



SCHEME OF STUDIES & EXAMINATIONS

Department: Electronics & communication Engineering – 5th Semester

Sr. No	Course No.	Course Title	Teaching Schedule			Marks of class work	Examination Marks		Total	Credit	Duration of Exam
			L	T	P		Theory	practical			
1	ECE301B	COMMUNICATION ENGINEERING	3	1	-	25	75	-	100	4	3
2	ECE303B	ELECTRONIC MEASUREMENT AND INSTRUMENTATION (ECE, AEI & 6 th sem IC)	3	1	-	25	75	-	100	4	3
3	ECE305B	CONSUMER ELECTRONICS	3	1	-	25	75	-	100	4	3
4	ECE307B	LINEAR INTEGRATED CIRCUIT (ECE, BME)	3	1	-	25	75	-	100	4	3
5	ECE309B	MICROPROCESSORS AND INTERFACING (BME, CSE, AEI)	3	1	-	25	75	-	100	4	3
6	CSE 204 B	OBJECT ORIENTED PROGRAMMING (ECE, common with 4 th sem. CSE, AEI)	3	1	-	25	75	-	100	4	3
7	CSE224B	OBJECT ORIENTED PROGRAMMING LAB (ECE, common with 4 th sem. CSE, AEI)	-	-	2	20	-	30	50	1	3
8	ECE323B	ELECTRONIC MEASUREMENT AND INSTRUMENTATION LAB (ECE, AEI & 6 th sem IC)	-	-	2	20	-	30	50	1	3
9	ECE325B	CONSUMER ELECTRONICS (LAB)	-	-	2	20	-	30	50	1	-
10	ECE327B	LINEAR INTEGRATED CIRCUIT LAB	-	-	2	20	-	30	50	1	3
11	ECE329B	MICROPROCESSORS AND INTERFACING LAB (BME, CSE, AEI)	-	-	2	20	-	30	50	1	3
12	ECE335B	PROFESSIONAL TRAINING - I	-	-	2	50	-	-	50	2	-
Total			18	6	12	300	450	150	900	31	

Note:

- Every student has to participate in the sports activities. Minimum one hour is fixed for sports activities either in the morning or evening. Weight-age of Moral Values & Ethics and Sports are given in General Proficiency Syllabus.
- Students will be permitted to opt for any one elective run by the other department (i.e. open electives) and for any two electives, one from Elective-I and one from Elective-II run by the department. However, the department shall offer those elective for which they have expertise. The choice of the students for any elective shall not be binding for the department to offer, if the department does not have expertise. The minimum strength of the students should be 20 to run an elective course.
- Assessment of Professional Training-II, undergone at the end of VI semester, will be based on seminar, viva-voce, report and certificate of Professional Training obtained by the student from the industry, institute, research lab, training center etc
- The students will be allowed to use non-programmable scientific calculator. However, sharing/exchange of calculator is prohibited in the examination.

Subject to be taught to other departments which are not in above scheme

Sr. No	Course No.	Course Title	Teaching Schedule			Marks of class work	Examination Marks		Total	Credit	Duration of Exam
			L	T	P		Theory	practical			
1	ECE311B	INTEGRATED ELECTRONICS (EE)	3	1	-	25	75	-	100	4	3
2	ECE331B	INTEGRATED ELECTRONICS LAB (EE)	-	-	2	20	-	30	50	1	3



SYLLABUS: B Tech (ECE)

Department: Electronics & communication engineering– 5th Semester

Subject: COMMUNICATION ENGINEERING (Theory)

Subject Code: ECE301B

Detailed Content

Unit No.1 Spectral Analysis:

- Topic No.1 : Fourier Series
- Topic No.2 : Fourier Transform & Its Properties
- Topic No.3 : Convolution & Correlation, Autocorrelation & Cross Correlation
- Topic No.4 : **Elements Of Digital Communication**
- Topic No.5 : Channels For Digital Communication, Model Of Digital Communication
- Topic No.6 : Geometric Interpretation Of Signal
- Topic No.7 : Gram Schmidt, Orthogonalization Procedure
- Topic No.8 : Matched Filters
- Topic No.9 : Estimation: Concept & Criteria, Maximum Likelihood Estimation
- Topic No.10: Adaptive Filters

Unit No.2 Introduction To Information Theory:

- Topic No.11: Measure Of Information, Entropy, Rate Of Information
- Topic No.12: Source Coding Theorem, Huffman Coding, Shannon Fano Coding
- Topic No.13: Discrete Memoryless
- Topic No.14: Channels, Mutual Information, Channel Capacity, Channel Coding Theorem, Channel Capacity Theorem
- Topic No.15: **Error Control Coding**
- Topic No.16: Types Of Codes, Block Code: Coding And Decoding, Hadamard Codes, Hamming Codes, Cyclic Codes
- Topic No.17: Convolution Codes: Coding And Decoding, Trellis Code

Unit No.3 Digital Carrier Modulation And Demodulation Techniques

- Topic No.18: Digital Modulation Formats
- Topic No.19: Coherent Binary Modulation & Demodulation, ASK, BPSK, BFSK
- Topic No.20: Coherent Quadrature Modulation & Demodulation Techniques, QPSK, MSK
- Topic No.21: **Non-Coherent Binary Modulation Techniques:** Non Coherent BFSK, Differential PSK
- Topic No.22: M-Ary Modulation & Demodulation Techniques: M-ARY PSK, M-ARY QAM, M-ARY FSK
- Topic No.23: Synchronization: Carrier & Symbol Synchronization.

