



VEL TECH MULTI TECH Dr RANGARAJAN Dr.SAKUNTHALA ENGINEERING COLLEGE

(An ISO 9001: 2008 Certified Institution)

(Owned by Vel Trust)

(Approved by Govt. of Tamil Nadu and affiliated to Anna University and
Accredited by NBA, New Delhi)



SYLLABUS

WEEKLY SCHEDULE

III SEMESTER 2014 - 2015

DEPARTMENT OF INFORMATION TECHNOLOGY

IV YEAR DEGREE COURSE

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WEEK DETAILS

SL.NO.	WEEK	FROM	TO
1	WEEK1	24-06-2014	27-06-2014
2	WEEK2	30-06-2014	04-07-2014
3	WEEK3	07-07-2014	11-07-2014
4	WEEK4	14-07-2014	18-07-2014
5	WEEK5	21-07-2014	25-07-2014
6	WEEK6	28-07-2014	01-08-2014
7	WEEK7	04-08-2014	08-08-2014
8	WEEK8	11-08-2014	14-08-2014
9	WEEK9	18-08-2014	22-08-2014
10	WEEK10	25-08-2014	28-08-2014
11	WEEK11	01-09-2014	05-09-2014
12	WEEK12	08-09-2014	12-09-2014
13	WEEK13	15-09-2014	19-09-2014
14	WEEK14	22-09-2014	26-09-2014
15	WEEK15	29-09-2014	01-10-2014
16	WEEK16	06-10-2014	10-10-2014
17	WEEK17	13-10-2014	17-10-2014
18	WEEK18	20-10-2014	24-10-2014
19	WEEK19	27-10-2014	31-10-2014

SUBJECT CONTENTS

SL.N O	SUBJECT CODE	SUBJECT NAME
THEORY		
1	MA6351	Transforms and Partial Differential Equations
2	CS6301	Programming and Data structures -II
3	CS6302	Database Management Systems
4	CS6303	Computer Architecture
5	CS6304	Analog and Digital Communication
6	GE6351	Environmental science and Engg
PRACTICAL		
7	IT6311	Programming and Data structures Laboratory-II
8	IT6312	Database Management Systems Laboratory
9	IT6313	Digital Communication Laboratory

TEST / EXAM SCHEDULE

SL.NO	SUBJECT CODE	SUBJECT NAME	UNIT TEST I	UNIT TEST II	UNIT TEST III	UNIT TEST IV	UNIT TEST V
1	MA6351	Transforms and Partial Differential Equations	08/07/14 FN	30/07/14 FN	20/08/14 FN	09/09/14 FN	29/09/14 FN
2	CS6301	Programming and Data structures -II	08/07/14 AN	30/07/14 AN	20/08/14 AN	09/09/14 AN	29/09/14 AN
3	CS6302	Database Management Systems	09/07/14 FN	31/07/14 FN	21/08/14 FN	10/09/14 FN	30/09/14 FN
4	CS6303	Computer Architecture	09/07/14 AN	31/07/14 AN	21/08/14 AN	10/09/14 AN	30/09/14 AN
5	CS6304	Analog and Digital Communication	10/07/14 FN	01/08/14 FN	22/08/14 FN	11/09/14 FN	01/10/14 FN
6	GE6351	Environmental science and Engg	10/07/14 AN	01/08/14 AN	22/08/14 AN	11/09/14 AN	01/10/14 AN

SL.NO	SUBJECT CODE	SUBJECT NAME	MODEL EXAM
1	MA6351	Transforms and Partial Differential Equations	13-10-2014
2	CS6301	Programming and Data structures -II	14-10-2014
3	CS6302	Database Management Systems	15-10-2014
4	CS6303	Computer Architecture	16-10-2014
5	CS6304	Analog and Digital Communication	17-10-2014
6	GE6351	Environmental science and Engg	20-10-2014

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

WEEK 7 UNIT TEST-II

WEEK 8

UNIT III APPLICATIONS OF PARTIAL DIFFERENTIAL EQUATIONS

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

WEEK 9

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

Equation of heat conduction (excluding insulated edges)

