

***Mandatory Disclosure for the year 2008-09 for Extension of
Approval for the beyond the academic year 2008-09***



**INDIRA GANDHI SPORTS COMPLEX, I.P. ESTATE
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LIST OF MANDATORY DISCLOSURES

I. NAME OF THE INSTITUTION

COCHIN UNIVERSITY COLLEGE OF ENGINEERING, KUTTANADU

PULINCUNNOO, ALAPPUZHA

KERALA

PIN: 688504

PH. NO. 2707500

II. NAME AND ADDRESS OF THE PRINCIPAL

PROF OOMMEN SAMUEL

COCHIN UNIVERSITY COLLEGE OF ENGINEERING,

KUTTANADU

PULINCUNNOO, ALAPPUZHA

KERALA

PIN: 688504

PH. NO. 2707500. FAX No. 0477-2707500

III. NAME OF THE AFFILIATING UNIVERSITY

THE INSTITUTION IS A CONSTITUENT COLLEGE OF COCHIN UNIVERSITY

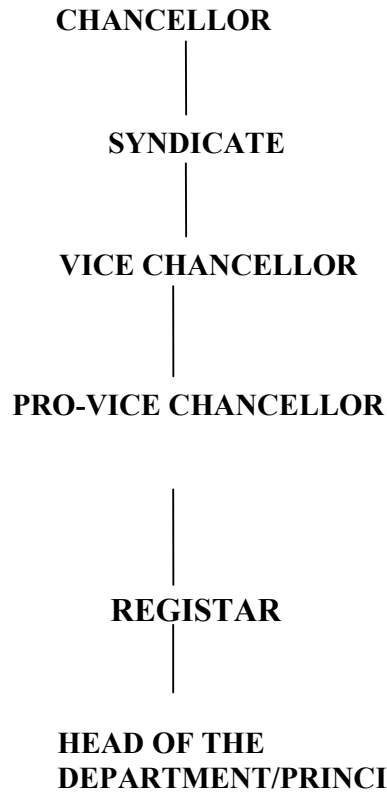
COLLEGE OF SCIENCE AND TECHNOLOGY

IV. GOVERNANCE

GOVERNED BY VICE CHANCELLOR AND SYNDICATE OF COCHIN UNIVERSITY

OF SCIENCE AND TECHNOLOGY.

ORGANIZATION CHART



MEMBERS OF THE SYNDICATE

Sl. No.	Name	Office Phone	Residence Phone
1.	Dr. Gangan Prathap Vice Chancellor	0484 -2577619	0484 - 2532666
2.	Dr. N. D. Inasu Pro-Vice-Chancellor	0484-2575699	0484-2557191
3.	Director of Technical Education Directorate of Technical Education Padmavilasom Road Thiruvananthapuram - 695 023.	0471-2451369	
4.	Dr. E.P. Yosodharan Executive Vice President Kerala State Council for Science Technology & Environment Sastra Bhavan Pattom Thiruvananthapuram.	0471-2543557	
5.	Shri. Baby Chakrapani, Selection Grade Lecturer, Dept. of Atmospheric Sciences, Cochin University of Science & Technolgy Kochi - 16	0484-2353662	0487-2428620

6.	Dr. Joy Job Kulavelil HB 48, KKP Nagar, Union Christian College P.O. Aluva-2.		0484-2606039 9447359216
7.	Adv. K. Mohanachandran House No XXXII/36, Chithrakalalayam Road Edapally Toall Kochi-682 024.	0484-2629422	0484-2576968 9446356968
8.	Dr. S. Salim Kudumbasree Mission, Civil Station Kakkanad, Ernakulam	0484-2426982 0484 - 2424038	9446342639 0484-2462639
9.	Prof. P.O.J. Lebha Dean Faculty of Engineering,CUSAT Yakeen, Asramam, Kollam - 691 002		0474-2742536 9847042536
10.	Prof. V.P. Narayanan Nampoori Dean Faculty of Technology CUSAT, Kochi - 22.	0484-2575848	0484-2576263
11.	Prof. I.S. Bright Singh Dean Faculty of Environmental Studies CUSAT, Cochin - 22	0484-2577311	0484-2303632 9447631101
12.	Dr. K.N. Chandrasekharan Pillai Director, Indian Law Institute Bhagwandas Road, New Delhi - 110 001	011-23387873 011-23386321	011-23388710
13.	Shri. C. M. Dinesh Mani, M.L.A. New Flat 503, MLA Hostel, Thiruvananthapuram, (Chanthuruthil Veedu, Vennala Kochi - 682 028)	0484-2231616	0484-2806144 0471-2512311 9447570754
14.	Shri. Alphons Kannanthanam M.L.A New Flat 502, M.L.A. Hostel, Thiruvananthapuram (41 A, PTP Nagar Thiruvananthapuram - 695 038)	0471-2512394 04828-209555	0471-2512394 04828-201540 9447749596
15.	Sri. N. K. Vasudevan H.No: III/354, 'Sindooram' Adarsh Lane Trikkakara P O Kochi 682 02l		0484-2575391 9446388391
16.	Dr. Achuthsankar S. Nair Hon. Director Centre for Bioinformatics, University of Kerala Thiruvananthapuram - 695581	0471-2412759	0471-2542220
17	Sri. Hemanth N.K. Chairman University Students Union Dept. of Instrumentation, CUSAT		

