

ADIKAVI NANNAYA UNIVERSITY:: RAJAMAHENDRAVARAM
UNIVERSITY COLLEGE OF ENGINEERING
ELECTRONICS AND COMMUNICATION ENGINEERING
COURSE STRUCTURE
B.Tech, Four Year Degree Course
(From the admitted batch of 2017-2018 under CBCS Scheme)



UNIVERSITY COLLEGE OF ENGINEERING
ADIKAVI NANNAYA UNIVERSITY
RAJAMAHENDRAVARAM – 533 296

IIIRD B TECH (ECE) STRUCTURE & SYALLBUS**III B.Tech II Semester ECE w.e.f 2017-18**

Sub Code	Subject	Hrs/Week		Max Marks		Total Marks	Credits
		Theory	Lab	Internal	External		
BTECE601	MICROPROCESSORS AND MICROCONTROLLERS	4	--	25	75	100	4
BTECE602	MICROWAVE ENGINEERING	4	--	25	75	100	4
BTECE603	VLSI DESIGN	4	--	25	75	100	4
BTECE604	DIGITAL SIGNAL PROCESSING	4	--	25	75	100	4
BTECE605	ELECTIVE-1	4	--	25	75	100	4
	A) OBJECT ORIENTED PROGRAMMING THROUGH JAVA B) SOFTWARE ENGINEERING C) DATA MINING AND WARE HOUSING D) BIO-MEDICAL ENGINEERING						
BTECE606	COMPUTER NETWORKS	4	--	25	75	100	4
BTECE607	MICROPROCESSORS AND MICROCONTROLLERS LAB	--	3	50	50	100	2
BTECE608	DIGITAL SIGNAL PROCESSING LAB	--	3	50	50	100	2
BTECE609	*SOFT SKILLS LAB	--	3	50	--	50	--
Total		24	09	300	550	850	28

*the credits of the softskills lab will not be consider for SGPA/CGPA

NOTE: After the end semester examination of III-II every student should be complete 45 days Industrial Internship or Technical Course. The documentation work will be submitted at the end of IV-I which is for internal evaluation of 100 marks.

BTECE601: MICROPROCESSORS AND MICROCONTROLLERS**Theory: 4 Hrs/week****Credits : 4****Int Marks: 25****Ext Marks :75**

Microprocessor: introduction to microcomputers and microprocessors, introduction and architecture of 8086 family, addressing modes, instruction description and assembler directives of 8086 microprocessors.

UNIT – II

8086 programming and system connections: Program development steps, writing programs for use with an assembler, assembly language program development tools, writing and using procedures and assembler macros. An example of minimum mode system, addressing memory and ports in microcomputer system. 8086 interrupts and interrupt responses.

UNIT – III

Digital Interfacing: Programmable parallel ports, handshake IO, interface Microprocessor to keyboards. **Analog interfacing:** DAC principle of operation, specifications and different types of DAC's and interfacing. **Programmable devices:** Introduction to Programmable peripheral devices 8255, 8254, 8259, 8251, DMA data transfer, RS232 communication standard.

UNIT – IV

Introduction To Microcontrollers: comparing microprocessors and microcontrollers, Architecture:- Architecture of 8051, pin configuration of 8051 microcontroller, hardware input pins, output pins ports and external memory, counters and timers, serial data input and output and interrupts. **Programming & interfacing 8051:-** Addressing modes of 8051 microcontroller, Instruction set of 8051 microcontroller, Simple simple programs using 8051 microcontroller.

TEXT BOOKS:

1. Duglus V. Hall, Microprocessor and Interfacing, Revised 2nd Edition, TMH, 2006.
2. Kenneth J. Ayala, The 8051 Microcontroller Architecture Programming and Applications, 2nd Edition, Penram International Publishers (I), 1996.

REFERENCE BOOKS:

1. John Uffenbeck, The 80X86 Family, Design, Programming and Interfacing, 3rd Edition, Pearson Education, 2002.
2. Barry Bray, the intel microprocessors 8086/8088, 80186/80188, 80286, 80386, 80486, Pentium processors, architecture, programming, and interfacing, 6th Edition, PHI edition.

