VASAVI COLLEGE OF ENGINEERING(AUTONOMOUS)
Ibrahimbagh, Hyderabad-31

Approved by A.I.C.T.E., New Delhi and
Affiliated to Osmania University, Hyderabad-07

Sponsored by
VASAVI ACADEMY OF EDUCATION
Hyderabad

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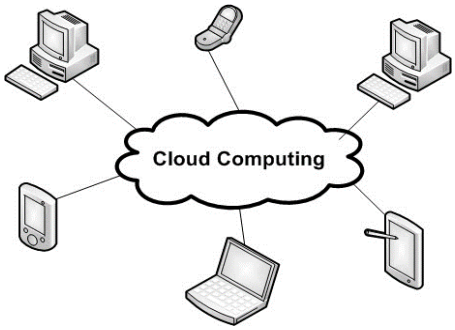
STUDENT HAND BOOK 2016 – 2017

Academic Regulations (Autonomous) and Syllabi of SECOND YEAR B.E(IT)



DEPARTMENT OFINFORMATION TECHNOLOGY
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DEPARTMENT MISSION

DEPARTMENT VISION

E - JOURNALS & E-BOOKS SUBSCRIBED	
ASCE	35
ASME	27
IEEE ASPP	155
ACM Digital Library	1138
Springer Mechanical	49
Total GIST E-Journals	1405
DELNET CONSORTIUM (IESTC E-Journals -2016)	1152
DELNET E-Journals	817
Total e-journals	3374
DELNET MEMBERSHIP E-Books	335
Journals and magazines Print version	106

ABOUT THE COLLEGE

VISION

Striving for a symbiosis of technological excellence and human values

Established in 1981 by Vasavi Academy of Education under the stewardship of Late Sri Pendekanti Venkata Subbaiah, a veteran statesman of independent India and by a few eminent people from different walks of life Vasavi College of Engineering represents a rich tradition of excellence in technology based education in a stimulating environment. From a modest beginning with just three undergraduate programs, viz., B.E. degree programs in Civil, Mechanical and Electronics & Communication Engineering, with dedicated efforts for over **33** years, it has now grown into a mighty center of learning with excellent and well-developed infrastructural facilities, offering 6 undergraduate programs, viz., B.E. in Civil, Mechanical, Electrical & Electronics, Electronics & Communication Engineering, Computer Science & Engineering, and Information Technology, in addition to a 3-year postgraduate program in Computer Applications (MCA), and 2-Year Postgraduate Programmes in CSE, ECE, EEE and Mechanical Engineering.

MISSION

To arm the young brains with competitive technology and nurture the holistic development of the individuals for a better tomorrow.

All the undergraduate (B.E) programs were accredited by National Board of Accreditation (NBA) for the academic years 2013-2015. The college sought fresh approval for NBA accreditation for two eligible PG programs and MCA program. The college has been recognized under 12(B) and 2(f) sections of the University Grants Commission (UGC).

The college has been granted ***autonomy by the University Grants Commission***, New Delhi and Osmania University, Hyderabad for all the programs it offers for a period of six years with effect from 2014-15.

The College has 185 highly qualified and experienced faculty members consisting of Professors, Associate Professors and Assistant Professors and around **158** technical and supporting staff. The college has very good infrastructural facilities which go beyond the curriculum requirements. The college offers value-added courses in GIS, CAD/CAM, DSP, VLSI, Networking, J2EE and communication skills to bridge the gap between the curriculum and the requirements of the Industry. Finishing school has been made part of curriculum from the second year onwards to improve the skills of the students.

QUALITY POLICY

Education without quality is like a flower without fragrance. It is our earnest resolve to strive towards high standards of teaching, training and developing human resources.

A Research & Development (R&D) Cell is established by personnel from industry / research organization to encourage the faculty and the students in acquiring additional qualifications and knowledge.

This Cell also facilitates the faculty for interaction with industry/research organizations in getting sponsored research projects. In addition, the college extends consultancy in various fields of engineering and technology. The Center for Counseling and Placement at Vasavi College of Engineering provides personal and career-related support to its students. The educational experience at the college is enlivened and enriched by an array of extra-curricular activities to fulfill the cultural and emotional needs of students.

A good number of ranks in university examinations are secured by our students every year. The all-round development of a student is achieved by exposing him/her to the outside world in a systematic and well planned manner. Just not marks and ranks, but also ethics and morals are incorporated into psyche of a student at Vasavi in a cautious way. This

unification of tradition and technology makes Vasavi a place for paradise of learning.

ACADEMIC RULES AND REGULATIONS FOR FOUR YEAR B.E DEGREE COURSE w.e.f 2016-17 Academic Year

1. RULES OF PROMOTION

ATTENDANCE: The ***minimum aggregate attendance*** percentage for BE program ***is 75%***. On medical grounds 65% attendance with valid medical certificate will be considered. A candidate who did not meet above attendance requirements is not eligible to appear for the semester examinations.

A student is allowed to use medical condonation facility only 4 (four) times in the entire period of 8 semesters in the span of 4 years B.E program.

2. ASSESSMENT AND EVALUATION SYSTEM:

There will be continuous and comprehensive evaluation of students. The distribution of sessional (internal) and semester examination marks for ***B.E programme*** are given below:

SESSIONALS EXAMS (internals)
Theory: **30 Marks**

- **20** Marks each for two internal examinations in a semester and 10 marks for assignments and quizzes etc together.
- **Average of two tests** will be considered for calculating internal exams marks to which assignment/quiz marks will be added for obtaining total CIE marks.
- Every student should secure a **minimum of 40% aggregate marks in the internal exams.**

Lab: 25 Marks

15 marks for day-to-day laboratory class work which will be awarded based on the average of all experiments.

- 10 marks for the internal examination.

SEMESTER EXAMS

- Semester theory examinations will be conducted for 70 marks. A student should secure a minimum of 40% marks in each subject for a pass.

- Semester laboratory examinations will be conducted for 50 marks. A student should secure a minimum of 50% marks for a pass.

In addition, a student shall secure a minimum of 40% marks in a theory subject and 50% marks in lab from sessional exams and semester examinations put together for a pass.

3. PROMOTION RULES TO NEXT HIGHER CLASS

S No	Semester/Class	Conditions to be fulfilled for
1	From 1/4 BE, I-SEM to 1/4 BE, II-SEM	Regular course of study of 1/4 B.E, I-SEM and 40% aggregate sessional marks in I-SEM
2	From 1/4 BE, II-SEM to 2/4 BE, I SEM	(a) Regular course of study of 1/4 B.E-II SEM and (b) Must have secured at least 50% of total credits prescribed for 1/4 B.E.
3	From 2/4 BE, I-SEM to 2/4 BE, II-SEM	Regular course of study of 2/4 BE, I-SEM and 40% aggregate sessional marks in II- SEM
4	From 2/4 BE, II-SEM to 3/4 BE, I SEM	(a) Regular course of study of 2/4 BE II SEM (b) Must have secured at least 50% of total credits prescribed for 2/4B. E and passed in all the subjects 1/4 B.E.
5	From 3/4 BE, I-SEM to 3/4 BE, II-SEM	Regular course of study of 3/4 B.E, I-SEM, and 40% aggregate sessional marks in I- SEM
6	From 3/4 BE, II-SEM to 4/4 BE, I SEM	(a) Regular course of study of 3/4 B.E, II-SEM (b) Must have secured at least 50% of total credits prescribed for 3/4 B.E and passed in all the subjects 2/4 B.E.

7	From 4/4 BE, I-SEM to 4/4 BE, II-SEM	(a) Regular course of study of 4/4 B.E, I-SEMand 40% aggregate sessional marks in II- SEM

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS)

SCHEME OF INSTRUCTION AND EXAMINATION w.e.f 2016-17

DEPARTMENT OF INFORMATION TECHNOLOGY

B.E. II YEAR - I-SEMESTER

S No.	Code	Subject	Scheme of Instruction				Scheme of Examination			
			Periods per week				Duration in Hrs	Maximum Marks		Credits
			L	T	D	P		SEM Exam	Sessionals	
1	IT 2010	Discrete Mathematics	3	1	-	-	3	70	30	3
2	IT2020	Micro Electronics	3	1	-	-	3	70	30	3
3	IT2030	Digital Electronics & Logic Design	3	2	-	-	3	70	30	4
4	IT2040	Data Structures	3	1	-	-	3	70	30	3
5	IT2050	Signals & Systems	3	1	-	-	3	70	30	3
6	IT2060	Computer Organization	3	1	-	-	3	70	30	3
7	HS2140	Human Values & Professional Ethics - I	2		-	-	3	70	30	1
8	HS2170	Finishing School: Communication skills in English- I	4	-	-	-	3	70	30	2
Practical										
9	IT2071	Basic Electronics Lab	-	-	-	3	3	50	25	2
10	IT2081	Data Structures Lab	-	-	-	3	3	50	25	2
11	IT2095	Mini Project-I	-	-	-	3	-	-	25	1
		Total	**24**	**7**		**9**		**660**	**315**	**27**
		Grand Total	**40**					**975**		

DEPARTMENT OF INFORMATION TECHNOLOGY
SYLLABUS FOR 2/4 B.E I-SEMESTER
DISCRETE MATHEMATICS

Instruction : 3+1Periods / week	Sem Exam Marks : 70	Subject Reference Code : IT2010
Credits : 3	Sessional Marks: 30	Duration of Sem Exam : 3 Hours

COURSE OBJECTIVES	COURSE OUTCOMES
The course will enable the students to:	***At the end of the course students will be able to:***
1. *Understand* Propositions and their equivalences, predicates and quantifiers and learn various proof strategies. 2. *Study* the concepts of number theory such as Modular Arithmetic, Congruences etc. 3. *Understand* the basics of counting, combinatorics, and various methods of solving Recurrence relations. 4. *Understand*Relations, Equivalence relations, Posets and Hasse diagrams. 5. *Analyze*the concepts of Graphs and trees.	1. *Use* logical notation to define and reason about fundamental mathematical concepts and *synthesize* induction hypothesis and simple *Induction* proofs. 2. *Prove* elementary properties of modular arithmetic and solve problems on applications in Computer Science 3. *Calculate* number of possible outcomes of elementary combinatorial processes such as permutations and combinations. *Model* and analyze computational processes using analytic and combinatorial methods. 4. *Prove* whether a given relation is an equivalence relation/poset and will be able to draw a Hasse diagram. 5. *Apply* graph theory models of data structures and state machines to solve problems of connectivity.