MEMBERS OF THE SENATE

1. **The Chancellor**
2. **The Pro Chancellor**
3. **The Vice Chancellor**
4. **The Pro Vice Chancellor**
5. **The May**
Cochin Corporation
6. **The Deputy Director**
Collegiate education,Ernakulam
- 7 **The Deputy Director of Education**
Ernakulam
8. **The Chairman,**
State Advisory Board of Education

The other members are nominated by the Vice Chancellor from among the heads of departments and elected members from various constituencies.

V. PROGRAMMES

NAME OF PROGRAMME	NO: OF SEATS	DURATION	CUT OFF MARKS/RANK FOR ADMISSION DURING LAST THREE YEARS	FEE (PER SEMESTER)	PLACEMENT FACILITIES	CAMPUS PLACEMENT FOR THE LAST THREE YEARS WITH MINIMUM, MAXIMUM AND AVERAGE SALARY		
						MINIMUM	MAXIMUM	AVERAGE
MECHANICAL	60	4		FREE SEAT 10,535 PAYMENT SEAT 21,035	PLACEMENT CELL IS WORKING AS A UNIT OF PLACEMENT CELL OF CUSAT	10000	40000	27000
COMPUTER	60	4		FREE SEAT 10,535 PAYMENT SEAT 21,035	PLACEMENT CELL IS WORKING AS A UNIT OF PLACEMENT CELL OF CUSAT	11000	42000	27500

ELECTRICAL	60	4		FREE SEAT 10,535 PAYMENT SEAT 21,035	PLACEMENT CELL IS WORKING AS A UNIT OF PLACEMENT CELL OF CUSAT	10000	40000	27000
INFORMATION TECHNOLOGY	60	4		FREE SEAT 10,535 PAYMENT SEAT 21,035	PLACEMENT CELL IS WORKING AS A UNIT OF PLACEMENT CELL OF CUSAT			
ELECTRONICS & COMMUNICATION	60	4		FREE SEAT 10,535 PAYMENT SEAT 21,035	PLACEMENT CELL IS WORKING AS A UNIT OF PLACEMENT CELL OF CUSAT	11000	41000	27000

VI FACULTY

1.

BRANCH	FACULTY	
	REGULAR(FULL TIME)	GUEST FACULTY
ME	8	2
EC	6	5
CS	7	1
IT	5	1
EE	6	2
CE	3	0
GENERAL SCIENCE	3	6

2. PERMANENT FACULTY: STUDENT RATIO 22:1020

3. NO. OF FACULTIES JOINED AND LEFT DURING 3 YEARS:

LEFT 30 , JOINED :35

VII PROFILE OF DIRECTOR/PRINCIPAL WITH QUALIFICATIONS, TOTAL EXPERIENCE,



1. Name : Oommen Samuel
2. Date of Birth : 26/10/1944
3. Educational Qualification : MSc(Structural Engg)
4. Working Experience
 - i. Teaching : 29 Years
 - ii. Research : NIL
 - iii. Industry : 5 years
 - iv. Others : 5 years as Principal
5. Area of Specializations : Structural Engg
6. Subjects teaching at Under Graduate Level:

No teaching work at present

Post Graduate Level :
7. Research Guidance :
 - i. Master's : No research faculty in this college at present
 - ii. Ph.D
8. Number of papers published in
 - i. National Journals
 - ii. International Journals
 - iii. Conferences
9. Projects Carried out
10. Patents
11. Technology Transfer
12. Research Publications