UNIT –I

MICROWAVE TRANSMISSION LINES: Introduction, Microwave Spectrum and Bands, Applications of Microwaves. Rectangular Waveguides – TE/TM mode analysis, Expressions for Fields, Characteristic Equation and Cut-off Frequencies, Filter Characteristics, Dominant and Degenerate Modes, Sketches of TE and TM mode fields in the cross-section, Mode Characteristics.

UNIT -II

WAVEGUIDE COMPONENTS : Coupling Mechanisms – Probe, Loop, Aperture types. Waveguide Phase Shifters – Dielectric, Rotary Vane types. Scattering Matrix– Significance, Formulation and Properties. S-Matrix Calculations for – 2 port Junction, E- plane and H-plane Tees, Magic Tee, Hybrid Ring; Directional Couplers – 2Hole, Bethe Hole types, Ferrite Components– Faraday Rotation, S-Matrix Calculations for Gyrator, Isolator, Circulator.

UNIT –III

MICROWAVE TUBES : Microwave tubes – O type and M type classifications. O-type tubes : 2 Cavity Klystrons – Structure, Reentrant Cavities, Velocity Modulation Process and Applegate Diagram, Bunching Process and Small Signal Theory – Expressions for o/p Power and Efficiency. Reflex Klystron.

UNIT -IV

MICROWAVE MEASUREMENTS: Description of Microwave Bench – Different Blocks and their Features, Precautions; Microwave Power Measurement – Bolometer Method. Measurement of Attenuation, Frequency, VSWR, Cavity Q. Impedance Measurements.

TEXT BOOKS :

1. Microwave Devices and Circuits – Samuel Y. Liao, PHI, 3rd Edition, 1994.

REFERENCE BOOKS:

1. Foundations for Microwave Engineering – R.E. Collin, IEEE Press, John Wiley, 2nd Edition, 2002.
2. Microwave Engineering Passive Circuits – Peter A. Rizzi, PHI, 1999.

UNIT-I

Introduction And Basic Electrical Properties of Mos Circuits: Introduction to IC technology, Fabrication process: nMOS, pMOS and CMOS. $I_{ds} - V_{ds}$ Relationships, Aspects of MOS transistor Threshold Voltage, MOS transistor Trans, Output Conductance and Figure of Merit. nMOS Inverter, Pull-up to Pull-down Ratio for nMOS inverter driven by another nMOS inverter, and through one or more pass transistors. Various pull ups, The CMOS Inverter, Latch-up in CMOS circuits, Bi-CMOS Inverter, Comparison between CMOS and BiCMOS technology.

UNIT-II

VLSI Circuit Design Processes: MOS Layers, Stick Diagrams, Design Rules and Layout, $2\mu\text{m}$ Double Metal, Double Poly, CMOS, Contacts and Layout Diagrams of NAND and NOR gates and CMOS inverter, Symbolic Diagrams-Translation to Mask Form.

UNIT-III

Basic Circuit Concepts: Sheet Resistance, Sheet Resistance concept applied to MOS transistors and Inverters, Area Capacitance of Layers, Standard unit of capacitance, Some area Capacitance Calculations, The Delay Unit, Inverter Delays, Driving large capacitive loads, Propagation Delays, Wiring Capacitances, Choice of layers.

Gate level Design: Switch logic, Gate logic, Logic gates and other complex gates, Switch logic, Alternate gate circuits.

Physical Design: Floor-Planning, Placement, routing, Power delay estimation, Clock and Power routing.

UNIT-IV

FPGA Design: FPGA design flow, Basic FPGA architecture, FPGA Technologies, FPGA families- Altera Flex 8000FPGA, Altera Flex 10FPGA, Xilinx XC4000 series FPGA, Xilinx Spartan XL FPGA, Xilinx Spartan II FPGAs, Xilinx Vertex FPGA. Case studies: FPGA Implementation of Half adder and full adder.