Unit No.4 Base Band Shaping For Data Transmission:

- Topic No.24: Discrete Pam Signal, Power Spectra For Digital Pam Signal
- Topic No.25: Inter Symbol Interference
- Topic No.26: Nyquist Criterion For Distortionless Baseband Binary
- Topic No.27: Transmission
- Topic No.28: Correlation Coding, Eye Pattern
- Topic No.29: Base Band M-Ary Pam System
- Topic No.30: Adaptive Equalization For Data Transmission
- Topic No.31: **Spread Spectrum Modulation**, Pn Sequences, A Notion Of Spread Spectrum, Direct Sequence Topic No.32: Spread Spectrum, Frequency Hopping Spread Spectrum, Application

Reference Books:

1. Digital Communication By Simon Haykins – Wile
2. Digital Communicatin By Sklar Ray- Pearson
3. Principle Of Communication Systems By Taub & Schilling – Tmh
4. Electronics Communication Systems By Tomasi – Pearson
5. Communication System By Haykin & Moher- Wiley
6. Digital Communication By J. G. Proakis
7. Digital Communication By B. P. Lathi
8. Communication Systems By Manoj Duhan – I. K. International

Note:

In The Semester Examination, The Examiner Will Set 08 Questions In All Selecting Two From Each Unit. The Candidates Will Be Required To Attempt Five Questions In All, Atleast One From Each Unit. All Questions Carry Equal Marks.



SYLLABUS: B Tech (ECE)

Department: Electronics & Communication Engineering– 5th Semester

Subject: Electronics Measurement And Instrumentation (Theory)

Subject Code: ECE303B

Detailed Content

Unit No. 1 Oscilloscope:

Topic No.1 : Block Diagram, Study Of Various Stages In Brief, High Frequency Cro Considerations, Sampling And Storage Oscilloscope

Topic No.2 : Measurements Of Phase And Frequency (Lissajous Patterns)

Topic No.3 : Dc And Ac Voltage Measurements, Dc And Ac Current Measurements

Topic No.4 : Multimeter, Ohmmeter, Bolometer, Calorimeter, Power Meter

Topic No.5 : Introduction To Digital Meters

Unit No. 2 Generation And Analysis Of Waveforms:

Topic No.6 : Block Diagram Of Pulse Generators, Signal Generators, Function Generators

Topic No.7 : Wave Analyzers, Distortion Analyzers, Spectrum Analyzer, Harmonic Analyzer

Topic No.8 : Introduction To Power Analyzer

Topic No.9 : Study Of Decade Counting Assembly(Dca)

Topic No.10: Frequency Measurements, Period Measurements

Topic No.11: Universal Counters

Topic No.12: Introduction To Digital Meters

Unit No.3 Display Devices:

Topic No.13: Nixie Tubes, Led's, Lcd's

Topic No.14: Discharge Devices

Topic No.15: Strip Charts Recorder, Single Point Recorder, Uv Recorder, Magnetic Tape Recorder

Unit No.4 Transducers:

Topic No.16: Classification, Transducers Of Types: Rlc Photocell, Thermocouple, Etc.

Topic No.17: Basic Schemes Of Measurements Of Displacement, Velocity, Acceleration, Strain, Pressure, Liquid Level & Temperature.

Topic No.18: Dc Signal Conditioning Systems, Ac Signal Conditioning Systems

Topic No.19: Data Acquisition And Conversion System

Topic No.20: Characteristics Of Modern Digital Data

Topic No.21: Acquisition System

Topic No.22: Filter

Topic No.23: Settling Time

Topic No.24: Amplifier Characteristics

Study Scheme				Evaluation Scheme			Total Marks
Lectures Per Week				Internal Assessment	External Assessment (Examination)		
L	T	P	Credits	Max. Marks	Max. Marks	Exam Duration	
3	1	-	4	25	75	3 Hours	100

Text Books :

1. A Course In Electrical And Electronics Measurements And Instrumentation By A.K.Sawhney; Dhanpat Rai & Sons

Reference Books:

1. Electronics Measurements And Instrumentation Techniques By H. Cooper; Phi

2. Electronics Instrumentation By Kalsi; Tmh

Note:

In The Semester Examination, The Examiner Will Set 08 Questions In All Selecting Two From Each Unit. The Candidates Will Be Required To Attempt Five Questions In All, At Least One From Each Unit. All Questions Carry Equal Marks.



SYLLABUS: B Tech (ECE)

Department: Electronics & communication engineering– 5th Semester

Subject: Consumer Electronics (Theory)

Subject Code: ECE305B

Detailed Content

Unit No.1 Monochrome TV (Introduction):

- Topic No.1 : Elements of a TV System, Picture transmission, Sound transmission, Picture reception, Sound reception
- Topic No.2 : Synchronization, Receiver control, Image continuity, Scanning Process
- Topic No.3 : Aspect Ratio, Flicker
- Topic No.4 : Composite Video Signal, Picture Elements, Kell factor
- Topic No.5 : Vertical Resolution, Horizontal Resolution, Video bandwidth
- Topic No.6 : Interlacing, 625 Line System
- Topic No.7 : Bandwidths for TV Transmission, Vertical and horizontal synch detail, Vestigial Side
- Topic No.8 : Band transmission(Advantages and Disadvantages)
- Topic No.9 : Monochrome picture tube
- Topic No.10: Beam reflection, Beam focusing, Screen Phosphor
- Topic No.11: Face plate, Picture tube characteristics, picture tube circuit controls
- Topic No.12: Monochrome Camera Tubes: Basic principle, Image Orthicon, Vidicon, Plumbicon