UNIT – I

Logic: Logic- Logical connectives- Propositional equivalences– Predicates and quantifiers – Nested quantifiers.

Mathematical Reasoning, Induction: Proof Strategy- Methods of Proofs- Mathematical Induction- Second Principle of Mathematical Induction.

UNIT – II

Number Theory: The Integers and Division- Division Algorithm- Fundamental Theorem of Arithmetic –Modular Arithmetic. Integers and Algorithms- Euclidean Algorithm. Applications of Number Theory-Linear Congruences- Fermat's Little Theorem- Public key cryptography- RSA Encryption and Decryption.

UNIT – III

Counting: Basics of counting- Pigeonholeprinciple- Permutations and combinations – Binomial Coefficients- Pascal's Identity- Vandermonde's Identity- Generalized Permutations and combinations.

Advanced Counting Techniques: Recurrence relations: Solving Recurrence Relations- Linear Homogeneous and Non-Homogeneous Recurrence relations - Divide and conquer relations Generating function– Counting Problems and Generating Functions- Using Generating Functions to prove identities and to solve Recurrence Relations- Principle of Inclusion – Exclusion (without proof).

UNIT – IV

Relations: Relations – Properties- n-ray relations and applications, Representing relations – Closures. Equivalence Relations. Partial Orderings- Poset- Hasse diagrams.

UNIT –V

Graph Theory: Introduction- Types of graphs- Graph terminology- Basic theorems- Representing Graphs and Graph Isomorphism. Connectivity- Euler and Hamiltonian paths. Planar graphs- Euler's Formula- Graph coloring- Definitions- Theorems.
Trees- Introduction to Trees- Properties of Trees- Spanning Trees- Theorems (without proofs), Algorithms for constructing Spanning trees.

Suggested Reading:

1. Kenneth H.Rosen – Discrete Mathematics and its application – 5th edition, Mc Graw – Hill, 2003.
2. J. K. Sharma, Discrete Mathematics, Second edition, Macmillan, 2005.
3. J.P.Trembly, R.Manohar, Discrete Mathematical Structure with Application to Computer Science, Mc Graw- Hill – 1997.
4. Joel. Mott. Abraham Kandel, T.P.Baker, Discrete Mathematics for Computer Scientist & Mathematicans, Prentiee Hail N.J., 2nd edn, 1986.
5. R.K Bisht, H.S.Dhami - Discrete Mathematics, Oxford University Press, 2015

DEPARTMENT OF INFORMATION TECHNOLOGY
SYLLABUS FOR 2/4 B.E I-SEMESTER

MICROELECTRONICS

Instruction: 3+1 Periods / week	**Sem Exam Marks** : 70	**Subject Reference Code** :IT2020
Credits : 3	**Sessional Marks** : 30	**Duration of Sem Exam** : 3 Hrs

Course Objectives	Course Outcomes
The course will enable the students to:	**At the end of the course student will be able to:**
Understand the different electronic devices, characteristics and their applications	1. Explain the principle of operation of p n junction diode and to design small applications such switch, rectifier etc. 2. Distinguish hole current and electron current and hence the working of BJT and analyze its operation as amplifier and switch 3. List the advantages of MOSFET over JFET and implement Boolean logic functions using CMOS logic 4. List the advantages of Negative feedback amplifiers and also describe the working of different types of Oscillator circuits. 5. Design adder, subtractor, comparator etc. using Operational Amplifier

UNIT – I

Semi-conductors, Conductors, and Insulators, Covalent bonds, conduction in semi-conductors, N-type and P-type semi-conductors, PN junction, Biasing, Zener diodes, Rectifier Circuits, Limiting and clamping circuits, Schottky Barrier diode and Varactor diode.Cathode Ray Oscilloscope and its applications

UNIT – II

Bipolar junction transistors – Physical structure and modes of operation, npn transistor, pnp transistor, characteristics, analysis of transistor circuits at DC, , biasing, transistor as amplifier, effect of emitter bypass capacitance, small signal equivalent circuit model, approximate analysis, transistor as switch, internal capacitance. Pi equivalent circuit, low frequency and high frequency operation, thermal run away

UNIT – III

JFET Characteristics and Operation ,MOSFET current-voltage characteristics, MOSFET as an amplifier and as a switch, biasing, Internal capacitance,
Digital CMOS logic circuits: Introduction, digital IC technologies and logic circuit families, Voltage Transfer Characteristic (VTC) of inverter, Noise Margins, Propagation delay, static and dynamic operation of CMOS inverter. CMOS logic gate circuits: Basic structure (PUN and PDN), Implementation of 2-input NOR gate, NAND gate, complex gates and exclusive OR gate.

UNIT – IV

Feedback – Structure, Properties of negative feedback, Topologies, Advantages of negative feedback amplifiers Sinusoidal Oscillators – Loop gain, Barkhausen criteria, RC Phase shift, LC and Crystal Oscillators.

Power Amplifiers: class A, B and C amplifiers.

UNIT – V

Operational Amplifiers : Ideal characteristics, op. amp. as adder, Subtractor, Integrator, differentiator and comparator using op. amp. generation of square and Triangular waveforms, Monostable multi vibrator.

Op. Amp. As Voltage –controlled current switch(VCCS), Current-controlled Voltage source(CCVS), Instrumentation Amplifier, antilogarithmic amplifiers and analog multipliers.

Suggested Reading :

1. Jacob Millman, Christos C Halkais, Satybrata jit, Electronic Devices and Circuits,Mc Graw Hill India Private Ltd, 3rd Edition
2. Adel S. Sedra, Kenneth C. Smith, Microelectronic Circuits, 5th Edition, Oxford International Student Edition, 2006
3. D. Roy Choudhury, Shail B. Jain, Linear Integrated Circuits, New Age International Publishers, 4th Edition.
4. Jocob Millman, Arvin grable – Micro Electronics – 2nd Edition, McGraw Hill 1987.
5. Donald L. Schilling, Charles Belove, Electronic Circuits Discrete and Integrated, Tata Mc Graw Hill Education, 3rd Edition

DEPARTMENT OF INFORMATION TECHNOLOGY
SYLLABUS FOR 2/4 B.E I-SEMESTER
DIGITAL ELECTRONICS & LOGIC DESIGN

Instruction: 3+2 Periods / week	**Semester End Exam Marks** : 70	**Subject Reference Code** :IT2030
Credits : 4	**Sessional Marks**:30	**Duration of Sem End Exam** : 3 Hrs

Course Objectives	Course Outcomes
The course will enable the students to:	**At the end of the course student will be able to:**
Understand the operation of different logic gates, programmable logic devices, flip flops and use them in the design and implementation of digital circuits using VHDL.	1. Demonstrate the knowledge of operation of logic gates (AND, OR, NAND, NOR, XOR, XNOR) along with developing the circuits using Boolean algebra including algebraic manipulation/simplification, application of various theorems, reduction methods and simulating using HDL. 2. Explain the internal architectures of FPGA's, ASIC's, PLD's. Design combinational circuits (arithmetic circuits, code converters), simulating using HDL. 3. Design basic sequential blocks such as flipflops, registers etc. 4. Design and analyze sequential digital circuits. 5. Distinguish between synchronous and asynchronous sequential circuits, to define set up and hold time of a flip-flop

UNIT – I

Introduction to Boolean algebra and number system, Logic Gates, Optimized implementation of logic functions – Karnaugh Map, Strategies for minimization of product-of-sum and sum-of-product functions. Multiple output circuits. NAND and NOR logic networks, Cost functions, TTL 74 series gates,Introduction to CAD tools and VHDL

UNIT – II

Programmable logic devices: general structure of a PLA, gate level diagram, schematic diagram, PAL. Structure of CPLDs and FPGAs, 2-input and 3-input lookup tables(LUT). Design of Arithmetic-circuits using CAD tools. Combinational circuit building blocks – Multiplexers. Decoders. Encoders. Code converters, Arithmetic comparison circuits. TTL 74 series ICs, VHDL for Combinational circuits

UNIT – III

Basic Latch, Gated SR Latch, gated D Latch Master-Slave edge triggered flip-flops. T Flip-flop, JK Flip-flop, excitation tables. Registers, Counter. TTL 74 series ICs,Using registers and counters with CAD tools. Design examples using VHDL.

UNIT – IV

Synchronous Sequential Circuits – Basic design steps. State-Assignment problem Moore and Mealy state models. State minimization, FSM as an Arbiter Circuit, Analysis of Synchronous sequential Circuits. Introduction to Asynchronous sequential circuits. Design of FSM with CAD Tools. Implementation using VHDL.

UNIT – V

ASM Charts, Hazards: static and dynamic hazards. Significance of Hazards.Clock skew, set up and hold time of a flip-flop, Digital Hardware Design Flow.
VHDL code using ASM Charts

Suggested Reading:

1. Stephen Brown Zvonko Vranesic – Fundamentals of Digital Logic with VHDL design, McGraw Hill – 2000.
2. M. Moris Mano, Charles R. Kime, Logic and Computer Design Fundamentals, 2nd edition, Pearson Education Asia, 2001.
3. Virendrakumar - Digital ElectronicsTheory & Experiments, New Age International Publishers, 2002
4. John F. Walkerly, Digital Design : Principles and Practices, Pearson India, 4th Edition.
5. Ronald J. Tocci, Neal S. Widmer, Gregory L. Moss, Digital Systems: Principles and Applications, Pearson India, 10th Edition.

