
3	EC6301	Object Oriented Programming and Data Structures	06.10.2017
4	EC6302	Digital Electronics	09.10.2017
5	EC6303	Signals and Systems	11.10.2017
6	EC6304	Electronic Circuits- I	13.10.2017

MA6351 TRANSFORMS AND PARTIAL DIFFERENTIAL EQUATIONS

WEEK 1

UNIT I PARTIAL DIFFERENTIAL EQUATIONS

Formation of partial differential equations – Singular integrals - Solutions of standard types of first order partial differential equations

WEEK 2

Lagrange's linear equation -- Linear partial differential equations of second and higher order with constant coefficients of both homogeneous

WEEK 3

Non-homogeneous types

WEEK 4 UNIT TEST-I

UNIT II FOURIER SERIES

Dirichlet's conditions – General Fourier series – Odd and even functions – Half range sine series

WEEK 5

Half range cosine series – Complex form of Fourier series,

WEEK 6

Parseval's identity – Harmonic analysis

UNIT TEST-II

WEEK 7

UNIT III APPLICATIONS OF PARTIAL DIFFERENTIAL EQUATIONS

Classification of PDE – Method of separation of variables - Solutions of one dimensional wave Equation

WEEK 8

One dimensional equation of heat conduction – Steady state solution of two dimensional

Equation of heat conduction (excluding insulated edges)

WEEK 9 &10 PRE MODEL EXAM

UNIT IV FOURIER TRANSFORMS

Statement of Fourier integral theorem – Fourier transforms pair

WEEK 11

Fourier sine, Cosine transforms – Properties, Transforms of simple functions

WEEK 12

Convolution theorem – Parseval's identity

UNIT TEST-IV

WEEK 13

UNIT V Z - TRANSFORMS AND DIFFERENCE EQUATIONS

Z- transforms - Elementary properties – Inverse Z - transform (using partial fraction and residues)

WEEK 14

Convolution theorem - Formation of difference equations

Solution of difference equations using Z – transform

WEEK-15,16 & 17- MODEL EXAM

TEXT BOOKS:

1. Veerarajan. T., "Transforms and Partial Differential Equations", Tata McGraw Hill Education Pvt.Ltd., New Delhi, Second reprint, 2012.
2. Grewal. B.S., "Higher Engineering Mathematics", 42nd Edition, Khanna Publishers, Delhi, 2012.
3. Narayanan.S, Manicavachagom Pillay.T.K and Ramanaiah.G "Advanced Mathematics for Engineering Students" Vol. II & III, S.Viswanathan Publishers Pvt Ltd.1998.

REFERENCES:

1. Bali.N.P and Manish Goyal, "A Textbook of Engineering Mathematics", 7th Edition, Laxmi Publications Pvt Ltd , 2007.
2. Ramana.B.V., "Higher Engineering Mathematics", Tata McGrawHill Publishing Company Limited, New Delhi, 2008.
3. Glyn James, "Advanced Modern Engineering Mathematics", 3rd Edition, Pearson Education, 2007.
4. Erwin Kreyszig, "Advanced Engineering Mathematics", 8th Edition, Wiley India, 2007.
5. Ray Wylie. C and Barrett.L.C, "Advanced Engineering Mathematics" Tata Mc Graw Hill Education Pvt Ltd, Sixth Edition, New Delhi, 2012.
6. Datta.K.B., "Mathematical Methods of Science and Engineering", Cengage Learning India Pvt Ltd, Delhi, 2013

EE6352 ELECTRICAL ENGINEERING AND INSTRUMENTATION

WEEK 1

UNIT I DC MACHINES

Three phase circuits, a review. Construction of DC machines – Theory of operation of DC generators

WEEK 2

Characteristics of DC generators- Operating principle of DC motors

WEEK 3

Types of DC motors and their characteristics – Speed control of DC motors- Applications

WEEK 4 UNIT TEST-I

UNIT II TRANSFORMER

Introduction – Single phase transformer construction and principle of operation – EMF equation of transformer-Transformer no-load phasor diagram

WEEK 5

Transformer on-load phasor diagram — Equivalent circuit of transformer – Regulation of transformer

WEEK 6

Transformer losses and efficiency-All day efficiency –auto transformers

UNIT TEST-II

WEEK 7

UNIT III LIPIDS

Principle of operation of three-phase induction motors – Construction – Types – Equivalent circuit –Construction of single-phase induction motors – Types of single phase induction motors – Double revolving field theory – starting methods