WEEK 10 UNIT TEST-III

UNIT IV FOURIER TRANSFORMS

Statement of Fourier integral theorem – Fourier transforms pair –
Fourier sine

WEEK 11

Cosine transforms – Properties

WEEK 12

Transforms of simple functions – Convolution theorem – Parseval's identity

WEEK 13 UNIT TEST-IV

WEEK 14

UNIT V Z - TRANSFORMS AND DIFFERENCE EQUATIONS

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

WEEK 15

Convolution theorem - Formation of difference equations

WEEK-16

Solution of difference equations using Z – transform

WEEK-17- UNIT TEST V

WEEK-18- 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

CS6301PROGRAMMING AND DATA STRUCTURES -II

WEEK 1: UNIT I OBJECT ORIENTED PROGRAMMING FUNDAMENTALS

C++ Programming features - Data Abstraction - Encapsulation - class - object - constructors - static members

WEEK 2:

Constant members – member functions – pointers – references

WEEK 3:

Role of **this** pointer – Storage classes – function as arguments.

WEEK 4: UNIT TEST-I

UNIT II OBJECT ORIENTED PROGRAMMING CONCEPTS

String Handling – Copy Constructor - Polymorphism – compile time and run time polymorphisms – function overloading

WEEK 5:

Operators overloading – dynamic memory allocation - Nested classes - Inheritance – virtual functions.

WEEK 6: UNIT TEST-II

WEEK 7: UNIT III C++ PROGRAMMING ADVANCED FEATURES

Abstract class – Exception handling - Standard libraries - Generic Programming - templates – class template

WEEK 8:

Function template – STL – containers – iterators – function adaptors

WEEK 9:

Allocators - Parameterizing the class - File handling concepts.

WEEK 10: UNIT TEST-III

UNIT IV ADVANCED NON-LINEAR DATA STRUCTURES

AVL trees – B-Trees – Red-Black trees – Splay trees - Binomial Heaps

WEEK 11:

Fibonacci Heaps – Disjoint Sets – Amortized Analysis

WEEK 12:

Accounting method – potential method – aggregate analysis

WEEK 13: UNIT TEST-IV

WEEK 14: REVISION CLASSES (UNIT 1- IV)

WEEK 15: UNIT V GRAPHS

Representation of Graphs – Breadth-first search – Depth-first search – Topological sort – Minimum Spanning Trees – Kruskal and Prim algorithm

WEEK 16:

Shortest path algorithm – Dijkstra’s algorithm – Bellman-Ford algorithm – Floyd-Warshall algorithm.

WEEK 17: REVISION UNIT -V

WEEK 18: MODEL EXAM

WEEK 19:

ICD CLASSES & MODEL PRACTICAL EXAM

WEEK-17- UNIT TEST V

WEEK-18- MODEL EXAM

Text Books:

1. Bjarne Stroustrup, “The C++ Programming Language”, 3rd Edition, Pearson Education, 2007.

2. Mark Allen Weiss, “Data Structures and Algorithm Analysis in C++”, 2nd Edition, Pearson Education, 2005.

REFERENCES:

1. Thomas H. Cormen, Charles E. Leiserson, Ronald L. Rivest and Clifford Stein, "Introduction to Algorithms", Second Edition, McGraw Hill, 2002.

2. Michael T Goodrich, Roberto Tamassia, David Mount, “Data Structures and Algorithms in C++”, 7th Edition, Wiley Publishers, 2004.

CS6302 DATABASE MANAGEMENT SYSTEMS

WEEK 1: UNIT I INTRODUCTION TO DBMS

File Systems Organization - Sequential, Pointer, Indexed, Direct - Purpose of Database System- Database System Terminologies- Database characteristics- Data models – Types of data models – Components of DBMS

WEEK 2:

Relational Algebra. Logical Database Design: Relational DBMS - Codd's Rule - Entity-Relationship model

WEEK 3:

Extended ER Normalization – Functional Dependencies, Anomaly- 1NF to 5NF- Domain Key Normal Form – Denormalization

WEEK 4: UNIT TEST-I

UNIT II SQL & QUERY OPTIMIZATION

SQL Standards - Data types - Database Objects- DDL-DML-DCL- TCL-Embedded SQL-Static Vs Dynamic SQL

WEEK 5:

QUERY OPTIMIZATION: Query Processing and Optimization - Heuristics and Cost Estimates in Query Optimization