Unit No. 2 Colour TV Essentials:

- Topic No.13: Compatibility, Colour perception, Three Colour theory, Luminance
- Topic No.14: Hue and Saturation, Dispersion and Recombination of light
- Topic No.15: Primary and secondary colours
- Topic No.16: Luminance signalChrominance Signal, Colour picture tube
- Topic No.17: Colour TV Camera, Colour TV display Tubes
- Topic No.18: Colour Signal Transmission, Bandwidth for colour signal transmission
- Topic No.19: Colour TV controls, Cable TV
- Topic No.20: Block Diagram and principle of working of cable TV, Introduction, Liquid crystals
- Topic No.21: Types of LCD's
- Topic No.22 TN, STN, TFT, Power requirements, LCD working, Principle of operation of TN display, Construction of TN display
- Topic No.23: Behaviour of TN liquid crystals, Viewing angle, colour balance, colour TN display, Limitations, Advantages, Disadvantages, Applications

Unit No.3 LED and DMD:

- Topic No.24: Introduction to LED Television, comparison with LCD and Plasma TV's
- Topic No.25: Schematic of DMD, Introduction to Digital micromirror device Diagram of DMD, Principle of working, Emerging applications of DMD.
- Topic No.26: Microwaves, Transit Time, Magnetron, Waveguides
- Topic No.27: Microwave Oven, Microwave Cooking, Air conditioning, Components of air conditioning systems
- Topic No.28: All water Air conditioning systems, All air conditioning Systems, Split air conditioner

Unit No.4 Microphone:

- Topic No.29: Introduction, Characteristics of microphones
- Topic No.30: Types of microphone: carbon, moving coil, wireless, crystal
- Topic No.31: Introduction to tape recorder, Introduction to ideal and basic loudspeaker
- Topic No.32: Loudspeaker construction types of loudspeaker: Dynamic and permanent magnet
- Topic No.33: Woofers, Tweeters
- Topic No.34: Brief introduction to baffles, Equalizers



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Study Scheme				Evaluation Scheme			Total Marks
Lectures per week				Internal Assessment	External Assessment (Examination)		
L	T	P	Credits	Max. Marks	Max. Marks	Exam Duration	
3	1	-	4	25	75	3 hours	100

Text Books :

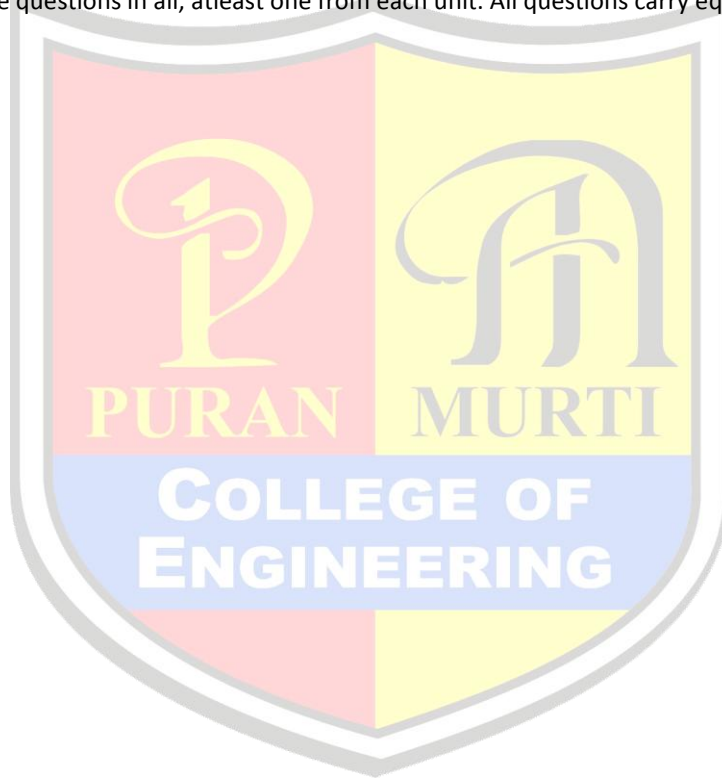
- 1.Consumer Electronics by S. P. Bali(Pearson Education)
- 2.Complete Satellite and Cable T.V by R.R Gulati(New Age International Publishers)

Reference Books:

1. Monochrome and Colour Television by R. R. Gulati

NOTE:

In the Semester examination, the examiner will set 08 questions in all selecting two from each unit. The candidates will be required to attempt five questions in all, atleast one from each unit. All questions carry equal marks.





SYLLABUS: B Tech (ECE)

Department: Electronics & Communication Engineering– 5th Semester

Subject: Linear Integrated Circuit (Theory)

Subject Code: ECE307B

Detailed Content

Unit No.1 Differential Amplifier Fundamentals:

- Topic No.1 : Differential Amplifier, Differential Amplifier Circuit Configuration: DC And AC Analysis Of All Four Types Of Configurations, FET Differential Amplifiers, Differential Amplifier With Swamping Resistor, Constant Current Bias, Current Mirror
- Topic No.2 : Cascaded Differential Amplifier, Cascode Configurations, Amplifier Fundamentals
- Topic No.3 : The Operational Amplifier, Block Diagram Representation
- Topic No.4 : Ideal Op-Amp
- Topic No.5 : Op-Amp Equivalent Circuit, Ideal Voltage, Transfer Curve
- Topic No.6 : Open Loop Op-Amp Configurations
- Topic No.7 : Op-Amp With Negative Feedback: Voltage Series & Voltage Shunt Feedback Amplifiers, Current Feedback Amplifiers