TEXT BOOKS:

1. Essentials of VLSI Circuits and Systems - Kamran Eshraghian, Douglas and A. Pucknell and Sholeh Eshraghian, Prentice-Hall of India Private Limited, 2005 Edition.
2. CMOS Digital Integrated Circuits Analysis and Design- Sung-Mo Kang, Yusuf Leblebici, Tata McGraw-Hill Education, 2003.

REFERENCE BOOKS:

1. Chip Design for Submicron VLSI: CMOS layout and Simulation, - John P. Uyemura, Thomson Learning.
2. Advanced Digital Design with the Verilog HDL, Michael D.Ciletti, Xilinx Design Series, Pearson Education.

Theory : 4hrs/Week**Credits : 4****Int Marks: 25****Ext Marks: 75****UNIT-I**

INTRODUCTION : Introduction to digital signal processing, discrete time signals & sequences, classifications of discrete time systems linear shift-Invariant systems, stability and causality, linear constants, coefficient different equations, frequency domain representation of discrete time signals and systems, Z-Transforms, difference equation using Z-transforms, system function .

UNIT-II

DISCRETE FOURIER SERIES & FOURIER TRANSFORMS: Properties of discrete fourier series, DFS representation of periodic sequences, convolution of sequences, discrete fourier transforms, properties of DFT, linear filtering methods on DFT, Fast Fourier Transforms, Radix-2 decimation in time and frequency, Inverse FFT, FFT Algorithms.

UNIT-III

DESIGN OF IIR FILTERS & REALIZATION: Design of IIR filter from analog filters, Analog filter approximation (Butterworth And Chebyshev), Analog and digital frequency Transformations, Basic structures of IIR systems, Transposed Form, Characteristics of FIR Digital Filters, Frequency Response, Design of FIR Digital Filters using Window Techniques and Frequency sampling Techniques comparison of IIR&FIR Filters .

UNIT-IV

MULTIRATE DIGITAL SIGNAL PROCESSING: Decimation, Interpolation sampling rate conversion, Implementation of Sampling rate Converters.

TEXTBOOKS:

1. Discrete Time Signal Processing – A.V. Oppenheim and R.W. Schaffer PHI
2. Digital Signal Processing – K. Raja Rajeswari, I.K. International Publishing House
3. Digital Signal Processing, Principles, Algorithms and Applications : John G . Proakis, Dimitris, G. Manolakis, Pearson Education PHI 4th ed, 2007

REFERENCE BOOKS:

1. Digital Signal Processing – Ramesh Babu, Sci Tech Publications
2. Digital Signal Processing – Andreas Antoniou, TATA McGraw Hill, 2006
3. Digital Signal Processing – MH Hayes, Schaum's Outlines TATA McGraw Hill, 2007.

ELECTIVE-1**BTECE605A:OBJECT ORIENTED PROGRAMMING THROUGH JAVA****Theory : 4 Hrs/week****Credits : 4****Int Marks : 25****Ext Marks : 75****UNIT-I**

Fundamentals Of Object Oriented Programming: Introduction, Object oriented paradigm, Basic concepts of OOP, Objects and Classes, Data Abstraction and Encapsulation, Inneritance, Polymorphism, Dynamic Binding, Message Communication, **Java Evolution:** Java History, Java Features, How Java Differs from C and C++, Java and Internet, Java and World wide Web, Web Browsers, Hardware and Software requirements, Java Support systems, Java Environment, **Overview of Java language:** Introduction, Simple Java Program, More of Java, An Application with two classes, Java Program Structure, Java Tokens, Java Statements, Implementing a Java Program, Java Virtual Machines, Command line arguments, Programming style, **Constants Variables and Data Types:** Declaration of Variables, Scope of Variables, Symbolic Constants,

UNIT-II

Operators And Expressions: Introduction, Arithmetic Operators, Bitwise Operators, Special type Operators, Arithmetic Operators, Evaluation of Expressions, Precedence and Associativity , mathematical Functions, Decision Making and Branching, Decision making Looping, **Classes Objects, and Methods:** Introduction, defining a Class, Adding Variables, Adding Methods, Creating Objects, Accessing Class Members, Constructors, Methods of Overloading, Overloading Methods, Final Variables and Methods, Final Classes, Finalizer methods, Abstract Methods and Classes, Visibility Control.