FEEES

Fee Structure of the Institution

S.No.	Category	CET quota		Management quota		
		Fixed by the State Fee Committee	Being charged by the Institution	Fixed by the State Fee Committee	Being charged by the Institution	
1.	B-Tech	Free	Payment			
		Admission Fee	750	750		
		Tuition Fee (per sem)	7500	18000		
		University fee (Examination fee, Registration fee etc.) (spl.Fee/year)	855	855		
		Hostel fee (Rent etc.)	Nil	Nil		
		Laboratory fee (per year)	530	530		
		Library fee(per year)	140	140		
		Any other exam fee(per semester)	760	760		
Total Fee		10,535	21,035			

**NO OF FEE WAIVERS GRANTED : CONCESSION TO SC/ST CANDIDATES AS PRESCRIBED BY THE GOVERNMENT OF KERALA.
SCHOLARSHIPS: NIL**

IX ADMISSION

NUMBER OF SEATS SANCTIONED WITH YEAR OF APPROVAL

BRANCH	YEAR 2008
ME	60
EC	60
CS	60
IT	60
EE	60

NUMBER OF STUDENTS ADMITTED IN LAST 3 YEAR

BRANCH	2008	2007	2006
B.TECH			
MECHANICAL	60	66	
ELECTRICAL	60	66	65
ELECTRONICS	60	66	66
COMPUTER	60	66	66
SCIENCE			64
INFORMATION	60	66	
TECHNOLOGY			60

NUMBER OF APPLICATION RECEIVED UNDER MANAGEMENT QUOTA: NOT APPLICABLE.

X ADMISSION PROCEDURE

STUDENTS ARE ADMITTED BASED ON COMMON ENGINEERING TEST CONDUCTED BY COCHIN UNIVERSITY OF SCIENCE AND TECHNOLOGY.

Web site: www.cusat.ac.in

XI CRITERIA AND WEIGHTAGES FOR ADMISSION

STUDENTS ARE ADMITTED BASED ON THE MARKS SECURED IN THE COMMON ENTRANCE TEST CONDUCTED BY COCHIN UNIVERSITY OF SCIENCE AND TECHNOLOGY. CANDIDATES WITH MINIMUM 50% MARKS IN THE PLUS TWO EXAMINATION ARE ELIGIBLE FOR WRITING THE ENTRANCE TEST.

XII APPLICATION FORM

XIII LIST OF APPLICANT : NOT APPLICABLE

NOT APPLICABLE

XIV RESULTS OF ADMISSION UNDER MANAGEMENT SEATS/VACANT SEAT

NOT APPLICABLE

XV INFORMATION ON INFRASTRUCTURE AND OTHER RESOURCES

AVAILABLE

* NO STUDENTS ARE ADMITTED IN CIVIL ENGINEERING BRANCH FROM 2006-2007 ONWARDS DUE TO LACK OF APPROVAL FROM AICTE.

LIBRARY

DEP	ME	EC	EE	CS.IT	CE	OTHERS
LIBRARY BOOKS	1260	1850	1500	3800	980	1000
TITLE	280	380	320	1130	220	130
JOURNALS	3	3	1	4	3	—

LABORATORY

Sl. No.	Name of the Course	Name of the laboratory/workshop	Total area of lab/workshop	Major Equipment
1.	Electical	Electical Machine Lab	400 m. Sq	DC series motor,DC shunt motor,transformer,1- ϕ induction motor,squirrel cage & slip ring induction motor,wattmeter,volt meter,ammeter,energy meter.,auto transformer,alternator.
2.	Electronics	1. Basic Electronics Lab 2. Digital Electronics Lab 3. Microprocessor Lab 4. Communication Lab	150 m. sq.	CRO, Function generator, Digital Trainer Kit, Microprocessor Trainer kit, Microwave Test Bench
3.	Mechanical	1. Metrology Lab 2. Mechanical Workshop	420 m. sq	
4.	Computer Science	1.Programming Lab 2. System Programming and hardware lab 3.Network&Operating Systems Lab 4.Computer Graphics lab 6. Project Lab	330 m.sq	UPS, Server, Computer nods, Printers, Modem, Scanners, Chair, Table, Fan, A/C.
5.	Information Technology	1Object Oriented Programming Lab 2. System Programming and hardware lab 3. Minor Project RDBMS based &Multimedia based lab 4.Computer Graphics lab	330m.sq	UPS, Server, Computer nods, Printers, Modem, Scanners, Chair, Table, Fan, A/C.