Unit No.2 Characteristics Of Op-Amp:

- Topic No.8 : Input Offset Voltage, Input Bias Current, Input Offset Current, Output Offset Voltage
- Topic No.9 : Thermal Drift
- Topic No.10: Effect Of Variation In Power Supply Voltages On Offset Voltage
- Topic No.11: Common Mode Configuration And Cmrr
- Topic No.12: Frequency Response Of Op-Amp: Open Loop Response, Close Loop Response, Input And Output Impedances
- Topic No.13: Effect Of Finite Gain Bandwidth Product, Slow Rate
- Topic No.14: Dc And Ac Amplifier, Peaking Amplifier, Summing, Scaling And Averaging Amplifiers, Instrumentation Amplifier
- Topic No.15: Voltage To Current Converter, Current To Voltage Converter
- Topic No.16: Difference Amplifier, Integrator, Differentiator, Very High Input Impedance Circuit

Unit No.3 Noise And Stability:

- Topic No.17: Noise Properties, Sources Of Noise, Op-Amp Noise
- Topic No.18: Stability Problems, Stability In Constant Gbp Op-Amp Circuits
- Topic No.19: Internal Frequency Compensation, External Frequency Compensation
- Topic No.20: Stability In CFA Circuits
- Topic No.21: Transfer Function
- Topic No.22: Active Filters First Order Lp & Hp Butterworth Filters, Second Order Lp & Hp Butterworth Filters, Higher Order Filters, Band Pass Filters, Band Rejection Filters
- Topic No.23: Oscillators: Phase Shift , Wein Bridge Oscillator, Quadrature Oscillator
- Topic No.24: Square Wave Generator, Triangular Wave Generator, Saw Tooth Wave Generator
- Topic No.25: Voltage Controlled Oscillator

Unit No.4 Non Linear Circuits:

- Topic No.26: Voltage Comparator
- Topic No.27: Zero Crossing Defector, Schmitt Trigger
- Topic No.28: Peak Detector
- Topic No.29: Sample And Hold Circuit
- Topic No.30: Voltage To Frequency And Frequency To Voltage Converter
- Topic No.31: ADC And DAC
- Topic No.32: Clippers And Clampers
- Topic No.33: Absolute Value Output Circuit
- Topic No.34: Switched Capacitor Filter
- Topic No.35: 555 Timer: As Monostable Multivibrator, Astable Multivibrator
- Topic No.36: Phase-Locked Loops
- Topic No.37: Voltage Regulators: Fixed And Adjustable Voltage Regulator, Power Amplifiers, Switching Regulators



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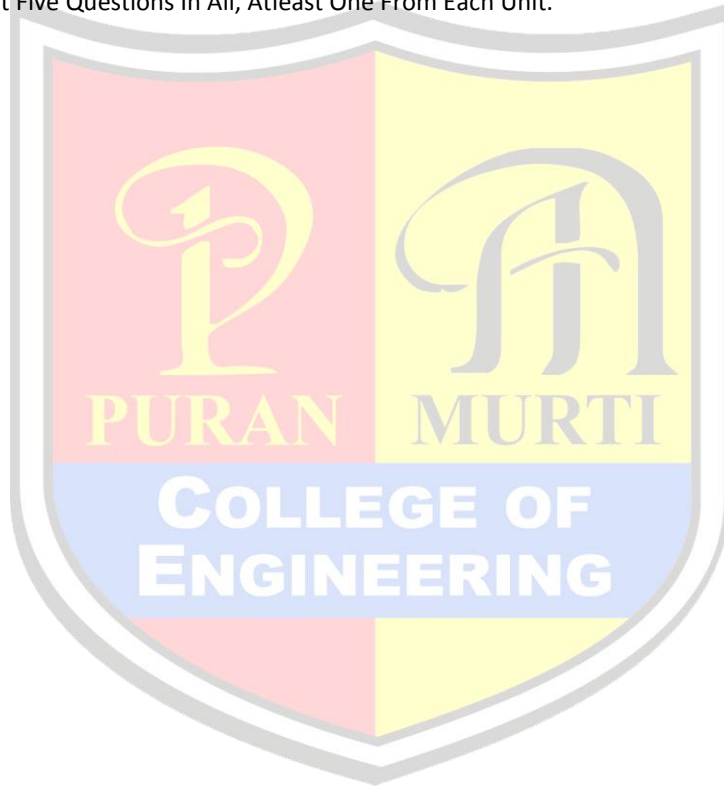
Study Scheme				Evaluation Scheme			Total Marks
Lectures Per Week				Internal Assessment	External (Examination)	Assessment	
L	T	P	Credits	Max. Marks	Max. Marks	Exam Duration	
3	1	-	4	25	75	3 Hours	100

Reference Books:

1. OP-AMPS And Linear Integrated Circuit By Ramakant A Gayakwad -- PHI
2. Design With Operational Amplifiers And Analog Integrated Circuits By Sergio Franco -- MGH
3. Integrated Circuits By K .R. Botker –Khanna Pub.
4. Linear Integrated Circuits By D.Roy Choudhary & S.Jain—New Age

NOTE:

In The Semester Examination, The Examiner Will Set 08 Questions In All Selecting Two From Each Unit. The Candidates Will Be Required To Attempt Five Questions In All, Atleast One From Each Unit.