UNIT-III

Arrays, Strings, Vectors: Different types of Arrays, Strings, Vectors, Wrapper Classes, **Interfaces: Multiple Interface:** Introduction, Defining Interfaces, Extending Interfaces, Implementing Interfaces, Accessing Interface Variables, **Packages: Putting Classes Together:** Introduction, Java API packages, Using System packages, Naming Conventions, Creating Packages, Accessing a Package, Using A Package, Hiding Classes, **Multithreaded Programming:** Introduction, creating, threads, Extending the Thread Classes, Stopping and Blocking a thread, Life Cycle of Thread, Using thread Methods, Thread Exceptions, thread Priority , Synchronization.

UNIT-IV

Managing Errors And Exceptions: Introduction, Types of Errors, Exceptions, Syntax of Exception, Handling Code, Multiple Catch Statements, Using Finally Statement, Throwing out Expectations, Using Expectations for Debugging, **Applet Programming: Introduction,** How Applets differ from Applications, Preparing to write Applets, Building Applet Code, Applet Life Cycles Creating an Executive life Cycle designing, A Web Page, Applet Tag, Adding Applet to HTML files, Running the Applet, More about the Applet Tag, Passing Parameters to Applets, Aligning the Displays, More about HTML tags, Displaying Numerical Values, Getting Input from the User **Managing input output files in Java:** Introduction, Concept of Streams, Stream Classes, Character Stream classes, using Streams other useful I\O Classes, Using the File Classes, Input output Expectations, Creation of files, Reading/ Writing Characters, Reading/ Writing Bytes, handling Primitive Data types, Concatenating and Buffering Files, random Access Files, Interactive Input/Output, Other Stream Classes.

TEXT BOOKS:

1. Programming with Java, : E. Balaguruswamy, Tata McGrawHill Publications.

REFERENCE BOOKS:

1. Java Complete reference Tata McGraw Hill Publications.

ELECTIVE-1**BTECE605B: SOFTWARE ENGINEERING****Theory : 4 Hrs/week****Credits : 4****Int Marks : 25****Ext Marks : 75****UNIT-I**

Software Engineering Process Models: The Software Problem, Cost, Schedule, and Quality, Scale and Change, Software Processes: Process and Project, Component Software Processes, Software Development Process Models: Waterfall Model, Prototyping, Iterative Development, Rational Unified Process, Timeboxing Model, Extreme Programming and Agile Processes, Using Process Models in a Project, Project Management Process

UNIT-II

Software Requirements Analysis and Specification: Value of a Good SRS, Requirement Process, Requirements Specification, Desirable Characteristics of an SRS, Components of an SRS, Structure of a Requirements Document, Data Flow Diagrams for analysis. **Planning:** Effort Estimation, Top-Down Estimation Approach, Bottom-Up Estimation Approach, Project Schedule and Staffing, Quality Planning, Risk Management Planning, Risk Management Concepts, Risk Assessment, Risk Control, A Practical Risk Management Planning Approach, Project Monitoring Plan, Measurements, Project Monitoring and Tracking, Detailed Scheduling. **Software Architecture:** Role of Software Architecture, Architecture Views, Component and Connector View: Components, Connectors, Architecture Styles for C&C View, Pipe and Filter, Shared-Data Style, Client-Server Style

UNIT-III

Design: Design Concepts, Coupling, Cohesion, The Open-Closed Principle, Function Oriented Design, Structure Charts, Structured Design Methodology, An Example **Coding:** Programming Principles and Guidelines, Structured Programming, Information Hiding, Some Programming Practices, Coding Standards, Incrementally Developing Code, An Incremental Coding Process, Test-Driven Development, Pair Programming. Managing Evolving Code: Source Code Control and Build, Refactoring.