DEPARTMENT OF INFORMATION TECHNOLOGY
SYLLABUS FOR 2/4 B.E I-SEMESTER

DATA STRUCTURES

Instruction: 3+1Periods / week	**Sem Exam Marks** : 70	**Subject Reference Code** :IT2040
Credits : 3	**Sessional Marks**:30	**Duration of Sem Exam** : 3 Hours

Course Objectives	Course Outcomes
The course will enable the students to:	**At the end of the course student will be able to:**
The objective of the course is to explore efficient storage mechanisms for easy access, design and implementation of various data structures	1. Apply different linear data structures to solve problems 2. Illustrate the usage of linked lists for various applications 3. Demonstrate the usage of non-linear data structures – graphs & trees 4. Apply different sorting and hashing techniques to a given problem 5. Use advanced non-linear DS to improve efficiency

UNIT-I:
Linear Data Structures: Algorithm Specification, Performance Analysis & Measurements.
Abstract Data Type [ADT]: List, Stack, Queue, Using Arrays and Linked Lists – review, Polynomial Abstract Data Type, String Abstract Data Type, applications of Linear Data Structures: A Mazing problem, Evaluation of Expressions

UNIT-II:
Linear Data Structure: Single Linked List, Stack and Queue – Review, Chains, Representing Chains in C++, Template Class Chain, Circular Lists, Doubly-linked list Applications of Lists – Polynomial manipulation- Operations (Insertion, Deletion, Merge)

UNIT-III:
Non-Linear Data Structures:
Trees: Introduction, Binary Trees, Binary Tree Traversal and Tree Iterators, Copying Binary Trees, Heaps, Binary Search Trees
Graphs: Graph abstract data type, elementary graph operations (Depth First Search (DFS), Breadth First Search (BFS) , Minimum cost spanning trees (Prim's and Kruskal's Algorithm)
Shortest path algorithm – Dijkstra's Algorithm, Bellman- Ford Algorithm

UNIT-IV:

Sorting and Hashing:

Sorting: Insertion sort, Quick sort, Merge Sort, Radix Sort, Heap Sort, Best computing time for sorting storage.

Hashing: Static Hashing, Hash Tables, Hash Functions, Secure Hashing Functions, Overflow Handling, Theoretical Evaluation of Overflow Techniques

UNIT-V:

Advanced Non-Linear Data Structures

Efficient Binary Search Trees: AVL Trees, Red-Black Trees, Splay Trees, M-way Search Trees, B-Trees.

Suggested Reading:

1. Ellis Horowitz, Dinesh Mehta, S. Sahani. Fundamentals of Data Structures in C++, Universities Press. 2007.
2. Mark Allen Weiss, Data Structures and Algorithm Analysis in C++, Pearson Education 2006.
3. Michael T. Goodrich, Roberto Tamassia, David Mount, Data structures and Algorithms in C++, Wiley India Pvt. Ltd, 2004
4. Thomas H. Cormen, Charles E. Leiserson, Ronald L. Rivest and Clifford Stem 'Introduction to Algorithms' 2002.

DEPARTMENT OF INFORMATION TECHNOLOGY
SYLLABUS FOR 2/4 B.E I-SEMESTER

SIGNALS & SYSTEMS

Instruction: 3+1Periods / week	**Sem Exam Marks** : 70	**Subject Reference Code** :IT2050
Credits : 3	**Sessional Marks** :30	**Duration of Sem Exam** : 3 Hours

Course Objectives	Course Outcomes
The course will enable the students to:	**At the end of the course student will be able to:**
Identify the different types of signals and systems and analyse them using different transformation techniques.	1. Classify different types of signals and commonly used functions and their operations on continuous time and discrete time signals. 2. Analyze the characteristics of different types of systems and to determine the characteristics of stable system. 3. Derive the energy spectral density and power spectral density of signals using the concepts of Fourier series and Fourier transforms and to write Matlab programs for the same. 4. Analyze continuous time signals using the concept of Laplace transform. 5. Analyze the discrete time signals and systems using the concept of DTFT and Z transform.

UNIT – I Signals

Introduction, Continuous time and Discrete time signals, Periodic signals, Even and Odd signals, Exponential and Sinusoidal signals, Unit Impulse and Unit Step functions, Operations on continuous time and discrete time signals (addition, subtraction, multiplication, amplitude and time scaling).convolution integral, graphical convolution of continuous time signals, The convolution sum, discrete convolution. MATLAB Examples: Programs on Signal generation and signal operations

UNIT – II Systems

Continuous time and Discrete time Systems, Basic System properties- linearity, Time Invariance, Causality, BIBO Stability, Linear Time Invariant Systems, Properties of Linear Time Invariant Systems, Impulse response of a system, series, parallel and series-parallel interconnection of systems, simplifications, Causal LTI systems described by Differential and Difference Equations.

UNIT – III Fourier Series, Fourier Transform

Fourier series Representation of Continuous time Periodic signals, Convergence of Fourier Series, Properties of Continuous time Fourier Series, Fourier Series representation of Discrete time Periodic signals and its properties, The Continuous time Fourier Transform, Properties of Continuous time Fourier Transform, Systems characterized by Linear constant coefficient Differential Equations, Parseval's theorem

for continuous and discrete time signals, Magnitude and phase spectra, Energy spectral density (ESD) and Power Spectral Density(PSD)
MATLAB Examples: Programs on Fourier Series, Fourier Transform

UNIT – IV Laplace Transform, Sampling
Laplace Transform – Definition, Region of Convergence, properties, partial fraction expansion and relationship to Fourier transforms, Inverse Laplace transform. Solution of differential equations
Introduction to Sampling, Representation of a Continuous time signal by its samples: The Sampling Theorem, The Effect of Undersampling: Aliasing, Reconstruction of a signal from its Samples using Interpolation. Quantization. MATLAB Examples: Programs on Laplace Transform and Sampling

UNIT – V The Discrete Time Fourier Transform and Z transform
The Discrete Time Fourier Transform, Properties of Discrete Time Fourier Transform, Analysis of Systems characterized by Linear Constant coefficient Difference Equations
MATLAB Examples: Programs on Discrete time Fourier Transform.
Introduction to Z Transform, Region of Convergence, Properties of Z transform, Concept of Pole –Zero plots, The Inverse Z transform, One Sided Z Transform or Unilateral Z Transform, Analysis and Characterization of LTI Systems using Z transform. MATLAB Examples: Programs on Z Transform

Suggested Reading:
1. Lathi, B.P. Principles of Linear Systems & Signals, Oxford University press, 2nd edition, 2009.
2. Alan V. Oppenheim, Alan S. Willsky, S. Hamid Nawab, Signals and Systems, Prentice Hall of India Private Limited.
3. Simon Haykin, Barry Van Veen, Signals and Systems, Wiley, 2nd Edition.
4. Douglas K. Lindner – Introduction to Signals and Systems – McGraw Hill 1999.
5. Rodger E. ziemer, William H Trenter, D. Ronald Faninn – Signals & Systems – 4th Edition, Pearson 1998.
6. A.Anand Kumar, Signals and Systems, PHI Learning Press, 3rd Edition.
7. H.P. Hsu, Signals and Systems, Schaum's Outline Series, Mc Graw Hill Education (India) Private Limited, 2nd Edition

DEPARTMENT OF INFORMATION TECHNOLOGY
SYLLABUS FOR 2/4 B.E I-SEMESTER
COMPUTER ORGANIZATION

Instruction: 3+1Periods/week	Sem Exam Marks : 70	Subject Reference Code:IT2060
Credits : 3	Sessional Marks:30	Duration of Sem Exam : 3 Hrs

Course Objectives	Course Outcomes
The course will enable the students to:	**At the end of the course student will be able to:**
Gain knowledge about the architectural details of a computer, its programming and interfacing the different peripherals.	1. Explain the significance of the basic functional units and the ways they are interconnected to form a complete computer system. 2. Comprehend the register transfer and micro operations and have an understanding of basic computer organization 3. Describe interrupts and direct memory access methods and micro programming 4. Explain the advantages caches, virtual memories and memory management. 5. Identify the importance of pipelining and multiple function units in the design of high-performance processors.

Unit I: Basic Structure of Computers
Computer Types, Functional Units, Basic Operational Concepts, Bus Structures, Software, Performance, Multiprocessors and Multicomputers, Historical Perspective, Numbers, Arithmetic operations and Characters, Addition and Subtraction of Signed Numbers, Floating point Numbers and Operations

Unit II: Machine Instructions and Programs
Memory locations and Addresses, Memory operations, Instructions and Instruction Sequencing, Addressing Modes, Assembly language, Basic Input/Output Operations, Stacks and Queues, Subroutines, Additional Instructions

Unit III: Input Output organization and Basic Processing Unit
Accessing I/O devices, Interrupts, Direct Memory Access (DMA), Buses, Interface Circuits, Standard I/O Interfaces-PCI,SCSI, USB, Basic Processing Unit-Some fundamental concepts, Execution of a complete Instruction, Multiple -Bus Organization, Hardwired control and Microprogrammed control

Unit IV: Memory System

Some Basic Concepts, Semiconductor RAM Memories, Read -Only memories, Cache Memories, Performance considerations, Virtual Memories, Memory Management Requirements, Secondary Storage-Magnetic Hard disks, Optical Disks, Magnetic Tape Systems

Unit V: Pipelining

Basic Concepts, Data Hazards, Instruction Hazards, Influence on Instruction sets, Datapath and control considerations, Super Scalar Operation, Performance considerations

Suggested Reading:

1. Carl Hamacher, Zvonko Vranesic, Safwat Zaky, Computer Organization, 5th Edition, McGraw Hill, 2002.
2. M. M. Mano, Computer System Architecture, 3rd Edition, Prentice Hall, 1994.
3. W. Stallings, "Computer Organization and Architecture - Designing for Performance", Prentice Hall of India, 2002.
4. J .P. Hayes, "Computer Architecture and Organization", McGraw-Hill, 1998.
5. Pal Chouduri, Computer Organization and Design, 2nd Ed. Prentice Hall of India, 2007
6. D. A. Patterson and J. L. Hennessy, "Computer Organization and Design - The Hardware/Software Interface", 2005.