WEEK 8

Principles of alternator – Construction details – Types – Equation of induced EMF – Voltage regulation. Methods of starting of synchronous motors – Torque equation – V curves – Synchronous motors

WEEK 9&10 PRE MODEL

EXAM WEEK 10:

UNIT IV BASICS OF MEASUREMENT AND INSTRUMENTATION

Static and Dynamic Characteristics of Measurement – Errors in Measurement - Classification of Transducers – Variable resistive – Strain gauge, thermistor RTD – transducer

WEEK 11

Variable Capacitive Transducer – Capacitor Microphone - Piezo Electric Transducer

WEEK 12

Variable Inductive transducer – LVDT, RVDT

UNIT TEST-IV

WEEK 13

UNIT V ANALOG AND DIGITAL INSTRUMENTS

DVM, DMM – Storage Oscilloscope. Comparison of Analog and Digital Modes of operation, Application of measurement system, Errors

Measurement of R, L and C, Wheatstone

WEEK-14

Kelvin, Maxwell, Anderson, Schering and Wien bridges, Measurement of Inductance, Capacitance, Effective resistance at high frequency, Q-Meter

WEEK-15, 16&17- MODEL EXAM

TEXT BOOKS:

1. I.J Nagarath and Kothari DP, “Electrical Machines”, McGraw-Hill Education (India) Pvt Ltd 4th Edition ,2010
2. A.K.Sawhney, “A Course in Electrical & Electronic Measurements and Instrumentation”, Dhanpat Rai and Co, 2004.

REFERENCES:

1. Del Toro, “Electrical Engineering Fundamentals” Pearson Education, New Delhi, 2007.
2. W.D.Cooper & A.D.Helfrick, “Modern Electronic Instrumentation and Measurement Techniques”, 5th Edition, PHI, 2002.
3. John Bird, “Electrical Circuit Theory and Technology”, Elsevier, First Indian Edition, 2006.
4. Thereja .B.L, “Fundamentals of Electrical Engineering and Electronics”, S Chand & Co Ltd, 2008.

5. H.S.Kalsi, “Electronic Instrumentation”, Tata Mc Graw-Hill Education, 2004.
6. J.B.Gupta, “Measurements and Instrumentation”, S K Kataria & Sons, Delhi, 2003.

EC6301 OBJECT ORIENTED PROGRAMMING AND DATA STRUCTURES

WEEK 1

UNIT I DATA ABSTRACTION & OVERLOADING

Overview of C++ – Structures – Class Scope and Accessing Class Members – Reference Variables – Initialization – Constructors – Destructors

WEEK 2

Member Functions and Classes – Friend Function – Dynamic Memory Allocation – Static Class Members

WEEK 3

Container Classes and Integrators – Proxy Classes – Overloading: Function overloading and Operator Overloading

WEEK 4 UNIT TEST-I

UNIT II INHERITANCE & POLYMORPHISM

Base Classes and Derived Classes – Protected Members – Casting Class pointers and Member Functions – Overriding

WEEK 5

Public, Protected and Private Inheritance – Constructors and Destructors in derived Classes – Implicit Derived– Class Object To Base – Class Object Conversion – Composition Vs. Inheritance

WEEK 6

Virtual functions – This Pointer – Abstract Base Classes and Concrete Classes –Virtual Destructors – Dynamic Binding

WEEK 6 UNIT TEST-II

WEEK 7

UNIT III LINEAR DATA STRUCTURES

Abstract Data Types (ADTs) – List ADT – array-based implementation – linked list implementation — singly linked lists

WEEK 8

Polynomial Manipulation - Stack ADT – Queue ADT - Evaluating arithmetic expressions

WEEK 9&10 PRE MODEL EXAM

UNIT IV NON-LINEAR DATA STRUCTURES

Trees – Binary Trees – Binary tree representation and traversals –
Application of trees

WEEK 11

Set representation and Union-Find operations – Graph and its
representations – Graph Traversals

WEEK 12

Representation of Graphs – Breadth-first search – Depth-first search -
Connected components

UNIT TEST-IV

WEEK 13

UNIT V SORTING AND SEARCHING

Sorting algorithms: Insertion sort

WEEK 14

Quick sort - Merge sort, searching: Linear search –Binary Search

WEEK-15, 16 &17- MODEL EXAM

TEXT BOOKS:

1. Deitel and Deitel, “ C++, How To Program”, Fifth Edition, Pearson Education, 2005.
2. Mark Allen Weiss, “Data Structures and Algorithm Analysis in C++”, Third Edition, Addison- Wesley, 2007.