UNIT-IV

Unit Testing: Testing Procedural Units, Code Inspection, Planning, Group Review Meeting, Metrics, Size Measures, **Complexity Metrics Testing:** Testing Concepts, Error, Fault, and Failure, Test Case, Test Suite, and Test Harness, Levels of Testing, Testing Process, Test Plan, Test Case Design, Test Case Execution, Black-Box Testing, Equivalence Class Partitioning, Boundary Value Analysis, Pairwise Testing, State-Based Testing, White-Box Testing, Control Flow-Based Criteria, Test Case Generation and Tool Support, Metrics, Coverage Analysis, Reliability, Defect Removal Efficiency

TEXT BOOK:

1. A Concise Introduction to Software Engineering – Pankaj Jalote, Springer Publications.

REFERENCE BOOKS:

1. Software Engineering: A Practitioner's Approach – Roger S Pressman, Seventh Edition McGrawHill International Edition.
2. Software Engineering, Ian Sommerville, Ninth edition, Pearson education.
3. Fundamentals of Software Engineering. Rajib Mall. Third Edition. PHI.

ELECTIVE-1

BTECE605C: DATA MINING AND WARE HOUSING

Theory : 4 Hrs/week

Credits : 4

Int Marks : 25

Ext Marks : 75

UNIT-I

Data Ware Housing And OLAP Technology: An Overview Of Data Ware House Basic Concepts, Data ware House Modelling : Data Cube And OLAP , Data Warehouse and Implementation.

Data Processing: An Overview , Data Cleaning , Data Integration, Data Reduction, Data Transformation And Data Discretization, From Data warehousing to Data Modelling.

UNIT-II

Introduction Data Mining: Motivation And Importance, What Is Data Mining , Data Mining on What Kind Of Data, What Kind Of Patterns Can Be Mind, Which Technologies Are Used, Major Issues In Data Mining. **Getting To Know Your Data:** Data Objects And Attributes Types, Basic Statistical Descriptions of Data, Data Visualization, Measuring Data Similarities And Dissimilarity.

UNIT-III

Concept Description : Characterization And Comparison, What Is Concept Description, Data Generalization By Attribute-Oriented Induction(Aoi), Aoi For Data Characterization, Efficient Implementation Of AOI, AOI For Class Comparison.

Mining Frequent Pattrens, Association With Correlations: Basic Concepts, Frequent, Itemset Mining Methods: Apriori Method, Generating Association Rules, Improving The Efficiency of Apriori, Pattern-Growth Approach For Mining Frequent Itemset, Mining Frequent Itemsets Using Vertical Data Format.

UNIT-IV

Classification Basic Concepts: Basic Concepts, Decision Tree Induction: Decision Tree Induction, Attribute Selection Measure,, Tree Pruning, Bayes Classification Methods, Classification By Back Propagation Method, Support Vector Machine . **Cluster Analysis:** Cluster Analysis, Partitioning Methods, Hierarchal Methods, Density Based Methods-Dbscan..

TEXT BOOKS:

1.Datamining Concepts And Technics-Jieweihan, Micheline kamber And Jain Pie, Morgan Kaufman Publications 3rd Edition.

REFERENCE BOOKS:

- 1.Introduction To Data Mining-Pang-Ning-tan, Michaeil, Michael Steinbach, Vipin Kumar.
- 2.Introduction To Data Mining Ardiaan, Addison, Wesly Publications.
- 3.Data Mining Techniques , A.K Pujari, University Press.

ELECTIVE-1**BTECE605D: BIO-MEDICAL ENGINEERING****Theory : 4 Hrs/week****Credits : 4****Int Marks : 25****Ext Marks : 75****UNIT-I**

INTRODUCTION TO BIOMEDICAL ENGINEERING: Age of Biomedical Engineering, Development of Biomedical Instrumentation, Man Instrumentation System, Components of the Man-Instrument System, Physiological System of the Body, Problems Encountered in Measuring a Living System.

UNIT-II

BIO ELECTRIC POTENTIALS, ELECTRODES AND TRANSDUCERS: Bioelectric Potentials, Sources of Bioelectric Potentials, Resting and Action Potentials, Propagation of Action Potential, Bioelectric Potentials-ECG, EEG and EMG, Evoked Responses, Introduction to electrodes, Electrode Theory, Bio potential Electrodes, Examples of Electrodes, Basic Transducer Principles, Biochemical Transducers, The Transducer and Transduction Principles, Active Transducers, Passive Transducers, Transducers for Biomedical Applications, Pulse Sensors, Respiration Sensor, Transducers with Digital Output.