		5. Internet Lab 6. Project Lab		
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COMPUTING FACILITY

- NO : AND CONFIGURATION OF SYSTEMS :154

Labs of Division of Computer Science

Data Structures Lab

Implementation and study of algorithms in a suitable programming language for the following

1. Sorting and Searching
2. Linked List
3. Stacks and Queues
4. Trees and Graphs

MICROPROCESSOR LAB, LANGUAGE PROCESSORS LAB

- Creation of Single Pass – Two Pass assembler – Macro processor.
- Generation of Lexical Analyzer using tools such as Lex
- Generation of Parser using tools such as YACC.
- Generation of LL(1) Parser
- Generation of intermediate code
- Creation of type checker
- Developing a compiler for a subset of a programming language.

SYSTEM PROGRAMMING AND HARDWARE LAB

1. Identification of components/cards and PC assembling from components
 2. Assembly language program for implementing arithmetic operations
 3. Assembly Language programs for time and date manipulation.
 4. Assembly Language programs for display /video manipulation
 5. Assembly Language program for equipment status
 6. Implementation of a file manager using DOS/BIOS interrupts
 7. TSR (Terminate and Stay Resident) Programming
 8. ADC interface
 9. Stepper Motor interface using DAC
 10. Parallel Interface: Printer and HEX keyboard.
 11. Serial Interface: PC to PC serial interface using null modem
- Note:** Programs can be implemented using MASM /TASM

References :

- 1) H. P. Messmer, *The Indispensable PC Hardware Book*, 3/e, Addison Wesley, 1997
- 2) S. J. Bigelow, *Troubleshooting, Maintaining, and Repairing PCs*, 2/e, Tata McGraw Hill, New Delhi, 1999
- 3) Douglas V. Hall, *Microprocessors and Interfacing*, 2/e, Tata McGraw Hill, 1988
- 4) Ytha Yu and Charles Marut , *Assembly Language Programming and Organisation of IBM PC*, International Edition , McGrawhill Inc , 1992
- 5) Barry B. Brey , *The Intel Microprocessors 8086 to Pentium 4- Architecture Programming and Interfacing*, 6/e Pearson Education ,2003

NETWORK AND OPERATING SYSTEMS LAB

1. Study of system level calls of a suitable multitasking operating system. Exercises involving the system calls. (E.g. fork(),exec(),create() etc. in UNIX.)
2. Inter process communication. Shared memory, messages, Semaphores and monitors. Implementation of typical problems(E.g. Bounded buffer, Dining Philosophers. etc.)
3. Study of Communication protocols. TCP/IP or a suitable protocol. Client server programming. Distributed algorithms. performance modelling of networks.
4. Internet programming using a suitable programming language and Operating system (E.g. JAVA)

COMPUTER GRAPHICS LAB

1. Implementing Line ,Circle and Ellipse drawing algorithms
2. Implementing scan line polygon filling algorithm
3. Implementing seed filling algorithms –flood fill, Boudary fill (recursive and non recursive)
4. Implementing line clipping methods
5. Implementing polygon clipping methods
6. Generation of different 2D patterns and images.
7. 2D transformations using homogeneous coordinates
8. Generating Bazier and B-spine curves
9. Implementation of Hidden surface elimination techniques of 3D objects
10. Implementation of Shading methods for 3D objects
11. Implementation of animation methods.
12. Programming using Open GL
(Can be done as a development of a small 2D/3D graphics package or Game using OpenGL)

Labs of Division of Information Technology

OBJECT ORIENTED PROGRAMMING LAB

Fifteen Lab Exercises covering

Functions

Arrays

Pointers

Structures

Classes and Objects

Inheritance

Polymorphism

Data file operation

PC HARDWARE AND MP LAB

Part A - PC HARDWARE LAB

Study of SMPS, TTL and composite type monitor circuits, Emulator, Logic state analyser, Serial port, Parallel port, Mother board, CGA card, Floppy disk controller, Hard disk controller, Printer Interface, Keyboard Interface

Diagnostic Softwares, Diagnostic card, Designing and programming add on cards

Floppy Disk drive:

Alignment, Programming, Formatting

Hard Disk drive:

Partitioning, Familiarisation of disk maintenance, Software Tools.