REFERENCES:

1. Bhushan Trivedi, “ Programming with ANSI C++, A Step-By-Step approach”, Oxford University Press, 2010.
2. Goodrich, Michael T., Roberto Tamassia, David Mount, “Data Structures and Algorithms in C++”, 7th Edition, Wiley. 2004.
3. Thomas H. Cormen, Charles E. Leiserson, Ronald L. Rivest and Clifford Stein, "Introduction to Algorithms", Second Edition, Mc Graw Hill, 2002.
4. Bjarne Stroustrup, “The C++ Programming Language”, 3rd Edition, Pearson Education, 2007.
5. Ellis Horowitz, Sartaj Sahni and Dinesh Mehta, Fundamentals of Data Structures in C++, Galgotia Publications, 2007.

EC6302 DIGITAL ELECTRONICS

WEEK 1

UNIT I MINIMIZATION TECHNIQUES AND LOGIC GATES

Minimization Techniques: Boolean postulates and laws – De-Morgan's Theorem - Principle of Duality - Boolean expression - Minimization of Boolean expressions — Minterm – Maxterm - Sum of Products (SOP) – Product of Sums (POS) – Karnaugh map Minimization – Don't care conditions – Quine - Mc Cluskey method of minimization

WEEK 2

Logic Gates: AND, OR, NOT, NAND, NOR, Exclusive-OR and Exclusive-NOR Implementations of Logic Functions using gates, NAND-NOR implementations – Multi 38 level gate implementations

WEEK 3

Multi output gate implementations. TTL and CMOS Logic and their characteristics – Tristate gates

WEEK 4 UNIT TEST-I

UNIT II COMBINATIONAL CIRCUITS

Design procedure – Half adder – Full Adder – Half subtractor – Full subtractor – Parallel binary adder, parallel binary Subtractor

WEEK 5

Fast Adder - Carry Look Ahead adder – Serial Adder/Subtractor - BCD adder – Binary Multiplier, Binary Divider - Multiplexer/ Demultiplexer – decoder - encoder – parity checker

WEEK 6

Parity generators – code converters - Magnitude Comparator

UNIT TEST-II

WEEK 7

UNIT III SEQUENTIAL CIRCUITS

Latches, Flip-flops - SR, JK, D, T, and Master-Slave – Characteristic table and equation –Application table – Edge triggering – Level Triggering – Realization of one flip flop using other flip flops – serial adder/subtractor- Asynchronous Ripple or serial counter – Asynchronous Up/Down counter - Synchronous counters – Synchronous Up/Down counters

WEEK 8

Programmable counters – Design of Synchronous counters: state diagram- State table –State minimization –State assignment - Excitation table and

maps-Circuit implementation - Modulo-n counter, Registers – shift registers - Universal shift registers – Shift register counters – Ring counter – Shift counters - Sequence generators

WEEK 9 & 10 PRE MODEL EXAM

UNIT IV MEMORY DEVICES

Classification of memories – ROM - ROM organization - PROM – EPROM – EEPROM –EAPROM, RAM – RAM organization –

WEEK 11

Write operation – Read operation – Memory cycle - Timing wave forms – Memory decoding – memory expansion – Static RAM Cell- Bipolar RAM cell, MOSFET RAM cell – Dynamic RAM cell –Programmable Logic Devices – Programmable Logic Array (PLA)

WEEK 12

Programmable Array Logic (PAL) – Field Programmable Gate Arrays (FPGA) - Implementation of combinational logic circuits using ROM, PLA, PAL

UNIT TEST- IV WEEK13

UNIT V SYNCHRONOUS AND ASYNCHRONOUS SEQUENTIAL CIRCUITS

Synchronous Sequential Circuits: General Model – Classification – Design – Use of Algorithmic State Machine – Analysis of Synchronous Sequential Circuits, **Asynchronous Sequential Circuits:** Design of fundamental mode and pulse mode circuits

WEEK-14

Incompletely specified State Machines, Problems in Asynchronous Circuits – Design of Hazard Free Switching circuits. Design of Combinational and Sequential circuits using VERILOG.