WEEK 6: UNIT TEST-II

WEEK 7: UNIT III TRANSACTION PROCESSING AND CONCURRENCY CONTROL

Introduction-Properties of Transaction- Serializability

WEEK 8:

Concurrency Control – Locking Mechanisms

WEEK 9:

Two Phase Commit Protocol-Dead lock

WEEK 10: UNIT TEST-III

UNIT IV TRENDS IN DATABASE TECHNOLOGY Overview of Physical Storage Media – Magnetic Disks – RAID – Tertiary storage – File Organization – Organization of Records in Files

WEEK 11

Indexing and Hashing –Ordered Indices – B+ tree Index Files – B tree Index Files – Static Hashing – Dynamic Hashing - Introduction to Distributed Databases- Client server technology

WEEK 12:

Multidimensional and parallel databases- Spatial and multimedia databases- Mobile and web databases- Data Warehouse-Mining- Data marts

WEEK 13: UNIT TEST-IV

WEEK 14: REVISION CLASSES (UNIT 1- IV)

WEEK 15: UNIT V ADVANCED TOPICS

DATABASE SECURITY: Data Classification-Threats and risks – Database access Control – Types of Privileges –Cryptography- Statistical Databases.- Distributed Databases-Architecture- Transaction Processing

WEEK 16:

Data Warehousing and Mining-Classification-Association rules- Clustering-Information Retrieval- Relevance ranking-Crawling and Indexing the Web- Object Oriented Databases-XML Databases.

WEEK-17- UNIT TEST V

WEEK-18- MODEL EXAM

WEEK 19:

ICD CLASSES & MODEL PRACTICAL EXAM

TEXT BOOKS:

1. Ramez Elmasri and Shamkant B. Navathe, “Fundamentals of Database Systems”, Fifth Edition, Pearson Education, 2008.

REFERENCE:

1. Abraham Silberschatz, Henry F. Korth and S. Sudharshan, "Database System Concepts", Sixth Edition, Tata McGraw Hill, 2011.
2. C.J.Date, A.Kannan and S.Swamynathan, "An Introduction to Database Systems", Eighth Edition, Pearson Education, 2006.
3. Atul Kahate, "Introduction to Database Management Systems", Pearson Education, New Delhi, 2006.
4. Alexis Leon and Mathews Leon, "Database Management Systems", Vikas Publishing House Private Limited, New Delhi, 2003.
5. Raghu Ramakrishnan, "Database Management Systems", Fourth Edition, Tata McGraw Hill, 2010.
6. G.K.Gupta, "Database Management Systems", Tata McGraw Hill, 2011.
7. Rob Cornell, "Database Systems Design and Implementation", Cengage Learning, 2011.

CS6303 COMPUTER ARCHITECTURE

WEEK 1: UNIT I OVERVIEW & INSTRUCTIONS

Eight ideas – Components of a computer system – Technology – Performance

WEEK 2:

Power wall – Uniprocessors to multiprocessors; Instructions – operations and operands

WEEK 3:

Representing instructions – Logical operations – control operations – Addressing and addressing modes.

WEEK 4: UNIT TEST-I

UNIT II ARITHMETIC OPERATIONS

ALU - Addition and subtraction – Multiplication – Division

WEEK 5:

Floating Point operations – Subword parallelism.

WEEK 6: UNIT TEST-II

WEEK 7: UNIT III PROCESSOR AND CONTROL UNIT

Basic MIPS implementation – Building data path

WEEK 8:

Control Implementation scheme – Pipelining – Pipelined datapath and control

WEEK 9:

Handling Data hazards & Control hazards – Exceptions

WEEK 10: UNIT TEST-III

UNIT IV PARALLELISM

Instruction-level-parallelism – Parallel processing challenges

WEEK 11:

Flynn's classification – Hardware multithreading

WEEK 12:

Multicore processors.

WEEK 13: UNIT TEST-IV

WEEK 14: REVISION CLASSES (UNIT 1- IV)

WEEK 15: UNIT V MEMORY AND I/O SYSTEMS

Memory hierarchy - Memory technologies – Cache basics – Measuring and improving cache performance

WEEK 16:

Virtual memory, TLBs - Input/output system, programmed I/O, DMA and interrupts, I/O processors.