SYLLABUS: B Tech (ECE)

Department: Electronics & communication engineering– 5th Semester

Subject: Microprocessor And Interfacing (Theory)

Subject Code: ECE309B

Detailed Content

Unit No.1 The Microprocessor Architecture 8086 :

- Topic No.1 : Architecture Block Diagram Of 8086, Details Of Sub-Blocks Such As Eu, Biu
- Topic No.2 : Memory Segmentation And Physical Address Computations
- Topic No.3 : Program Relocation
- Topic No.4 : Addressing Modes
- Topic No.5 : Instruction Formats
- Topic No.6 : Pin Diagram And Description Of Various Signals Instruction Execution Timing
- Topic No.7 : Assembler Instruction Format, Data Transfer Instructions, Arithmetic Instructions, Branch Instructions, Looping Instructions, Nop And Hlt Instructions, Flag Manipulation Instructions, Logical Instructions, Shift And Rotate Instructions
- Topic No.8 : Directives And Operators Programming Examples

Unit NO.2 The X86 Family (80186, 80286, 80386, 80486) Microprocessor Architecture And Prgramming :

- Topic No.9 : Architecture, Block Diagram, Details Of Sub-Blocks, Hardware Features And Description Of Various Signals
- Topic No.10: Interrupts, Multitasking, Addressing Modes
- Topic No.11: Instruction Set And Programming Example
- Topic No.12: Enhanced Features Of Pentium, Pentium Pro, Pentium-li, Pentium-ii, Pentium-iv, Multi-Core Technology
- Topic No.13: Mobile Processor

Unit No.3 Interfacing Device :

- Topic No.14: The 8255 Ppi Chip: Architecture, Control Words, Modes And Examples..
- Topic No.15: Introduction To Dma Process, 8237 Dma Controller
- Topic No.16: 8259 Programmable Interrupt Controller, Programmable Interval Timer Chips

Unit No.4 Communication Interface:

- Topic No.17: Parallel Interface, Serial Interface, Pci Interface, Pumice, Usb Interface
- Topic No.18: Modern Pc, Motherboard, Chipset, Expansion Buses
- Topic No.19: Memory-Simm And Dimm

Study Scheme				Evaluation Scheme			Total Marks
Lectures Per Week				Internal Assessment	External (Examination)	Assessment	
L	T	P	Credits	Max. Marks	Max. Marks	Exam Duration	
3	1	-	4	25	75	3 Hours	100

Reference Books:

1. "The Intel Microprocessors 8086- Pentium Processor", Brey, 4th Edition, 2005.
2. "Microprocessors And Interfacing", D. V. Hall, Tata Mcgraw-Hill, 2nd Edition, 2006.
3. "Microcomputer Systems: The 8086/8088 Family: Architecture, Programming And Design", Liu Yu-Chang And Gibson Glenn A., Prentice Hall Of India, 2003.
4. "Advanced Microprocessors And Peripherals Architectures, Programming And Interfacing", Ray A. K. And Burchandi, Tata Mcgraw Hill, 2002.
5. "Microprocessor Based System Design Ubs", Rafiquzzman, Wiley-Interscience, 5th Edition, 2005.
6. "The X86 Pc: Assembly Language, Design And Interfacing", M. A. Mazidi, J. P. Maizidi And Danny Causey, Pearson, 5th Edition, 2011.
7. "The X86 Microprocessor (Architecture, Programming And Interfacing)", L. B. Das, Pearson, 2010.
8. "Advanced Microprocessor", Daniel Tabak, Tata Mcgraw-Hill, 2nd Edition, 2012.



SYLLABUS: B Tech (ECE)

Department: Electronics & communication engineering– 5th Semester

Subject: OBJECT ORIENTED PROGRAMMING (Theory)

Subject Code: CSE204B

Detailed Content

Unit No.1

- Topic No.1 : C++ Standard Library, Preprocessor Directives, Illustrative Simple C++ Programs, Header Files and Namespaces, library files
- Topic No.2 : Concept of objects, Object Oriented Analysis & Object Modeling techniques
- Topic No.3 : Object Oriented Concepts, Introduction to Objects and Object Oriented Programming
- Topic No.4 : Encapsulation (Information Hiding)
- Topic No.5 : Access Modifiers: Controlling access to a class, method, or variable (public, protected, private, package), Other Modifiers
- Topic No.6 : Polymorphism: Overloading, Inheritance, Overriding, Abstract Classes
- Topic No.7 : Reusability Classes and Data Abstraction: Introduction, Structure Definitions, Accessing Members of Structures, Class Scope and Accessing Class Members
- Topic No.8 : Controlling Access Function And Utility Functions
- Topic No.9 : Initializing Class Objects: Constructors

UNIT No.2

- Topic No.10: Using Destructors, Classes: Const(Constant) Object And Const Member Functions, Object as Member of Classes, Friend Function and Friend Classes Using This Pointer, Dynamic Memory Allocation with New and Delete
- Topic No.11: Static Class Members, Container Classes and iterators Function overloading, Operator Overloading: Introduction, Fundamentals of Operator Overloading, Restrictions On Operators Overloading
- Topic No.12: Operator Functions as Class Members vs. as Friend Functions Overloading

Unit No.3

- Topic No.13: Inheritance: Introduction, Inheritance: Base Classes And Derived Classes
- Topic No.14: Protected Members, Casting Base Class Pointers to Derived- Class Pointers, Using Member Functions
- Topic No.15: Overriding Base -Class Members in a Derived Class, Public, Protected and Private Inheritance using Constructors and Destructors in derived Classes
- Topic No.16: Implicit Derived -Class Object To Base- Class Object Conversion
- Topic No.17: Composition Vs. Inheritance
- Topic No.18: Introduction to Virtual Functions, Abstract ,Base Classes And Concrete Classes, Polymorphism, New Classes And Dynamic Binding
- Topic No.19: Virtual Destructors, Polymorphism, Dynamic Binding