DEPARTMENT OF INFORMATION TECHNOLOGY
SYLLABUS FOR BE 2/4 I-SEMESTER

HUMAN VALUES & PROFESSIONAL ETHICS - I

Instruction: 2 Periods per week	SEM Exam Duration: 3 Hours
Sessionals: 30 Marks	SEM Exam Marks: 70 Marks
Credits:01	Subject Ref. Code: HS2140

Course Objectives	Course Outcomes
The course will enable the students to :- • Get a holistic perspective of value- based education. • Grasp the meaning of basic human aspirations vis-a-vis the professional aspirations. • Understand professionalism in harmony with self and society. • Develop ethical human conduct and professional competence. • Enrich their interactions with the world around, both professional and personal.	**At the end of this course the student will be able to:** • Gain a world view of the self, the society and the profession. • Make informed decisions. • Start exploring themselves in relation to others and their work –constantly evolving into better human beings and professionals • Inculcate Human values into their profession. • Validate their aspirations through right understanding of human relationship and see the co-relation between the human values and prevailing problems. • Strike a balance between physical, mental, emotional and spiritual parts their being. • Obtain a holistic vision about value-based education and professional ethics.

1. **The purpose of life**-Individual to society to the ideal –individual transformation as a stepping stone to idealism- the flow of transformation from individual to society – An awakened society as a basis to move towards the concept of idealism. How do lifestyles and habits affect the basic behavior? What is the roadmap to a healthy lifestyle and how does it impact the individual, furthermore, how does it enhance the purpose of life.

2. **Time Management**-Why is it essential? Impediments-how best to manage time? Benefits of effective time-management. How to make the best of the present?

3. **Positive thinking-**The need, nature and scope of positive Thinking-Positive thinking as a foundation to success and building character – Introspection and Self-analysis-identifying the desirable traits-Building of right character. Meaning of values versus skills. Self-worth and Professional worth. Professional Obligations and Competence. Work-life balance.

4. **Philosophy of Life from different cultures–value of life–Objective of life-** The Physical, Mental and Emotional aspects of man-Building an integrated personality. Ways and means to accomplish it.

5. **Different lifestyles and habits**- **Excellence-Professional & Personal ethics in Society**-Goals-Striking a balance between excellence and goals and how to aim for excellence and achieve it with ethics.

6. **Potentials and harnessing Potentials**-Self-Hidden Potentials-Weeding out Weaknesses-Channelizing the potential. Optimizing potential to achieve goals.

Suggested Reading:

1. B.L Bajpai, 2004, Indian Ethos and Modern Management, New Royal Book Co., Lucknow. Reprinted 2008.
2. A.N Tripathy, 2003 Human values, New Age International Publishers.
3. EG Seebauer & Robert L. Berry,2000,Fundamentals of Ethics for Scientists and Engineers, Oxford University Press.
4. Mike Martin and Ronald Schinzinger "Ethics in Engineering "McGraw Hill
5. Charles E Haris, Micheal J Rabins, " Engineering Ethics "Cengage Learning

DEPARTMENT OF INFORMATION TECHNOLOGY
SYLLABUS FOR BE 2/4 FIRST SEMESTER
FINISHING SCHOOL: COMMUNICATION SKILLS IN ENGLISH – I

Instruction: 2Periods/week	Sem Exam Marks : 70	Subject Reference Code:HS2170
Credits : 2	Sessional Marks :30	Duration of Sem Exam : 3 Hrs

Course Objective	Course Outcome
• The four major skills of language learning, listening, speaking, reading and writing provide the right key to success. • The main objective of this finishing school curriculum is to involve content for all the above mentioned four skills in teaching English and to get students proficient in both receptive and productive skills	• Respond to questions and Engage in an informal conversation. • Narrate a message/story/incident, both verbally and in writing. • Describe an event/a session/ a movie/ an article. • Respond to others while being in a casual dialogue. • comprehend facts given and respond in an appropriate manner. • Construct sentences in a coherent form • Provide explanations • Recognize and list the key points in a topic/message/article. • Participate in group and forum discussions by providing factual information, possible solutions, and examples. • Debate on a topic by picking up the key points from the arguments placed. • Provide logical conclusions to the topics under discussion. • Prepare, present, and analyze reports

UNIT I – FUNDAMENTALS OF COMMUNICATION
Competencies:

- Basic conversational ability.
- Write e-mails introducing themselves & their purpose

Topics covered
Greeting and Introductions
Small Talk
Recalling

Topic Level Details
Greeting & Introductions
Competencies:

- Greeting appropriately

- Introducing themselves, a friend
- Responding to simple statements and questions both verbally and in writing
- Seeking introduction from others about themselves or about any topic.
- Writing an email with appropriate salutation, subject lines, self introduction, and purpose of mail.

Small Talk

Competencies:

- Identifying the topic of conversation.
- Speaking a few sentences on a random list of topics
- Reading simple information like weather reports, advertisements
- Seeking clarifications.

Recalling

Competencies:

- State takeaways from a session or conversations

UNIT II :NARRATIONS AND DIALOGUES

Competencies:

- Framing proper phrases and sentences to describe in context
- Speaking fluently with clarity and discrimination
- Responding to others in the dialogue.

Topics covered

Paraphrasing
Describing

Topic Level Details

Paraphrasing

Competencies:

- Listen for main ideas and reformulating information in his/her own words
- Draw appropriate conclusions post reading a passage.
- Writing an email confirming his/her understanding about a topic

Describing

Competencies:

- Speaking, Reading, and Writing descriptive sentences and paragraphs.

UNIT-III:RATIONAL RECAP

Competencies:

- Organizing and structuring the communication
- Detailing a topic
- Summarizing a topic.

Topics Covered:

Organizing
Sequencing
Explaining
Summarizing

Topic Level Details
Organizing
Competencies:
- Organizing the communication based on the context and audience

Sequencing
Competencies:
- Structuring the content based on the type of information.

Explaining
Competencies:
- Explaining a technical/general topic in detail.
- Write an email giving detailed explanation/process

Summarizing
Competencies:
- Recapitulating

UNIT-IV: PROFESSIONAL DISCUSSIONS AND DEBATES
Competencies:
- Analytical and Probing Skills
- Interpersonal Skills

Topics Covered:
Discussing
Debating
Topic Level Details
Discussing
Competencies:
- Thinking
- Assimilating

Debating
Competencies:
- Comprehending key points of the debate and note decisive points including supporting details.
- Construct a logical chain of arguments and decisive points.
- Writing a review about a product by providing reasons, causes, and effects

UNIT -V: DRAWING CONCLUSIONS AND REPORTING
Competencies:
- Reasoning skills - Coherent and logical thinking
- Reporting and Analyzing skills.

Topics Covered:
Concluding
Reporting
Topic Level Details
Concluding
Competencies:

- Analyzing the points discussed.
- Connecting all points without gaps.
- Identifying clinchers.
- Communicating the decisions

Reporting

Competencies:

- Reporting an incident
- Writing/Presenting a project report

DEPARTMENT OF INFORMATION TECHNOLOGY
SYLLABUS FOR 2/4 B.E I-SEMESTER
BASIC ELECTRONICS LAB

Instruction: 3 Periods/ week	**SemExam Marks** : 50	**Subject Reference Code** :IT2071
Credits : 2	**Sessional Marks**:25	**Duration of Sem Exam** : 3 Hours

Course Objectives	Course Outcomes
The course will enable the students to:	At the end of the course student will be able to:
Identify the different electronic devices and use them in building different application circuits.	1. Identify and use different electronic devices and measuring equipments. 2. Use PN diode, Zener diode for applications like rectifiers, clipping and clamping circuits and voltage regulators. 3. Use BJT transistor in the design of amplifier circuit. 4. Implement different types of oscillator circuits. 5. Use operational amplifier for different applications and verify the operation of different digital circuits.

ANALOG:

1. CRO and its applications: Measurement of amplitude, frequency. Obtaining transfer characteristics and lissajous figures. Determination of unknown frequency using CRO.
2. Characteristics of pn junction diode , zener diode, BJT and FET. Applications: Half-wave and full-wave rectifiers, clipping and clamping circuits, BJT and FET as switches
3. Frequency response of Common Emitter amplifier
4. Hartley, colpitts and RC phase shift oscillators
5. Operational Amplifier as an adder, subtractor, differentiator, integrator and comparator

DIGITAL:

6. Truth table verification of logic gates using TTL 74 series ICs. Transfer characteristics of a TTL gate using CRO
7. Half Adder, Full Adder, Decoder, MUX, implementation of Boolean logic using decoders and MUXes.
8. Truth table verification of D flip flop, T flip-flop and JK flip-flop
9. Counters
10. Shift Registers

SIMULATION:
Experiments using Microwind/PSPICE/any other simulation tool

Note: All the experiments are compulsory.
Note: Depending on the amount of work done in each activity and submission of the record, marks / grade will be awarded.

DEPARTMENT OF INFORMATION TECHNOLOGY
SYLLABUS FOR 2/4 B.E I-SEMESTER
DATA STRUCTURES LAB

Instruction: 3 Periods / week	**Sem Exam Marks** : 50	**Subject Reference Code** :IT2081
Credits : 2	**Sessional Marks**:25	**Duration of Sem Exam** : 3 Hrs

Course Objectives	Course Outcomes
The course will enable the students to:	At the end of the course student will be able to:
Develop skills in design and implementation of abstractions of various linear and non linear data structures and their practical applications.	1 Perform various operations on data structures such as stack, queues, linked lists. 2 Implement various sorting techniques. 3 Implement and perform different operations on trees and graphs.