WEEK-17- UNIT TEST V

WEEK-18- MODEL EXAM

WEEK 19:

ICD CLASSES & MODEL PRACTICAL EXAM

TEXT BOOK:

1. David A. Patterson and John L. Hennessey, “Computer organization and design, Morgan auffman / Isevier, Fifth edition, 2014.

REFERENCES:

1. V.Carl Hamacher, Zvonko G. Varanesic and Safat G. Zaky, “Computer Organisation“, VI edition, McGraw-Hill Inc, 2012.

2. William Stallings “Computer Organization and Architecture”, Seventh Edition, Pearson Education, 2006.
3. Vincent P. Heuring, Harry F. Jordan, “Computer System Architecture”, Second Edition, Pearson Education, 2005.
4. Govindarajalu, “Computer Architecture and Organization, Design Principles and Applications”, first edition, Tata McGraw Hill, New Delhi, 2005.
5. John P. Hayes, “Computer Architecture and Organization”, Third Edition, Tata McGraw Hill, 1998.
6. <http://nptel.ac.in/>.

CS6304 ANALOG AND DIGITAL COMMUNICATION

WEEK 1: UNIT I ANALOG COMMUNICATION

Noise: Source of Noise - External Noise- Internal Noise- Noise Calculation. Introduction to Communication Systems

WEEK 2:

Modulation – Types - Need for Modulation. Theory of Amplitude Modulation - Evolution and Description of SSB Techniques

WEEK 3:

Theory of Frequency and Phase Modulation – Comparison of various Analog Communication System (AM – FM – PM).

WEEK 4: UNIT TEST-I

UNIT II DIGITAL COMMUNICATION

Amplitude Shift Keying (ASK) – Frequency Shift Keying (FSK) Minimum Shift Keying (MSK) –Phase Shift Keying (PSK) – BPSK – QPSK – 8 PSK – 16 PSK

WEEK 5:

Quadrature Amplitude Modulation (QAM) – 8 QAM – 16 QAM – Bandwidth Efficiency– Comparison of various Digital Communication System (ASK – FSK – PSK – QAM).

WEEK 6: UNIT TEST-II

WEEK 7: UNIT III DATA AND PULSE COMMUNICATION

Data Communication: History of Data Communication - Standards Organizations for Data Communication- Data Communication Circuits

WEEK 8:

Data Communication Codes - Error Detection and Correction Techniques - Data communication Hardware - serial and parallel interfaces. Pulse Communication: Pulse Amplitude Modulation (PAM)

WEEK 9:

Pulse Time Modulation (PTM) – Pulse code Modulation (PCM) - Comparison of various Pulse Communication System (PAM – PTM – PCM).

WEEK 10: UNIT TEST-III

UNIT IV SOURCE AND ERROR CONTROL CODING

Entropy, Source encoding theorem, Shannon fano coding, Huffman coding

WEEK 11:

mutual information, channel capacity, channel coding theorem, Error Control Coding

WEEK 12:

linear block codes, cyclic codes, convolution codes, viterbi decoding algorithm.

WEEK 13: UNIT TEST-IV

WEEK 14: REVISION CLASSES (UNIT 1- IV)

WEEK 15: UNIT V MULTI-USER RADIO COMMUNICATION

Advanced Mobile Phone System (AMPS) - Global System for Mobile Communications (GSM) - Code division multiple access (CDMA)

WEEK 16:

Cellular Concept and Frequency Reuse - Channel Assignment and Hand off - Overview of Multiple Access Schemes - Satellite Communication - Bluetooth.

WEEK-17- UNIT TEST V
WEEK-18- MODEL EXAM

WEEK 19:
ICD CLASSES & MODEL PRACTICAL EXAM

TEXT BOOK:

1.Wayne Tomasi, “Advanced Electronic Communication Systems”, 6th Edition, Pearson Education, 2009.