UNIT-III

CARDIOVASCULAR SYSTEM AND MEASUREMENTS: The Heart and Cardiovascular System, Electro Cardiography, Blood Pressure Measurement, Measurement of Blood Flow and Cardiac Output, Measurement of Heart Sound, Plethysmography.

MEASUREMENTS IN THE RESPIRATORY SYSTEM: The Physiology of the Respiratory System, Tests and Instrumentation for the Mechanics of Breathing, Respiratory Therapy Equipment.

UNIT-IV

PATIENT CARE AND MONITORING: Elements of Intensive-Care Monitoring, Patient Monitoring Displays, Diagnosis, Calibration and Repair ability of Patient-Monitoring Equipment, Other Instrumentation for Monitoring Patients, Organization of the Hospital for Patient-Care Monitoring, Pacemakers, Defibrillators, Radio Frequency Applications of Therapeutic use.

TEXT BOOKS:

1. "Bio-Medical Electronics and Instrumentation", Onkar N. Pandey, Rakesh Kumar, Katson Books.
2. "Bio-Medical Instrumentation", Cromewell, Wiebell, Pfeiffer

REFERENCE BOOKS:

1. Hand Book of Bio-Medical Instrumentation – R.S. Khandpur, (TMH)
2. "Introduction to Bio-Medical Equipment Technology", 4th Edition, Joseph J. Carr, John M. Brown, Pearson Publications.
3. "Hand Book of Bio-Medical Instrumentation", Instrumentation", Kandahar. McGrawHill.

BTECE606: COMPUTER NETWORKS**Theory: 4 Hrs/week****Credits: 4****Int Marks: 25****Ext Marks: 75****UNIT-I**

Introduction To Computer Networks: Introduction, Network Hardware and Software, Reference Models: OSI, TCP/IP, Data Communication Services & Network Examples, Internet Based Application.

Data Communications: Transmission Media: Guided media, Unguided media: Wireless, Multiplexing: FDM, TDM, Switching: Message, Circuit, Packet.

UNIT-II

Data Link Layer: Data Link Control, Error Detection & Correction, Sliding Window Protocols, LAN & MANs: IEEE Standards for LANs & MANs – IEEE Standards 802.3(Ethernet), 802.4(Token Bus), 802.5(Token Ring).

Design Issues In Networks: Routing Algorithms: Optimality principle, shortest path, Flooding, Distance Vector Routing, Link State Routing, and Hierarchical Routing. Congestion Control: Open Loop (Retransmission, Window Policy, Acknowledgment Policy, Discarding Policy, Admission Policy), Closed Loop (Back Pressure, Choke Packet, Implicit Signaling, Explicit signaling), Token Bucket Algorithm, Leaky Bucket Algorithm.

UNIT-III

Internetworking: How Networks Differ, how Networks connected, Tunneling, Internetwork Routing, Packet Fragmentation, Network Layer, IP Version 4 Protocol, IP Address, IPv6.

Transport layer: Transport Service, Elements of Transport Protocols, Congestion control, Internet Transport Protocols: UDP, TCP, performance issues. Overview of DNS, SNMP, Electronic Mail, FTP, TFTP, BOOTP, HTTP Protocols, WWW.

UNIT-IV

Network Devices: Overview of Repeaters, Hubs, Switch, Modems, Bridges (use of bridges, learning bridges, spanning tree bridges), Routers, Gateways, Multiprotocol Routers, Wireless Access Points, Transceivers, Firewalls, and Proxies.

Advanced Concepts In Networks: Overview of Cellular Networks, Adhoc Networks, Mobile Adhoc Networks and Virtual Private Networks. Delay Tolerant Networks (DTN) IPv6

TEXT BOOKS:

1. Computer Networks, Andrews S. Tanenbaum, Edition 5, PHI, ISBN:81-203-1165-5
2. Data Communications and Networking, Behrouz A Forouzan, TMH, 2nd Edition, ISBN: 0-07-049935-7

REFERENCE BOOKS:

1. Computer Networks, mayank Dev, CENGAGE.
2. Computer Networks, A system Approach, 5th Edition, Larry L Perterson & Bruce S Davie, Elsevier.
3. An Engineering Approach to Computer Networks – S. Keshav, 2nd Edition, Pearson Education.
4. Understanding Communications & Networks, 3rd edition, W.A. Shay, Thomson.