1. C++ Program to implement Array ADT , String ADT .
2. Menu driven program that implements Stacks & Queues for the following operations
   a)create b)push c)pop
3. Menu driven program that implements Circular Queues for the following operations
   a)create b)Insert c)delete
4. Implementation of Infix to Postfix Conversion, evaluation of postfix expression.
5. Implementation of Doubly Linked List.
6. C++ Program to perform Polynomial arithmetic using linked list
7. Implementation of Binary Search and Hashing.
8. Implementation of Merge and Quick sort.
9. Implementation of Tree Traversals on Binary Trees.
10. Implementation of Heap Sort.
11. Implementation of Insertion and deletion operations on AVL Trees.
12. Implementation of Breadth First search Traversal on Graphs.
13. Implementation of Depth First search Traversal on Graphs

Note: Depending on the amount of work done in each activity and submission of the record, marks / grade will be awarded.

DEPARTMENT OF INFORMATION TECHNOLOGY
SYLLABUS FOR 2/4 B.E I-SEMESTER

MINI PROJECT-I

Instruction: 3 Practicals / week	**Sessional Marks** :25
Credits : 1	**Subject Reference Code** :IT2095

Course Objectives	Course Outcomes
The course will enable the students to:	At the end of the course student will be able to:
Develop and implement a project using any of the programming languages/simulation tools/electronic components.	1. Develop effective solutions to various computing problems by applying the theoretical knowledge gained. 2. Implement projects and demonstrate them using presentations and technical reports

- The students are required to implement projects (hardware or software related) from project exercises given in the suggested readings and reference books of the theory subjects.
- During the implementation of the projects, Personnel Software Process (PSP) has to be followed.
- Two reviews will be conducted.
- Report of the project work has to be submitted for evaluation.

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS)
SCHEME OF INSTRUCTION AND EXAMINATION w.e.f 2016-17
DEPARTMENT OF INFORMATION TECHNOLOGY
B.E. II YEAR -II-Semester

S No.	Code	Subject	Scheme of Instruction				Scheme of Examination			
			Periods per week				Duration in Hrs	Maximum Marks		Credits
			L	T	D	P		SEM Exam	Sessionals	
1	IT2100	Probability & Random Processes	3	1			3	70	30	3
2	IT2110	Microprocessor & Microcontroller	3	1			3	70	30	3
3	IT2120	OOPS using Java	3	1			3	70	30	3
4	IT2130	Data Communications	3	2			3	70	30	4
5	IT2140	Design & Analysis of Algorithms	3	1			3	70	30	3
6	CE2090	Environmental Studies	4				3	70	30	3
7	HS2270	Finishing School: Communication skills in English - II	4				3	70	30	2
8										
Practical										
9	IT2151	Microprocessor Lab				3	3	50	25	2
10	IT2161	Java Programming Lab				3	3	50	25	2
11	IT2175	Mini Project-II				3	-	-	25	1
		Total	**23**	**6**		**9**		**590**	**285**	**26**
		Grand Total	**38**					**875**		

DEPARTMENT OF INFORMATION TECHNOLOGY
SYLLABUS FOR 2/4 B.E II-SEMESTER
PROBABILITY & RANDOM PROCESSES

Instruction: 3+1 Periods / week	Sem Exam Marks : 70	Subject Reference Code : IT2100
Credits : 3	Sessional Marks:30	Duration of Sem Exam : 3 Hours

Course Objectives	Course Outcomes
The course will enable the students to:	**At the end of the course student will be able to:**
Apply the concepts of probability and random process theory in the analysis of random signals and their associated random phenomenon.	1. Apply the concepts of Probability, Joint and Conditional probability in solving mathematical problems. 2. Distinguish the different types of Random Variables 3. Analyze random variables which are functions of one random variable and two random variables. 4. Analyze random processes in time domain and frequency domain. 5. Identify the characteristics of a random process which passed through linear systems.

UNIT – I:
The meaning of Probability – Introduction- the definitions – Probability and Induction – Causality versus Randomness.
The Axioms of Probability: Set theory – Probability Space – Conditional Probability.
Repeated Trials: Combined Experiments – Bernoulli Trials – Bernoulli's theorem and games of chance.

UNIT – II:
The Concept of a Random Variable: Introduction – Distribution and Density functions- Specific Random Variables – Conditional Distributions – Asymptotic Approximations for Binomial Random variables.
Functions of One Random Variables: The Random Variable g(x) – The Distribution of g(x) – Mean and Variance – Moments – Characteristic Functions.

UNIT – III:
Two Random Variables: Bivariate Distributions – One Function of Two Random Variables – Two Function of Two Random Variables – Joint Moments – Joint Characteristic Functions – Conditional Distributions – Conditional Excepted Values.

UNIT – IV:
Random Processes – Definitions – Basic concepts and examples – Stationarity and ergodicity – Second order processes – Weakly stationary processes – Covariance functions and their properties – Spectral representation Weiner – Kinchine theorem.

UNIT –V:Linear Operations: Gaussian processes – Poisson Processes – Low pass and Band pass noise representations.

Suggested Reading:

1. Papoulis: Probability, Random Variables and Stochastic processes, 4th Edition Tata McGraw Hill, 2002
2. Peyton Z. Peebles, Probability, Random Variables and Random Signal Principles, Mc Graw Hill Education (India) Private Limited, 4th Edition
3. Wilbur B. Davenport, Probability and random processes: an introduction for applied scientists and engineers, Mc Graw Hill, 1970
4. E. Wong, Introduction to Random Processes, Springer texts in Electrical Engineering, Springer-Verlag, NewYork, 1983.
5. H. Stark and J. Woods, Probability, Random processes, and Estimation Theory for Engineers, Prentice Hall, 1986

DEPARTMENT OF INFORMATION TECHNOLOGY
SYLLABUS FOR 2/4 B.E II-SEMESTER
MICROPROCESSOR & MICROCONTROLLER

Instruction: 3+1 Periods / week	Sem Exam Marks : 70	Subject Reference Code : IT2110
Credits : 3	Sessional Marks: 30	Duration of Sem Exam : 3 Hrs

Course Objectives	Course Outcomes
The course will enable the students to:	At the end of the course student will be able to:
Understand the development of systems for different applications using microprocessor and microcontroller.	1. Explain the architecture and instruction set of 8085 microprocessor. 2. Understand the different techniques for interfacing different peripherals. 3. Explain the architecture and instruction set of 8051 microcontroller. 4. Illustrate the different peripheral interfacing methods for 8051 microcontroller. 5. Identify the different signal conditioning circuits, D/A , A/D circuits and study the tools used to build applications using microcontroller.

UNIT-I:

Introduction to Microprocessors & Microcontrollers. Architecture and Organization of 8085; Instruction set, Assembly language programming.

UNIT-II:

Memory Interfacing, Data Transfer Techniques, I/O Ports, Interfacing of Switches, Interfacing of LED Displays, Programmable Interrupt and DMA Controller.

UNIT-III:
Serial Mode Data Transfer, Programmable Timer/Counter Designing μp based system. Architecture and Organization of μc 8051, Instruction Set of 8051, Assembly language programming.

UNIT-IV:
Interfacing External memory to 8031, 8051, Timer/Counter Operation, 8051 Serial Data Communication, Interfacing Keyboard and Display devices to 8051.

Unit-V:
Transducers, Signal Conditioning Circuits, Opto Coupler, Relays & DACs, ADCs and Data acquisition Subsystems Development Aids and Trouble Shooting techniques, Microcontroller application, RTOS for Embedded Application.

Suggested Reading*:*
1. Ramesh S Gaonkar, Microprocessor Architecture, Programming, and Applications with the 8085, 5/E Prentice Hall, 2002.
2. Kenneth J.Ayala, 'The 8051 microcontroller Architecture, Programming and applications' second edition, Penram international.
3. Wayne Wolf, Computers as components: Principles of Embedded Computing Design, Elseiver, 2nd Edition.
4. David E. Simon, An Embedded Software Primer, Pearson India, First Edition.
5. Raj Kamal, Embedded Systems : Architecture, Programming and Design, Mc Graw Hill Education (India) Private Limited, 3rd Edition.
6. Ajay V. Deshmukh, Micro controllers: Theory and Applications, Mc Graw Hill Education (India) Private Limited, First Edition.
7. Frank Vahid, Tony Givargis, Embedded System Design: A Unified Hardware/ Software Introduction, Wiley Publishers, 3rd Edition.

DEPARTMENT OF INFORMATION TECHNOLOGY
SYLLABUS FOR 2/4 B.E II-SEMESTER

OOP USING JAVA

Instruction: 3+1Periods / week	Sem Exam Marks : 70	Subject Reference Code : IT2120
Credits : 3	Sessional Marks :30	Duration of Sem Exam : 3 Hrs

Course Objectives	Course Outcomes
The course will enable the students to:	**At the end of the course student will be able to:**
The objective of the course is to explain the features of java and different predefined classes and Event handling .	1. Write applications to perform different tasks like usage of data types, method overloading, Inheritance, Creation of packages , Interfaces 2. Handle exceptions in an efficient way with predefined methods , performing input and output operations with different stream handling classes. 3. Generate object representation of a data type, using group of objects in a collection frame work,dividing the string into tokens using string tokenizer 4. Create an applet, handle events using Delegation event model, creation of controls . 5. Describe swing, swing features and demonstrate its applications.

UNIT- I

Object Oriented Concepts review

Java Programming Fundamentals: Introduction, Overview of Java, Data types, Variables and Arrays, Operators, Control statements, Classes, Methods, Inheritance, Packages and Interfaces.I/O basics , Reading console input and output.