REFERENCES:

- 1.Simon Haykin, “Communication Systems”, 4th Edition, John Wiley & Sons, 2004
2. Rappaport T.S, "Wireless Communications: Principles and Practice", 2nd Edition, Pearson Education, 2007
3. H.Taub, D L Schilling and G Saha, “Principles of Communication”, 3rd Edition, Pearson Education, 2007.
4. B. P.Lathi, “Modern Analog and Digital Communication Systems”, 3rd Edition, Oxford University Press, 2007.
5. Blake, “Electronic Communication Systems”, Thomson Delmar Publications, 2002.
6. Martin S.Roden, “Analog and Digital Communication System”, 3rd Edition, Prentice Hall of India, 2002.
7. B.Sklar, “Digital Communication Fundamentals and Applications” 2nd Edition Pearson Education 2007.

GE6351 ENVIRONMENTAL SCIENCE AND ENGG

WEEK 1: UNIT-1 ENVIRONMENT, ECOSYSTEMS AND BIODIVERSITY

Definition, scope and importance of Risk and hazards; Chemical hazards, Physical hazards, Biological hazards in the environment –

concept of an ecosystem – structure and function of an ecosystem – producers, consumers and decomposers-Oxygen cycle and Nitrogen cycle – energy flow in the ecosystem – ecological succession processes – Introduction, types, characteristic features, structure and function of the (a) forest ecosystem (b) grassland ecosystem (c) desert ecosystem (d) aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries)

WEEK 2:

Introduction to biodiversity definition: genetic, species and ecosystem diversity – biogeographical classification of India – value of biodiversity: consumptive use, productive use, social, ethical, aesthetic and option values – Biodiversity at global, national and local levels – India as a mega-diversity nation – hot-spots of biodiversity – threats to biodiversity: habitat loss, poaching of wildlife

WEEK 3: UNIT TEST-I

man-wildlife conflicts – endangered and endemic species of India – conservation of biodiversity: In-situ and ex-situ conservation of biodiversity. Field study of common plants, insects, birds Field study of simple ecosystems – pond, river, hill slopes, etc.

WEEK 4: UNIT II ENVIRONMENTAL POLLUTION

Definition – causes, effects and control measures of: (a) Air pollution (Atmospheric chemistry- Chemical composition of the atmosphere; Chemical and photochemical reactions in the atmosphere - formation of smog, PAN, acid rain, oxygen and ozone chemistry;- Mitigation procedures- Control of particulate and gaseous emission, Control of SO₂, NO_x, CO and HC) (b) Water pollution : Physical and chemical properties of terrestrial and marine water and their environmental significance; Water quality parameters – physical, chemical and biological

WEEK 5:

absorption of heavy metals - Water treatment processes. (c) Soil pollution - soil waste management: causes, effects and control measures of municipal solid wastes – (d) Marine pollution (e) Noise

pollution (f) Thermal pollution (g) Nuclear hazards—role of an individual in prevention of pollution – pollution case studies – Field study of local polluted site – Urban / Rural / Industrial / Agricultural.

WEEK 6: UNIT TEST-II

WEEK 7: UNIT III NATURAL RESOURCES

Forest resources: Use and over-exploitation, deforestation, case studies- timber extraction, mining, dams and their effects on forests and tribal people – Water resources: Use and overutilization of surface and ground water, dams-benefits and problems – Mineral resources: Use and exploitation, environmental effects of extracting and using mineral resources, case studies – Food resources: World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging

WEEK 8:

Salinity, case studies – Energy resources: Growing energy needs, renewable and non renewable energy sources, use of alternate energy sources. Energy Conversion processes – Biogas – production and uses, anaerobic digestion; case studies – Land resources: Land as a resource, land degradation, man induced landslides, soil erosion and desertification – role of an individual in conservation of natural resources

WEEK 9:

Equitable use of resources for sustainable lifestyles. Introduction to Environmental Biochemistry: Proteins –Biochemical degradation of pollutants, Bioconversion of pollutants. Field study of local area to document environmental assets – river / forest / grassland / hill / mountain.

WEEK 10: UNIT TEST-III

UNIT IV SOCIAL ISSUES AND THE ENVIRONMENT

From unsustainable to sustainable development – urban problems related to energy – water conservation, rain water harvesting, watershed management – resettlement and rehabilitation of people; its

problems and concerns, case studies – role of non-governmental organization- environmental ethics: Issues and possible solutions – 12 Principles of green chemistry- nuclear accidents and holocaust

WEEK 11:

Case studies. – wasteland reclamation – consumerism and waste products – environment production act – Air act – Water act – Wildlife protection act – Forest conservation act –The Biomedical Waste (Management and Handling) Rules; 1998 and amendments- scheme of labeling of environmentally friendly products (Ecomark).