WEEK-15, 16 & 17- MODEL EXAM

TEXT BOOK:

1. M. Morris Mano, “Digital Design”, 4th Edition, Prentice Hall of India Pvt. Ltd., 2008 / Pearson Education (Singapore) Pvt. Ltd., New Delhi, 2003

REFERENCES:

1. John F.Wakerly, “Digital Design”, Fourth Edition, Pearson/PHI, 2008

2. John.M Yarbrough, “Digital Logic Applications and Design”, Thomson Learning, 2006.
3. Charles H.Roth. “Fundamentals of Logic Design”, 6th Edition, Thomson Learning, 2013.
4. Donald P.Leach and Albert Paul Malvino, “Digital Principles and Applications”, 6th Edition, TMH, 2006.
5. Thomas L. Floyd, “Digital Fundamentals”, 10th Edition, Pearson Education Inc, 2011
6. Donald D.Givone, “Digital Principles and Design”, TMH, 2003

EC6303 SIGNALS AND SYSTEMS

WEEK 1

UNIT I CLASSIFICATION OF SIGNALS AND SYSTEMS

Continuous time signals (CT signals) - Discrete time signals (DT signals) - Step, Ramp, Pulse, Impulse, Sinusoidal, Exponential, Classification of CT and DT signals - Periodic & Aperiodic signals, Deterministic & Random signals

WEEK 2

Energy & Power signals - CT systems and DT systems- Classification of systems – Static & Dynamic, Linear & Nonlinear

WEEK 3

Time-variant & Time-invariant, Causal & Noncausal, Stable & Unstable

WEEK 4 UNIT TEST-I

UNIT II ANALYSIS OF CONTINUOUS TIME SIGNALS

Fourier series analysis-spectrum of Continuous Time (CT) signals

WEEK 5

Fourier and Laplace Transforms in CT Signal Analysis

WEEK 6

Fourier and Laplace Transforms Properties

UNIT TEST-II

WEEK 7

UNIT III LINEAR TIME INVARIANT- CONTINUOUS TIME SYSTEMS

Differential Equation-Block diagram representation-impulse response, convolution integrals

WEEK 8

Fourier and Laplace transforms in Analysis of CT systems

WEEK 9 & 10 PRE MODEL EXAM

UNIT IV ANALYSIS OF DISCRETE TIME SIGNALS

Baseband Sampling - DTFT

WEEK 11

Properties of DTFT, Z Transform

WEEK 12

Properties of Z Transform

UNIT TEST-IV

WEEK13

UNIT V LINEAR TIME INVARIANT-DISCRETE TIME SYSTEMS

Difference Equations-Block diagram representation-Impulse response

WEEK 14

Convolution sum- Discrete Fourier, Z Transform Analysis of Recursive & Non-Recursive systems

WEEK-15, 16 & 17- MODEL EXAM

TEXT BOOK:

1. Allan V.Oppenheim, S.Wilsky and S.H.Nawab, “Signals and Systems”, Pearson, 2007

REFERENCES:

1. B. P. Lathi, “Principles of Linear Systems and Signals”, Second Edition, Oxford, 2009.
2. R.E.Zeimer, W.H.Tranter and R.D.Fannin, “Signals & Systems - Continuous and Discrete”, Pearson, 2007.
3. John Alan Stuller, “An Introduction to Signals and Systems”, Thomson, 2007.
4. M.J.Roberts, “Signals & Systems Analysis using Transform Methods & MATLAB”, Tata McGraw Hill, 2007.

EC6304 ELECTRONIC CIRCUITS – I

WEEK 1

UNIT I BIASING OF DISCRETE BJT AND MOSFET

DC Load line, operating point, Various biasing methods for BJT-Design-Stability

WEEK 2

Stability-Bias compensation, Thermal stability

WEEK 3

Design of biasing for JFET, Design of biasing for MOSFET.

WEEK 4 UNIT TEST-I

UNIT II BJT AMPLIFIERS

Small signal Analysis of Common Emitter-AC Loadline, Voltage swing limitations

WEEK 5

Common collector and common base amplifiers – Differential amplifiers, CMRR- Darlington Amplifier- Bootstrap technique

WEEK 6

Cascaded stages - Cascode Amplifier

WEEK 6 UNIT TEST-II

WEEK 7

UNIT III JFET AND MOSFET AMPLIFIERS

Small signal analysis of JFT amplifiers- Small signal Analysis of MOSFET and JFET, Common source amplifier, Voltage swing limitations, Small signal analysis of MOSFET