UNIT- II

Exception Handling, Multithreaded Programming, Java I/O classes and interfaces, Files, Stream and Byte classes, Character Streams, Serialization. String Handling.

UNIT- III

Exploring Java Language, Collections Overview, Collections Interfaces, Collections Classes, Iterators, Random Access Interface, Maps, Comparators, Arrays, Legacy classes and interfaces, String tokenizer, BitSet , Date, Calendar, Timer.

UNIT- IV

Introducing AWT working with Graphics:AWT Classes, Working with Graphics.

Event Handling:Two Event Handling Mechanisms, The Delegation Event Model, Event Classes, Source of Events, Event Listener Interfaces. Applets.

AWT Controls: Control Fundamentals, Labels, Using Buttons, Applying Check Boxes, CheckboxGroup, Choice Controls, Using Lists, Managing Scroll Bars, Using TextField, Using

TextArea, Understanding Layout Managers, Menu bars and Menus, Dialog Boxes, FileDialog, Exploring the controls, Menus ,and Layout Managers.

UNIT- V

Introducing Swing: The Origins of Swing, Swing features, Components and Containers, Swing packages, Swing Applications.

Suggested Reading:

1. Herbert Schildt, The Complete Reference Java, 7th Edition, Tata McGraw Hill, 2006.
2. James M Slack, Programming and Problem solving with JAVA, Thomson Learning, 2002.
3. C Thomas Wu, An Introduction to Object Oriented Programming with Java 5th edition, McGraw Hill Publishing, 2010.

DEPARTMENT OF INFORMATION TECHNOLOGY
SYLLABUS FOR 2/4 B.E II-SEMESTER
DATA COMMUNICATIONS

Instruction: 3+2 Periods / week	Sem Exam Marks : 70	Subject Reference Code: IT2130
Credits : 4	Sessional Marks:30	Duration of Sem Exam : 3 Hrs

Course Objectives	Course Outcomes
The course will enable the students to:	At the end of the course student will be able to:
Understand different ways of data communication and the protocols used for wired and wireless networking.	1. List different coding schemes of data communication, networking, protocols, standards, Networking models and different encoding techniques. 2. Describe the services provided by the Data link layer and implementation of these services in LAN's and WAN's. 3. Explain the different multiplexing techniques. 4. Understand the IEEE standard, Gigabit Ethernet. 5. Describe two promising WLAN technologies such as 802.11 and Bluetooth and how this wireless technology is used in cellular telephony

UNIT-I : Introduction: Communication model, Data Communication networking, Protocols and Architecture, Standards.
Data Transmission: Concepts and terminology, Analog and Digital Transmission, Transmission Impairments, Transmission media.
Data Encoding: Digital Data Digital Signals, Digital Data-Analog Signals, Analog Data-Digital Signals, Analog Data-Analog Signals.

UNIT-II : Data Communication Interface: Asynchronous and Synchronous Transmission, Line Configuration, Interfacing.

Data Link Controls: Flow Control, Error Detection, Error Control, HDLC, other Data link Control protocols, performance issues.

UNIT – III : Multiplexing: Frequency Division Multiplexing, Synchronous time - Division Multiplexing, Statistical Time – Division Multiplexing. Asymmetric Digital Subscriber line, xDSL. Circuit Switching, Packet Switching & Frame Relay.
ATM Architecture, Logical Connection, ATM Cells, Transmission of ATM cells.

UNIT –IV : Traditional Ethernet: Topologies, LAN protocol architecture, MAC sub layer, - CSMA/CD, Physical Layer, Implementation, Bridged, switched and full duplex Ethernets, Layer 2 and Layer 3 Switches.
Fast Ethernet: MAC sublayer, Physical sublayer, Implementation.
Gigabit Ethernet: MAC sublayer, Physical Layer, Implementation.

UNIT –V : Cellular Wireless Networks: Principles of Cellular Networks, First Generation Analog Second Generation CDMA, Third Generation Systems.
Wireless LANs: Overview, Wireless LAN Technology, IEEE 802.11. Architecture and services, IEEE 802.11 Medium Access Control, IEEE 802.11 Physical Layer.
Bluetooth:Architecture, Layers.

Suggested Reading:

1. William Stallings, Data and Computer communication, 7th edition. Pearson Education, Asia-2004.
2. Behrouz A. Forouzan, Data Communications and Networking, 4th Edition, Tata McGraw Hill, 2006.
3. Fred Halsall, Data Communications, Computer Networks and Open Systems, 4th Edition, Pearson Education, 2000.
4. Simon Haykin, " Communication Systems", John Wiley & Sons, 2004
5. H. Taub, D L Schilling, G Saha, "Principles of Communications", 3rd Edition, Pearson Education, 2007.

DEPARTMENT OF INFORMATION TECHNOLOGY
SYLLABUS FOR 2/4 B.E II-SEMESTER
DESIGN & ANALYSIS OF ALGORITHMS

Instruction: 3+1 Periods / week	Sem Exam Marks : 70	Subject Reference Code : IT2140
Credits : 3	Sessional Marks:30	Duration of Sem Exam : 3 Hrs

Course Objectives	Course Outcomes
The course will enable the students to:	At the end of the course student will be able to:
Analyze the performance of different algorithms for their time and space complexities, and for a given problem, design the optimal solution using various algorithmic design techniques.	1. Analyze asymptotic run-time complexity of algorithms including formulating recurrence relations 2. Design algorithms using greedy strategy, divide and conquer approach, and analyze them 3. Describe the dynamic-programming approach and explain when an algorithmic design situation calls for it. 4. Apply algorithmic design paradigms like Backtracking and Branch-and-bound for solving problems 5. Formulate Non deterministic algorithms for NP hard and NP complete problems.

UNIT-I

Introduction: AlgorithmSpecification, Performance analysis, SpaceComplexity, Time Complexity, Asymptotic Notation(O, Omega, Theta), Practical Complexities, Performance Measurement, Review of elementary data structures, Heap and Heap Sort, Hashing, Set representation, UNION, FIND.

UNIT-II

Divide- and Conquer: The general method, finding the maximum and minimum, Merge sort quick sort, Strassen's Matrix Multiplication.

Greedy Method: The general method, Knapsack problem, Job sequencing with deadlines, Minimum-Cost Spanning Trees, Optimal Storage on tapes, Optimal merge patterns, Huffman Codes.

UNIT-III

Dynamic Programming And Traversal Technique: Multistage graph, All-Pairs Shortest Paths, Optimal Binary Search trees, 0/1 Knapsack, Reliability Design, The Traveling Salesman Problem, Biconnected Components and Depth First Search.

UNIT-IV

Backtracking and Branch and Bounds: The8-Queens Problem, Graph Coloring, Hamiltonian cycles, Knapsack Problem, 0/1 Knapsack Problem, Traveling salesperson problem, Lower-Bound Theory- Comparison Trees.

UNIT-V

NP-Hard and NP-Completeness: Basic concepts, cook's theorem, NP-hard graph problems-Clique Decision Problem, Node Cover Decision Problem, NP-Hard Scheduling Problem, NP-hard code generation problems,

Suggested Reading:

1. Horowitz E. and Sahani S: Fundamentals of Computer Algorithm, Second edition, University Press, 2007.
2. Anany Levitin, Introduction to the Design & Analysis, of Algorithms, Pearson Education, 2003.
3. Thomas H.Cormen, Charles E.Leiserson, Ronald L.Rivest, Clifford Stein, "Introduction to Algorithms", Third edition, MIT, 2010
4. Aho, Hopcroft, Ulman, The Design and Analysis of Computer Algorithm, Pearson Education, 2000.
5. Parag H.Dave, Himanshu B. Dave, Design and Analysis of Algorithms, Pearson Education, 2008.

DEPARTMENT OF INFORMATION TECHNOLOGY
SYLLABUS FOR 2/4 B.E II-SEMESTER
ENVIRONMENTAL STUDIES

Instruction : 4 Periods / week	Sem Exam Marks : 70	Subject Reference Code : CE 2090
Credits : 3	Sessional Marks: 30	Duration of Sem Exam : 3 Hours

COURSE OBJECTIVES	COURSE OUTCOMES
In this subject the students will	*Upon the completion of this course students will be able to*
1. Describe various types of natural resources available on the earth surface. 2. Explain the concepts, energy flow in ecosystem along with the biotic and abiotic components of various aquatic ecosystems. 3. Identify the values, threats of biodiversity, endangered and endemic species of India along with the conservation of biodiversity. 4. Explain the causes, effects and control measures of various types of pollutions and environmental protection acts. 5. Describe the methods for water conservation, the causes, effects of global warming, climate change, acid rain, ozone layer depletion, various types of disasters and their mitigation measures.	1. Describe the various types of natural resources. 2. Differentiate between various biotic and abiotic components of ecosystem. 3. Examine the values, threats of biodiversity, the methods of conservation, endangered and endemic species of India. 4. Illustrate causes, effects, control measures of various types of environmental pollutions and environmental protection acts. 5. Explain the causes, effects of climate change, global warming, acid rain and ozone layer depletion, various types of disasters and their mitigation measures and list the methods of water conservation and watershed management.

UNIT-I :
Environmental Studies: Definition, scope and importance, need for public awareness. Natural resources: Water resources; floods, drought, conflicts over water, dams-benefits and problems. Effects of modern agriculture, fertilizer-pesticide problems, water logging salinity. Energy resources, growing energy needs, renewable and non-renewable energy sources. Land Resources, land as a resource, land degradation, soil erosion and desertification.

UNIT-II :
Ecosystems: Concepts of an ecosystem, structure and function of an ecosystem, producers, consumers and decomposers, energy flow in ecosystem, food chains, ecological pyramids, aquatic ecosystem (ponds, streams, lakes, rivers, oceans, estuaries).

UNIT-III :

Biodiversity: Genetic , species and ecosystem diversity. Value of biodiversity, threats to biodiversity, endangered and endemic species of India, conservation of biodiversity.