WEEK 12:

Enforcement machinery involved in environmental legislation- central and state pollution control boards- disaster management: floods, earthquake, cyclone and landslides. Public awareness.

WEEK 13: UNIT TEST-IV

WEEK 14: REVISION CLASSES (UNIT 1- IV)

WEEK 15: UNIT V HUMAN POPULATION AND THE ENVIRONMENT

Population growth, variation among nations – population explosion – family welfare programme – environment and human health – human rights – value education

WEEK 16:

HIV / AIDS – women and child welfare –Environmental impact analysis (EIA)- -GIS-remote sensing-role of information technology in environment and human health – Case studies.

WEEK-17- UNIT TEST V

WEEK-18- MODEL EXAM

WEEK 19:

ICD CLASSES & MODEL PRACTICAL EXAM

TEXT BOOKS:

1. Gilbert M.Masters, „Introduction to Environmental Engineering and Science“, 2nd Edition, Pearson Education 2004.
2. Benny Joseph, „Environmental Science and Engineering“, Tata McGraw-Hill, New Delhi, 2006.

REFERENCES:

- 1.R.K. Trivedi, „Handbook of Environmental Laws, Rules, Guidelines, Compliances and Standards“, Vol. I and II, Enviro Media.
2. Cunningham, W.P. Cooper, T.H. Gorhani, “Environmental Encyclopedia”, Jaico Publ., House, Mumbai, 2001.
3. Dharmendra S. Sengar, „Environmental law“, Prentice hall of India PVT LTD, New Delhi, 2007.
4. Rajagopalan, R, „Environmental Studies-From Crisis to Cure“, Oxford University Press 2005

IT6311 PROGRAMMING AND DATA STRUCTURE LTPC LABORATORY II

1. Constructors & Destructors, Copy Constructor.
2. Friend Function & Friend Class.
3. Inheritance.
4. Polymorphism & Function Overloading.
5. Virtual Functions.
6. Overload Unary & Binary Operators Both as Member Function & Non Member Function.
7. Class Templates & Function Templates.
8. Exception Handling Mechanism.
9. Standard Template Library concept.
10. File Stream classes.
11. Applications of Stack and Queue
12. Binary Search Tree
13. Tree traversal Techniques
14. Minimum Spanning Trees
15. Shortest Path Algorithms

IT6312 DATABASE MANAGEMENT SYSTEMS LABORATORY

1. Creation of a database and writing SQL queries to retrieve information from the database.
2. Performing Insertion, Deletion, Modifying, Altering, Updating and Viewing records based on conditions.
3. Creation of Views, Synonyms, Sequence, Indexes, save point.
4. Creating an Employee database to set various constraints.
5. Creating relationship between the databases.
6. Study of PL/SQL block.
7. Write a PL/SQL block to satisfy some conditions by accepting input from the user.
8. Write a PL/SQL block that handles all types of exceptions.
9. Creation of Procedures.
10. Creation of database triggers and functions
11. Mini project (Application Development using Oracle/ Mysql)
 - a) Inventory Control System
 - b) Material Requirement Processing.
 - c) Hospital Management System.
 - d) Railway Reservation System.
 - e) Personal Information System.
 - f) Web Based User Identification System.
 - g) Timetable Management System.
 - h) Hotel Management System

IT6313 DIGITAL COMMUNICATION LABORATORY

1. Signal Sampling and reconstruction
2. Amplitude modulation and demodulation
3. Frequency modulation and demodulation
4. Pulse code modulation and demodulation.
5. Delta modulation, adaptive delta Modulation

6. Line Coding Schemes
7. BFSK modulation and Demodulation (Hardware (Kit based) & Simulation using MATLAB / SCILAB / Equivalent)
8. BPSK modulation and Demodulation (Hardware& Simulation using MATLAB/SCILAB/ Equivalent)
9. FSK, PSK and DPSK schemes (Simulation)
10. Error control coding schemes (Simulation)
11. Spread spectrum communication (Simulation)
12. Communication link simulation
13. TDM and FDM