Unit No.4

- Topic No.20: Files and I/O Streams and various operation on files
- Topic No.21: Stream Input/ Output Classes and Objects, Stream Output, Stream Input, Unformatted I/O (with read and write), Stream Manipulators, Stream Format States, Stream Error States
- Topic No.22: Templates & Exception Handling: Function Templates, Overloading Template Functions, Class Template, Class Templates and Non-Type Parameters, Templates and Inheritance, Templates and Friends, Templates and Static Members: Introduction
- Topic No.23: Basics of C++ Exception Handling: Try Throw, Catch
- Topic No.24: Throwing an Exception;- Catching an Exception, Re-throwing an Exception
- Topic No.25: Exception specifications, Processing Unexpected Exceptions, Constructors, Destructors and Exception Handling, Exceptions and Inheritance.



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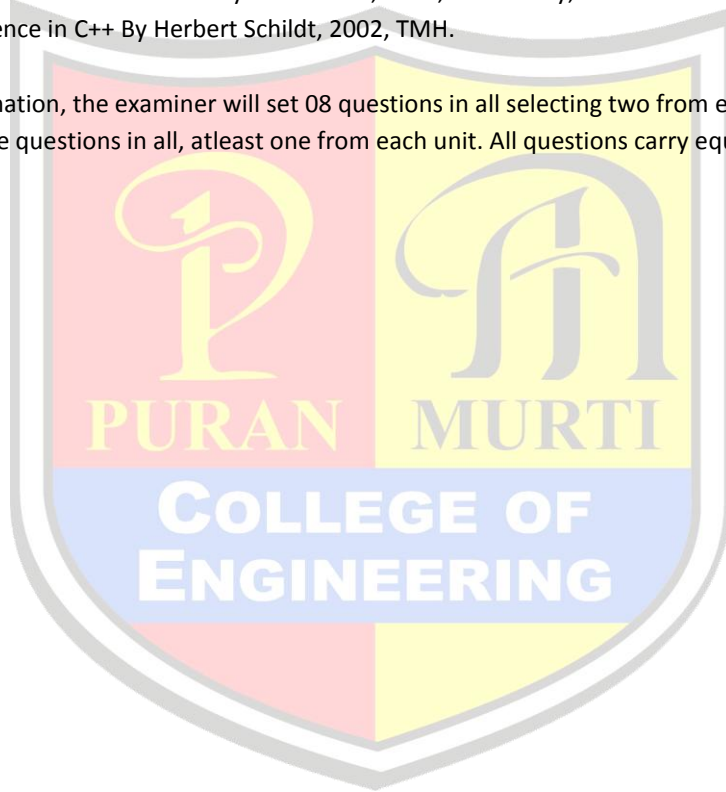
Study Scheme				Evaluation Scheme			Total Marks
Lectures Per Week				Internal Assessment	External (Examination)	Assessment	
L	T	P	Credits	Max. Marks	Max. Marks	Exam Duration	
3	1	-	4	25	75	3 Hours	100

Reference Books:

1. C++ How to Program by H M Deitel and P J Deitel, 1998, Prentice Hall
2. Object Oriented Programming in Turbo C++ by Robert Lafore ,1994, The WAITE Group Press.
3. Programming with C++ By D Ravichandran, 2003, T.M.H
4. Object oriented Programming with C++ by E Balagurusamy, 2001, Tata McGraw-Hill
5. Computing Concepts with C++ Essentials by Horstmann, 2003, John Wiley,
6. The Complete Reference in C++ By Herbert Schildt, 2002, TMH.

NOTE:

In the Semester examination, the examiner will set 08 questions in all selecting two from each unit. The candidates will be required to attempt five questions in all, atleast one from each unit. All questions carry equal marks.





SYLLABUS: B Tech (ECE)

Department: Electronics & communication engineering – 5th Semester

Subject: Object Oriented Programming Lab

Subject Code: CSE-224B

Detailed Content

LIST OF EXPERIMENTS:

1. Raising a number n to a power p is the same as multiplying n by itself p times. Write a function called `power ()` that takes a double value for n and an int value for p , and returns the result as double value Use a default argument of 2 for p . so that if this argument is omitted, the number will be squared. Write a main () function that gets values from the user to test this function.
2. A point on the two dimensional plane can be represented by two numbers: an X coordinate and a Y coordinate. For example, (4,5) represents a point 4 units to the right of the origin along the X axis and 5 units up the Y axis. The sum of two points can be defined as a new point whose X coordinate is the sum of the X coordinates of the points and whose Y coordinate is the sum of their Y coordinates . Write a program that uses a structure called point to model a point Define three points, and have the user input values to two of them Then set the third point equal to the sum of the other two. and display the value of the new point Interaction with the program might look like this:
Enter coordinates for P1 : 3 4
Enter coordinates for P2: 5 7
Coordinates of P1 + P2 are: 8 11
3. Create the equivalent of a four function calculator. The program should request the user to enter a number, an operator, and another number. It should then carry out the specified arithmetical operation: adding, subtracting, multiplying, or dividing the two numbers. (It should use a switch statement to select the operation). Finally it should display the result. When it finishes the calculation, the program should ask if the user wants to do another calculation. The response can be 'Y' or 'N'. Some sample interaction with the program might look like this.
Enter first number.
Operator, second number: 10/3
Answer = 3.333333
Do another (Y|N)? Y
Enter first number. Operator, second number 12 + 100
Answer = 112
Do another (Y|N)? N
4. Create two classes DM and DB which store the value of distances. DM stores distances in metres and centimeters and DB in feet and inches. Write a program that can read values for the class objects and add one object of DM with another object of DB.
Use a friend function to carry out the addition operation. The object that stores the results maybe DM object or DB object. depending on the units in which the results are required. The display should be in the format of feet and inches or metres and centimetres depending on object on display.
5. Create a class rational which represents a numerical value by two double values- NUMERATOR & DENOMINATOR Include the following public member Functions: • constructor with no arguments (default). • constructor with two arguments. • void reduce() that reduces the rational number by eliminating the highest common factor between the numerator and denominator. • Overload + operator to add two rational number • Overload » operator to enable input through cin • Overload « operator to enable output through cout. • Write a main () to test all the functions in the class.
6. Create a program that creates a binary file by reading the data for the students from the terminal. The data of each student consist of roll no., name (a string of 30 or lesser no. of characters) and marks. 7. A hospital wants to create a database regarding its indoor patients. The information to store include
Name of the patient Date of admission Disease Date of discharge
Create a structure to store the date (year, month and date as its members). Create a base class to store the above information. The member function should include functions to enter information and display a list of all the patients in the database. Create a derived class to store the age or the patients List the information about all the to store the age of the patients. List the information about pediatric patients (less than twelve years in age). 8. Make a class Employee with a name and salary. Make a class Manager inherit from Employee. Add an instance variable, named department, of type string. Supply a method to String that prints the manager's name, department and salary. Make a class Executive inherit from Manager Supply a method to String that prints the string Executive followed by the information stored in the