UNIT-IV :

Environmental Pollution: Causes, effects and control measures of air pollution, water pollution, soil pollution, noise pollution, thermal pollution and solid waste & e-waste management.

Environment Protection Act: Air, water, forest and wild life acts.

UNIT-V :

Social Aspects and the Environment: Water conservation, watershed management, and environmental ethics. Climate change, global warming, acid rain, ozone layer depletion. EIA, population explosion.

Disaster Management: Types of disasters, impact of disasters on environment, infrastructure, and development. Basic principles of disaster mitigation, disaster management, and methodology, disaster management cycle, and disaster management in India.

Suggested Reading

1. Deswal S. and Deswal A., *A Basic Course on Environmental studies*, Dhanpat Rai & Co Pvt. Ltd. 2004.
2. Benny Joseph, *Environmental Studies*, Tata McGraw-Hill, 2005
3. Suresh K. Dhameja, *Environmental Studies*, S.K. Kataria & Sons, 2010.
4. De A.K., *Environmental Chemistry*, Wiley Eastern Ltd.
5. Odum E.P., *Fundamentals of Ecology,* W.B. Sunders Co., USA.
6. Sharma V.K., *Disaster Management*, National Centre for Disaster Management, IIPE, Delhi, 1999.
7. Rajagopalan R., *Environmental Studies*, Second Edition, Oxford University Press, 2013.

DEPARTMENT OF INFORMATION TECHNOLOGY
SYLLABUS FOR 2/4 B.E II-SEMESTER
FINISHING SCHOOL:COMMUNICATION SKILLS IN ENGLISH-II

Instruction : 4 Periods / week	Sem Exam Marks : 70	Subject Reference Code : HS2270
Credits : 2	Sessional Marks: 30	Duration of Sem Exam : 3 Hours

Course Objective	Course Outcome
1. identify the various features and functions of human language and communication. 2. develop the habit of listening effectively so as to analyze the speaker's tone and tenor. 3. choose appropriate words so as to speak and write accurately. 4. read various types of texts and sift information correctly. 5. study organizational structures and behavioral patterns and adapt appropriately.	• Participate in group and forum discussions by providing factual information, possible solutions, and examples. • Debate on a topic by picking up the key points from the arguments placed. • Provide logical conclusions to the topics under discussion. • Prepare, present, and analyze reports. • choose appropriate words and tone to present accurate, specific, and factual reports. • Compose a summary of beginning high level reading text that identifies the thesis and key supporting details. • Summarize with 70% comprehension.. • Apply reading skills, including how to approach different types of literature.

UNIT I: PROFESSIONAL DISCUSSIONS AND DEBATES

Competencies:
- Analytical and Probing Skills
- Interpersonal Skills

Topics Covered:
Discussing
Debating

Topic Level Details
Discussing
Competencies:
- Thinking
- Assimilating

Debating
Competencies:
- Comprehending key points of the debate and note decisive points including supporting details.
- Construct a logical chain of arguments and decisive points.
- Writing a review about a product by providing reasons, causes, and effects

UNIT II: DRAWING CONCLUSIONS

Competencies:

- Reasoning skills - Coherent and logical thinking
- Reporting and Analyzing skills.

Topics Covered:

How to draw conclusions
Importance of Logic

Topic Level Details:

Drawing conclusions

Competencies:

- Analyzing the points discussed.
- Connecting all points without gaps.
- Identifying clinchers.
- Communicating the decisions

UNIT III - REPORTING

Competencies:

- Reporting an incident
- Writing/Presenting a project report

UNIT IV - READING FOR CONTEXT

Competencies

Develop metacognitive strategies

Topics covered

Develop critical reading skills:

- Recognition of author's purpose
- Awareness of stylistic differences
- Discernment of fact and opinion
- Evaluation of fact and opinion
- Recognition of propaganda techniques
- Present vocabulary building methods
- Use comprehension and vocabulary strategies to raise reading rate.

UNIT V- SOFT-SKILLS

1. Professional integrity
2. Managing time
3. Coping with stress
4. Organizational skills

DEPARTMENT OF INFORMATION TECHNOLOGY
SYLLABUS FOR 2/4 B.E II-SEMESTER
MICROPROCESSOR LAB

Instruction: 3 Periods/ week	Sem Exam Marks : 50	Subject Reference Code : IT2151
Credits : 2	Sessional Marks:25	Duration of Sem Exam : 3 Hours

Course Objectives	Course Outcomes
The course will enable the students to:	At the end of the course student will be able to:
Learn the instruction set and interfacing techniques of 8085 microprocessor and 8051 microcontroller and its usefulness to embedded system applications	1. Write programs using 8085 microprocessor and 8051 microcontroller 2. Write programs for interfacing stepper motors, LED, LCD displays, keyboard etc. 3. Write programs for developing an embedded system application .

1. Tutorials on 8085 & 8051 Programming.
2. Interfacing and programming of 8255. (E.g. traffic light controller).
3. Interfacing and programming of 8254.
4. Interfacing and programming of 8279.
5. A/D and D/A converter interface.
6. Stepper motor interface.
7. Display interface.

Note: Adequate number of programs covering all the instructions of 8085 & 8051 instruction set should be done on the 8085 microprocessor & 8051 Microcontroller trainer kits.

DEPARTMENT OF INFORMATION TECHNOLOGY
SYLLABUS FOR 2/4 B.E II-SEMESTER

JAVA PROGRAMMING LAB

Instruction: 3 Periods / week	Sem Exam Marks : 50	Subject Reference Code : IT2161
Credits : 2	Sessional Marks:25	Duration of Sem Exam : 3 Hrs

Course Objectives	Course Outcomes
The course will enable the students to:	At the end of the course student will be able to:
Develop an application using Java (object oriented programming techniques).	1. Incorporate OOPs concept by implementing exception handling, multithreading, packages. 2. Use ''collections'' to organize data in different ways. 3. Create web application involving GUI with AWT, Applet,Swings.

1. A program to illustrate the concept of inheritance,
2. A program to illustrate the concept of dynamic polymorphism
3. A program to illustrate the concept of abstract class
4. A program to illustrate multithreading
5. A program to illustrate the concept of thread synchronization.
6. A program using String Tokenizer.
7. A program using Collection classes and Interfaces
8. A program to illustrate the usage of filter
9. A program to illustrate the concept of Buffered I/O streams.
10. An application involving GUI with different controls, menus and event handling.
11. A program to illustrate the concept of swings.

Suggested Reading:

1. Herbert Schildt, The Complete Reference Java, 7th Ed, Tata McGraw Hill, 2006.
2. James M Slack, Programming and Problem solving with JAVA, Thomson Learning, 2002.
3. C Thomas Wu, An Introduction to Object Oriented Programming with Java 5th edition, McGraw Hill Publishing, 2010.

DEPARTMENT OF INFORMATION TECHNOLOGY
SYLLABUS FOR 2/4 B.E II-SEMESTER

Mini Project-II

Instruction: 3 Periods/ week	**Sessional Marks** :25
Credits : 1	**Subject Reference Code** :IT2175

Course Objectives	Course Outcomes
The course will enable the students to:	At the end of the course student will be able to:
Develop and implement a project using any of the programming languages/simulation tools/electronic components.	1.Develop effective solutions to various computing problems by applying the theoretical knowledge gained. 2.Implement projects and demonstrate them using presentations and technical reports

- The students are required to implement project (hardware or software related) from project exercises given in the suggested readings and reference books of the theory subjects.
- During the implementation of the projects, Personnel Software Process (PSP) has to be followed.
- Two reviews will be conducted.
- Report of the project work has to be submitted for evaluation.

with effect from the academic year 2016-17

DEPARTMENT OF INFORMATION TECHNOLOGY

SCHEME OF INSTRUCTION AND EXAMINATION W.E.F 2016-17

2/4 B.E. Bridge Course (for Lateral Entry Students of all branches)

I-Semester

S No.	Code	Subject	Scheme of Instruction				Scheme of Examination			
			Periods per week				Duration	Maximum Marks		Credits
			L	T	D	P		SEM Exam	Sessionals	
Theory										
1	MA2040	Mathematics	1	-	-	-	90 min	25	-	-
2	PH2130	Physics of Materials	1	-	-	-	90 min	25	-	-
3	CE2080	Engineering Mechanics	2	-	-	-	3 hrs	50	-	-
Practicals										
4	CS 2091	C-Programming Lab	-	-	-	2	3 hrs	50	-	-
			4	**-**	**-**	**2**	**-**	**150**	-	-
II-Semester Practical										
1	HS2231	ELT-LAB	-	-	-	2	3	50	-	-

No credits will be awarded to the bridge courses offered at 2/4 B.E (all branches) lateral entry students admitted from the academic year 2015-16 under autonomous status. However pass in each of these courses is mandatory to obtain the degree. Every student shall get 40% marks in each course for a pass in theory subject and 50% marks in laboratory course. Only semester examinations will be conducted at the end of each semester. The marks/Grades obtained by the student in this course ***will not be added in computing the SGPA/CGPA***

DEPARTMENT OF CIVIL ENGINEERING

SYLLABUS FOR BRIDGE COURSE BE 2/4-FIRST SEMESTER (All branches)

ENGINEERING MECHANICS

Instruction :2periodsweek	SubjectReferenceCode: **CE2080**
SemesterExamMarks: **50**	DurationofSemesterExam:**3Hrs**

COURSE OBJECTIVES	COURSE OUTCOMES
1. To **learn** the resolution of a system of spatial forces. 2. To **assess** the frictional forces on rigid body. 3. To **understand** the concepts of dynamics and its principles. 4. To **explain** kinetics and kinematics of particles, projectiles, curvilinear motion and centroidal motion. 5. To **impart** the concepts of work-energy method and its applications to rectilinear translation, centroidal motion.	***studentswillbeableto:*** 1. **Judge** whether the body under the action of spatial force system. 2. **Solve** problem of bodies subjected to friction. 3. **Distinguish** between statics and dynamics and differentiate between kinematics and kinetics. 4. **Understand** the kinetics and kinematics of a body undergoing rectilinear, curvilinear, rotatary motion and rigid body motion. 5. **Know** the concepts of work and energy principles subject and derive the work energy equations for translation, rotation and connected systems.