BTECE607:MICROPROCESSORS AND MICROCONTROLLERS LAB**Lab hours : 3 Hrs/week****Credits : 2****Int Marks : 50****Ext Marks : 50****LIST OF EXPERIMENTS:****PART- A: 8086 Assembly Language Programming using Assembler Directives****(Minimum of 5 Experiments has to be performed)**

1. Sorting.
2. Multibyte addition/subtraction
3. Sum of squares/cubes of a given n-numbers
4. Addition of n-BCD numbers
5. Factorial of given n-numbers
6. Multiplication and Division operations
7. Stack operations
8. BCD to Seven segment display codes

PART- B: 8086 interfacing (Minimum of 3 Experiments has to be performed)

1. Hardware/Software Interrupt Application
2. A/D Interface through Intel 8255
3. D/A Interface through Intel 8255
4. Keyboard and Display Interface through Intel 8279
5. Generation of waveforms using Intel 8253/8254

PART- C: 8051 Assembly Language Programs (Minimum of 3 Experiments has to be performed)

1. Finding number of 1's and number of 0's in a given 8-bit number
2. Addition of even numbers from a given array
3. Ascending / Descending order
4. Average of n-numbers

PART-D: 8051 Interfacing (Minimum of 3 Experiments has to be performed)

1. Switches and LEDs
2. 7-Segment display (multiplexed)
3. Stepper Motor Interface
4. Traffic Light Controller

BTECE608: DIGITAL SIGNAL PROCESSING LAB**Lab : 3 Hrs/week****Credits : 2****Int Marks : 50****Ext Marks : 50****LIST OF THE EXPERIMENTS:****(Any 10 Experiments Should Be Done)**

1. Generation of Discrete Time signals For discrete Signals Using MATLAB & CC Studio .
2. To verify Linear Convolution Using MATLAB & CC Studio.
3. To verify Circular Convolution Using MATLAB & CC Studio.
4. To find Addition of sinusoidal signals Using MATLAB & CC Studio.
5. To verify DFT And IDFT sinusoidal signals Using MATLAB & CC Studio .
6. Transfer Function Stability Analysis Using Pole-Zero Plot, bode-plot, Nyquist Plot, Z-Plane Plot
7. Frequency Response of IIR low pass Butterworth filter .
8. Frequency Response of IIR High pass Butterworth filter.
9. Frequency Response of IIR low pass Chebyshev filter .
10. Frequency Response of IIR High pass Chebyshev filter .
11. Frequency Response of FIR low pass using Rectangle Window.
12. Frequency Response of FIR low pass Using Triangle Window .

BTECE 609: SOFT SKILLS LAB

Lab : 3 Hrs/week
Int. Marks: 50

Credits:--
Ext. Marks: 50

PART I

SOFT SKILLS I

1. Self Introduction
2. SWOT and SWOC Analysis
3. Presentation Skills
4. JAM Session
5. Group Discussion
6. Debate

PART II

SOFT SKILLS II

1. Motivation – self image – goal setting
2. Managing changes – time management – Stress management
3. Leadership traits – team work
4. Career and life planning.
5. Multiple intelligences – emotional intelligence – spiritual quotient (ethics)
6. Intercultural communication
7. Creative and critical thinking
8. Learning styles and strategies.

PART III

ACADEMIC/ SCIENTIFIC WRITING

1. ABC of Technical Communication
2. Style and Objectivity
3. Report Writing
4. Referencing

PART IV

INTERVIEW SKILLS

1. Types of Resumes
2. Writing Resume
3. Job application letter
4. Joining Report writing
5. Pre-interview preparation
6. Types of interview questions
7. Body Language and Dress Code
8. Technical Interview