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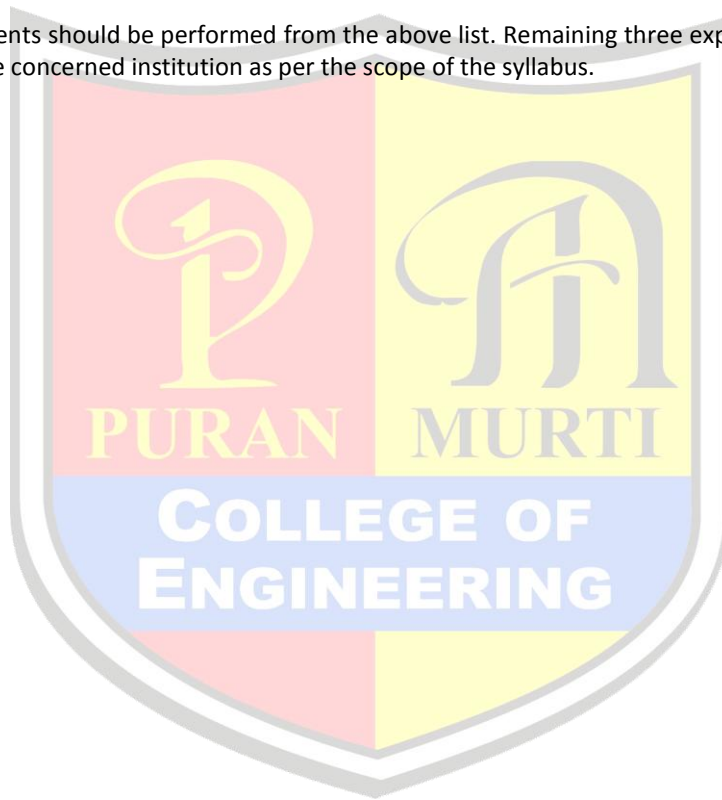
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Manager superclass object. Supply a test program that tests these classes and methods. 9. Imagine a tollbooth with a class called toll Booth. The two data items of a type unsigned int to hold the total number of cars, and a type double to hold the total amount of money collected. A constructor initializes both these to 0. A member function called payingCar () increments the car total and adds 0.50 to the cash total. Another function, called nopayCar (). increments the car total but adds nothing to the cash total. Finally, a member function called displays the two totals.

STUDY SCHEME				EVALUATION SCHEME			Total Marks
Lectures per week				Internal Assessment	External Assessment (Examination)		
L	T	P	Credits	Max. Marks	Max. Marks	Exam Duration	
-	-	2	1	20	30	3 hours	50

Note:-

At least seven experiments should be performed from the above list. Remaining three experiments should be performed as designed and set by the concerned institution as per the scope of the syllabus.





SYLLABUS: B Tech (ECE)

Department: Electronics & communication engineering – 5th Semester

Subject: Electronics Measurement And Instrumentation Lab

Subject Code: ECE323B

Detailed Content

List Of Experiments:

1. Speed measurement of DC Motor with the help of Magnetic Pick-up.
2. To measure temperature using thermocouple.
3. To measure temperature using Thermister .
4. To measure temperature using RTD .
5. To measure displacement using LDR.
6. To measure displacement using L.V.D.T.
7. To measure Pressure using Pressure Transducer.
8. To measure Frequency & Time period of given wave form using frequency Meter .
9. To study the operation of Spectrum Analyzer.
10. To measure phase & frequency of a given wave-form using Lissajous patterns .
11. To measure weight using Strain Gauge .
12. To measure displacement using Inductive and Capacitive Pick-up.

Study Scheme				Evaluation Scheme			Total Marks
Lectures Per Week				Internal Assessment	External Assessment (Examination)		
L	T	P	Credits	Max. Marks	Max. Marks	Exam Duration	
-	-	2	1	20	30	3 Hours	50

Note:-

- 1 Total ten experiments are to be performed in the semester.
- 2 At least seven experiments should be performed from the above list. Remaining three experiments should be performed as designed and set by the concerned institution as per the scope of the syllabus.