WEEK 8

JFET Source follower and Common Gate amplifiers, - BiMOS Cascode amplifier

WEEK 9& 10 UNIT TEST-III

UNIT IV FREQUENCY ANALYSIS OF BJT AND MOSFET AMPLIFIERS

Low frequency and Miller effect, High frequency analysis of CE and **WEEK 11**

MOSFET CS amplifier , Short circuit current gain, cut off frequency
 F_α And F_β unity gain

WEEK 12

Determination of bandwidth of single stage and multistage amplifiers

UNIT TEST-IV

WEEK 13

UNIT V IC MOSFET AMPLIFIERS

IC Amplifiers- IC biasing Current steering circuit using MOSFET- MOSFET current sources, PMOS and NMOS current sources. Amplifier with active loads - enhancement load, Depletion load

WEEK 14

PMOS and NMOS current sources load- CMOS common source and source follower- CMOS differential amplifier- CMRR

WEEK-15, 16 & 17 - MODEL EXAM TEXT BOOK:

1. Donald .A. Neamen, Electronic Circuit Analysis and Design –2nd Edition, Tata Mc Graw Hill, 2009.

REFERENCES:

1. Adel .S. Sedra, Kenneth C. Smith, “Micro Electronic Circuits”, 6th Edition, Oxford University Press, 2010. 41
2. David A., “Bell Electronic Devices and Circuits”, Oxford Higher Education Press, 5th Editon, 2010
3. Behzad Razavi, “Design of Analog CMOS Integrated Circuits”, Tata Mc Graw Hill, 2007.
4. Paul Gray, Hurst, Lewis, Meyer “Analysis and Design of Analog Integrated Circuits”, 4thEdition ,John Willey & Sons 2005
5. Millman.J. and Halkias C.C, “Integrated Electronics”, Mc Graw Hill, 2001.
6. D.Schilling and C.Belove, “Electronic Circuits”, 3rd Edition, Mc Graw Hill, 1989.

EC6311 ANALOG AND DIGITAL CIRCUITS LABORATORY

LIST OF ANALOG EXPERIMENTS:

1. Frequency Response of CE / CB / CC amplifier
2. Frequency response of CS Amplifiers
3. Darlington Amplifier
4. Differential Amplifiers- Transfer characteristic.
5. CMRR Measurement
6. Cascode / Cascade amplifier
7. Determination of bandwidth of single stage and multistage amplifiers
8. Spice Simulation of Common Emitter and Common Source amplifiers

LIST OF DIGITAL EXPERIMENTS

9. Design and implementation of code converters using logic gates
(i) BCD to excess-3 code and vice versa (ii) Binary to gray and vice-versa
10. Design and implementation of 4 bit binary Adder/ Subtractor and BCD adder using IC 7483
11. Design and implementation of Multiplexer and De-multiplexer using logic gates
12. Design and implementation of encoder and decoder using logic gates
13. Construction and verification of 4 bit ripple counter and Mod-10 / Mod-12 Ripple counters
14. Design and implementation of 3-bit synchronous up/down counter
15. Implementation of SISO, SIPO, PISO and PIPO shift registers using Flip- flops

EC6312 OOPS AND DATA STRUCTURES LABORATORY

LIST OF EXPERIMENTS:

1. Basic Programs for C++ Concepts
2. Array implementation of List Abstract Data Type (ADT)
3. Linked list implementation of List ADT
4. Cursor implementation of List ADT
5. Stack ADT - Array and linked list implementations
6. The next two exercises are to be done by implementing the following source files
 - i. Program source files for Stack Application 1
 - ii. Array implementation of Stack ADT
 - iii. Linked list implementation of Stack ADT

- iv. Program source files for Stack Application 2
 - v. An appropriate header file for the Stack ADT should be included in (i) and (iv)
7. Implement any Stack Application using array implementation of Stack ADT (by implementing files (i) and (ii) given above) and then using linked list
 8. Implementation of Stack ADT (by using files (i) and implementing file (iii))
 9. Implement another Stack Application using array and linked list implementations of Stack ADT (by implementing files (iv) and using file (ii), and then by using files (iv) and (iii))
 10. Queue ADT – Array and linked list implementations
 11. Search Tree ADT - Binary Search Tree
 12. Implement an interesting application as separate source files and using any of the searchable ADT files developed earlier. Replace the ADT file alone with other appropriate ADT files. Compare the performance
 13. Quick Sort