UNIT-I (3periods)

ForceSystems: Componentsofforces, momentsinspace anditsapplications.

UNIT-II (4periods):

Friction: Lawsoffriction.Applicationtosimplesystems and wedgefriction.

UNIT-III (5periods):

Kinematics: Rectilinearmotion,Curvilinearmotion,Velocityandacceleration of a particle.

UNIT-IV (6periods):

Kinetics: Analysisasaparticle.Analysisasarigidbodyintranslation.Fixedaxisrotatio n andRolling bodies.

UNIT-V (5periods):

Work Energy: Principlesofwork-energy,anditsapplicationtotranslation,Particlemotionand connectedsystems.

Learning Resource:

1. F.L.Singer, "Engineering Mechanics", Harpper & Collins, Singapore 1994.
2. S.P.Timoshenko and D.H.Young, "Engineering Mechanics", McGraw Hill International Edition, 1983
3. Andrew Pytel., Jaan Kiusalaas., "Engineering Mechanics", Cengage Learning, 2014.
4. F.P.Beer & E.R.Johnston, "Jr. Vector Mechanics for Engineers", TMH, 2004.
5. R.C.Hibbeler & Ashok Gupta, "Engineering Mechanics", Pearson Education, 2010.
6. Tayal A.K., "Engineering Mechanics – Statics & Dynamics", Umesh Publications, 2011.
7. Basudeb Bhattacharyya., "Engineering Mechanics", Oxford University Press, 2008.
8. Meriam. J. L., "Engineering Mechanics", Volume-I Statics, John Wiley & Sons, 2008.
9. NPTEL Course and Virtual labs on the web.

w.e.f. the academic year 2015-16

DEPARTMENT OF MATHEMATICS
SYLLABUS FOR BRIDGE COURSE BE 2/4-FIRST SEMESTER (for All branches)
MATHEMATICS

Instruction :1 period week	SubjectReferenceCode: **MA2040**
SemesterExamMarks: **25**	DurationofSemesterExam:**90 Min**

Unit -I (6 Periods):
Basics of Statistics & Probability: Measure of central tendency (Mean, Median & Mode) - Definition of Probability - Addition & Multiplication theorem - Discrete random variable

Unit – II (6 Periods):
Integral Calculus: Methods of integration- Multiple Integrals -Applications of Integration - areas - Surface areas - Volume of solid of revolution

LEARNING RESOURCES:

1. B.S. Grewal , Higher Engineering Mathematics.
2. Fundamentals of Mathematical Statistics by Gupta & Kapoor
3. Integral calculus by Shantinarayan

VASAVI COLLEGE OF ENGINEERING (Autonomous)
Ibrahimbagh, Hyderabad-500 031, Telangana State

DEPARTMENT OF PHYSICS

SYLLABUS FOR BRIDGE COURSE BE 2/4-FIRST SEMESTER (All branches)
PHYSICS OF MATERIALS

Instruction : 1 period/week	SubjectReferenceCode: **PH2130**
SemesterExamMarks: **25**	DurationofSemesterExam:**90 Min**

Course objectives	**Course Outcomes** *Student should be able*
• To apply basic principles of physics in field of engineering • Analyze the characteristics of semiconductor devices • To take up research at Undergraduate Level in new and emerging areas like materials science including magnetic dielectrics and nanotechnology	• Differentiate properties, characteristics and applications of various materials like magnetic, dielectric and semiconducting materials • Inquire the new trends in interdisciplinary research area such as Magnetic materials, dielectric materials Semiconductors and nanotechnology

Unit -I

1. Dielectric Materials: (3 periods)

Polar and Non polar dielectrics-Different types of polarizations in dielectrics-Ferro-electric materials: properties and applications.

2. Magnetic Materials: (3 periods)

Ferro, Ferri and anti ferro magnetic materials and their properties, Domain theory of ferromagnetism- Hysteresis (B-H) curve-soft and hard magnetic materials

Unit – II:

1. Semiconductor Devices: (3 periods)

Fermi energy in semiconductor- Intrinsic carrier concentration of semiconductor-Characteristics of Photo diode and solar cell

2. Nano Materials: (3 periods)

Distinction between Bulk, thin and nano material-Surface to volume ratio-Quantum confinement-Basic properties of nano-materials, Applications of Nano materials and CNT's.

LEARNING RESOURCES:

1. Introduction to Solid State Physic*s,* Kittel C, Wiley Eastern
2. A text book of Engineering Physics, Avadhanulu & Kshirasagar
3. Applied Physics for Engineers, Neeraj Mehta, PHI
4. N Chattopadhyay, K. K.Banerjee- Introduction to Nanoscience and Nanotechnology, PHI

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DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

SYLLABUS FOR BRIDGE COURSE BE 2/4-FIRSTSEMESTER(for All branches)

Instruction :2periodsweek	SubjectReferenceCode: **CS 2091**
SemesterExamMarks: **50**	DurationofSemesterExam:**3hr**

C-PROGRAMMING LAB

(for All branches of 2/4 B.E-I SEMESTER)

1. Finding roots of quadratic equation
2. Check whether a given number is (i) Prime (ii) Perfect (iii) Strong
3. Sin x and Cos x values using series expansion.
4. Menu driven program to calculate income tax
5. Generating Pascal's Triangle
6. Frequency of occurrence of characters and special characters like \n, \t, white spaces.
7. Bubble sort, Selection sort using arrays
8. Linear search and Binary Search.
9. Functions to find maximum and minimum of given set of numbers, interchange two numbers
10. Recursion: Factorial, Fibonacci, GCD of given numbers
11. Functions for string manipulations without using library functions
12. String comparisons and sorting using pointers to strings.
13. Matrix addition and multiplication using pointers
14. Programs on Structures and Unions
15. File handling programs, Finding the no: of characters, words and lines of given text file.
16. **Mini Project**: Simple application using the concepts of C language

Learning Resources:

1. B.A.Forouzan & Richard F.Gilberg, *A Structured Programming Approach using C*, 3rd Edition, Cengage Learning, 2013
2. Brian W. Kernighan and Dennis M. Ritchie, *The C Programming Language,* 2nd Edition, Prentice-Hall, 2006
3. E.Balagurusamy, *Programming in ANSI C*, TMG, 4th Edition, 2008.

DEPARTMENT OF HUMANITIES AND SOCIAL SCIENCES (for All branches)
SYLLABUS FOR BRIDGE COURSE BE 2/4– SECOND SEMESTER
ELT-LAB

Instruction :2periodsweek	SubjectReferenceCode: **HS2231**
SemesterExamMarks: **50**	DurationofSemesterExam: 2hrs

Course objectives	Course Outcomes
• Use language effectively without mother tongue influence. • Converse in various situations. • Make paper and power point presentations. • Listen to audio clippings, exchange dialogues and write short texts. • Speak effectively using discourse markers. • Read and understand various forms of texts and review them.	• Pronounce words in isolation as well as in spoken discourse. • Research and sift information to make presentations. • Comprehend the tone and tenor of various types of speeches from media and classroom lectures. • Listen for gist and make inferences from various speeches. • Identify connectives and transitions in various speeches. • Use connectives and make transitions effectively while speaking

PHONETICS LAB- TOPICS

1 **Introduction to English Phonetics:** Introduction to auditory, acoustic and articulatory phonetics. Organs of speech: the respiratory, articulatory and phonatory systems

2 **Sound System of English:** Phonetic sounds, Introduction to International Phonetic Alphabet, Classification and Description of English Phonemic sounds; Minimal pairs: The Syllable: Types of syllables; Difficulties of Indian speakers with sound of English.

3 **Rhythm and Intonation:** Introduction to rhythm and intonation; Major patterns of intonation in English with their semantic implications; difficulties of Indian speakers with sound of English.

INTERACTIVE COMMUNICATION SKILLS LAB-TOPICS

1 **Group discussion:** Objectives of GD, Types of GDs; Initiating, Continuing, and concluding a GD.

2 **Debate:** Understanding thedifferences between a debate and a group discussion, essentials of debate, concluding a debate.

3 **Presentation Skills:** Making Effective Presentations, Expressions which can be used in Presentations, Use of Non-Verbal Communication, Coping with Stage Fright, Handling Question and Answer Session; Use of Audio-Visual Aids, PowerPoint Presentations.

4 **Public Speaking:** Advantages of public speaking, essentials of an effective speech, types of delivery, rehearsal techniques, planning and delivering a speech.

DEPARTMENT OF INFORMATION TECHNOLOGY

ALMANAC FOR B.E - II & III year - I Semester [all branches]

S.No.	Particulars	Date
1	Commencement of Instruction	11-07-2016
2	I Class Test	29-08-2016 to 01-09-2016
3	II Class Test	26-10-2016 to 29-10-2016
4	Last date of Instruction	29-10-2016
5	Preparation holidays & Practical Examinations	31-10-2016 to 12-11-2016
6	Commencement of Theory Examinations	14-11-2016

ALMANAC FOR B.E - II & III year - II Semester [all branches]

S.No.	Particulars	Date
1	Commencement of Instruction	26-12-2016
2	I Class Test	13-02-2017 to 16-02-2017
3	II Class Test	11-04-2017 to 15-04-2017
4	Last date of instruction	15-04-2017
5	Preparation holidays & practical Examinations	17-04-2017 to 29-04-2017
6	Commencement of Theory Examinations	01-05-2017
7	Summer vacation	01-05-2017 to 08-07-2017
8	Commencement of I Semester for the Academic year 2017-2018	10-07-2017