SYLLABUS: B Tech (ECE)

Department: Electronics & communication engineering – 5th Semester

Subject: Consumer Electronics Lab

Subject Code: ECE 325B

Detailed Content

List Of Experiments:

- 1 To plot frequency response of different type of loudspeaker.
- 2 To study different section Monochrome T.V .
- 3 To study differnt section Colour T.V .
- 4 To study working principal of digital camra.
- 5 To study functional block digram & front panel control of Microwave Oven.
- 6 To study functional block digram & front panel control of Washing Machine.
- 7 To study display devices like Plasma,LCD,LED,DMD.
- 8 To demonstration of the working of all type of air conditioniner like water air condioning,split air conditioners etc.
- 9 To demonstration of the working of domastic refrigerators.
- 10 To plot the frequency response a microphone.
- 11 To study the block digram of Transmitter & Recever.

Study Scheme				Evaluation Scheme			Total Marks
Lectures Per Week				Internal Assessment	External Assessment (Examination)		
L	T	P	Credits	Max. Marks	Max. Marks	Exam Duration	
-	-	2	1	20	30	3 hours	50

Note:-

1. Total ten experiments are to be performed in the semester.
 2. At least seven experiments should be performed from the above list.
- Remaining three experiments should be performed as designed and set by the concerned institution as per the scope of the syllabus



SYLLABUS: B Tech (ECE)

Department: Electronics & communication engineering – 5th Semester

Subject: Linear Integrated Circuits Lab

Subject Code: ECE327B

Detailed Content

List Of Experiments:

1. Design & realize inverting amplifier, non-inverting and buffer amplifier using 741 Op Amp.
2. Verify the operation of a differentiator circuit using 741 op amp and show that it acts as a high pass filter.
3. Verify the operation of an integrator circuit using 741 op amp and show that it acts as a low pass filter.
4. Design and verify the operations of op amp adder and subtractor circuits.
5. Design & realize using op amp 741, Wein -bridge oscillator.
6. To design & realize using op amp 741, square wave generator.
7. To design & realize using op amp 741, logarithmic amplifier & VCCS.
8. To design & realize using op amp 741, Triangular wave generator.
9. To design & realize using op amp 741 as a Comparator.
10. To design & realize using op amp 741 as a Schmitt trigger.
11. To design & realize differential Amplifier.
12. To design & realize using op amp 741, as a Clipper.
13. To design & realize using op amp 741, as a Clamper

Study Scheme				Evaluation Scheme			Total Marks
Lectures Per Week				Internal Assessment	External Assessment (Examination)		
L	T	P	Credits	Max. Marks	Max. Marks	Exam Duration	
3	1	-	4	25	75	3 Hours	100

Note:-

1. Total ten experiments are to be performed in the semester.
 2. At least seven experiments should be performed from the above list.
- Remaining three experiments should be performed as designed and set by the concerned institution as per the scope of the syllabus.



SYLLABUS: B Tech (ECE)

Department: Electronics & communication engineering – 5th Semester

Subject: MICROPROCESSOR AND INTERFACING LAB

Subject Code: ECE329B

Detailed Content

List Of Experiments:

1. To study the architecture of 8086 microprocessor and 8086 microprocessor kit.
2. Write a program to add the contents of the memory location 3000:0400 H to the content of 4000:0700 H and store the result in 6000:0900 H
3. Write a program to add 16 bit number using 8086 instruction set.
4. Write a multiplication of two 16 bit number using 8086 instruction set.
5. Write a program for division of two 16 bit numbers using 8086 instruction set.
6. Write a program factorial of a number.
7. Write a Program to transfer a block of data without overlap.
8. Write a Program to transfer a block of data with overlap.
9. Write a program to find the average of two numbers.
10. Write a Program to check whether data byte is odd or even .
11. Write a program to find maximum number in the array of 10 numbers.
12. Write a program to find the sum of the first 'n' integers.
13. Write a program to generate a square wave.
14. Write a program to generate a rectangular wave.
15. Write a program to generate a triangular wave.

Study Scheme				Evaluation Scheme			Total Marks
Lectures Per Week				Internal Assessment	External Assessment (Examination)		
L	T	P	Credits	Max. Marks	Max. Marks	Exam Duration	
-	-	2	1	20	30	3 Hours	50

Note:-

- 1 Total ten experiments are to be performed in the semester.
 - 2 At least seven experiments should be performed from the above list.
- Remaining three experiments should be performed as designed and set by the concerned institution as per the scope of the syllabus.



SYLLABUS: B Tech (ECE)

Department: Electronics & communication engineering – 5th Semester

Subject: PROFESSIONAL TRAINING-I

Subject Code: ECE329B

Detailed Content

At the end of 4th semester each student would undergo four weeks Professional Training in an Industry/ Institute/ Professional Organization/ Research Laboratory etc. with the prior approval of the Training and Placement Officer of the University and submit in the department a typed report along with a certificate from the organization.

The typed report should be in a prescribed format.

The report will be evaluated in the V Semester by a Committee consisting of three teachers from different specialization to be constituted by the Chairperson of the department. The basis of evaluation will primarily be the knowledge and exposure of the student towards different processes and the functioning of the organization.

The student will interact with the committee through presentation to demonstrate his/her learning.

Teachers associated with evaluation work will be assigned 2 periods per week load.

Study Scheme				Evaluation Scheme			Total Marks
Lectures Per Week				Internal Assessment	External Assessment (Examination)		
L	T	P	Credits	Max. Marks	Max. Marks	Exam Duration	
-	-	1	2	50	-	3 Hours	50