Trouble shooting and maintenance

Preventive and maintenance, Common maintenance problems

Familiarisation:

Device drivers, Microcontrollers, Transputers

Part B - MICROPROCESSOR LAB

1. Study of typical microprocessor trainer kit
2. Simple Programming examples using 8085 instruction set to understand the use of various instructions and addressing modes – Monitor routines – at least 20 examples
3. Programming examples to initialise 8251 and to understand its I/O operations
4. Programming examples to initialise 8255 and to understand its I/O operations
5. Programming examples to initialise 8253 and to understand its I/O operations
6. Programming examples to initialise 8279 and to understand its I/O operations

7. Demonstration of

Cassette Interface

Programming EPROM 2716,2732 etc

A/D and D/A convertor Interface

Interface 8255 port to high power devices

Stepper Motor Interface

IT 407 DATA STRUCTURES LAB

1. Simple Programming Exercises with JAVA
2. Stack and Queues and their Applications
3. Linked List
4. Tree Traversal and Set Representation
5. Exercises in graph Representation of application
6. Sorting, Searching & Merging

MINOR PROJECT – RDBMS BASED

Any of the following projects or similar one using relational database systems like UNIFY, INGRESS, ORACLE, SYBASE, INFORMIX, Visual Foxpro etc

1. Hospital Automation
2. Bank Transaction Management
3. Hotel Management
4. Scheduling in Power Plant
5. Promotion Management for a Firm
6. Manufacturing System Database
7. Placement Center Database Management
8. Gas Agency Management
9. Office Automation
10. Railway Reservations
11. Computerizing Course Reservation
12. Hostel Management
13. Managing of Research Laboratory Activities
14. Business Transaction in an Industry
15. Inventory Management
16. Cricket Board Database
17. Carrier Planning
18. Employee Database
19. Production Management
20. Natural Resources Database
21. Salary Payment Database
22. Airless Reservations
23. Finance Database Management
24. Transport Management System
25. Library Management System
26. College Admission
27. Question Paper Bank

SYSTEM PROGRAMMING LAB

Programming Assignments

1. Introduction to assembly Language Programming in a suitable Assembly language
2. Symbol Tables
3. Different passes of the compiler

COMPUTER GRAPHICS LAB

This lab exercises are to be done in JAVA language

Program to draw line using Bresenham's algorithm for all quadrants.

Program to draw a circle.

Program to draw an ellipse.

Program to draw a spiral using Bresenham's circle drawing algorithm.

Procedure to move a line around the circle.

Procedure to rotate a wheel.

Procedure to translate a circle.

Program to show 2D clipping and windowing.

Development of 2D graphics package.

Segmentation.

MINOR PROJECT - MULTIMEDIA BASED

Multimedia project involving Painting and 3D Animation , 3D Titling, 3D Modeling and Animation, Working with sound, Frame and Video Capturing and special Effects, Authorising and Presentation.

(Each student has to do separate project)

INTERNET LAB

Part A :

Five exercises in C++

Part B :

1. Familiarisation of Internet components such as Modem, Gateways, Routers, Bridges etc.
2. Introduction to various internet softwares, services and Applications.
3. Familiarisation of Internet accessing and trouble shooting Techniques.
4. Software simulation of communication protocols
5. Introduction to internet programming (Creation of Java applets, stand alone program etc.)

Minor Project - Web Oriented

Design and development of a web oriented commercial site using HTML and JAVA

(Each student has to do separate projects)

Labs of Division of Electronics & Communication Engineering

Details of Experiments in for Electronics and communication engineering.

BASIC ELECTRONICS LABORATORY

1. Study of - Multimeter, Signal generators, CRO etc. and measurement of electrical quantities (V, I, FREQUENCY, PHASE)
2. Testing of Passive and Active components - Resistors , Capacitors, inductors , Transformers , diodes, Transistors, etc.
3. Characteristics of Active devices
 - i) Forward and reverse characteristics of a diode - measurement of forward resistance
 - ii) Common base characteristics of a transistor - measurement of current gain, input resistance and output resistance, maximum ratings of the transistor.
 - iii) Common emitter characteristics of a transistor - measurement of current gain, input resistance and output resistance, relation between and study of the effect of leakage current, maximum ratings of the transistor.
 - iv) Common source characteristics of a JFET - measurement of transconductance g_m and drain to source resistance r_{ds} , use of FET as VVR.

4. Rectifying circuits
 - i) HW rectifier
 - ii) FW rectifier
 - iii) FW Bridge rectifier
 - iv) Filter circuits - Capacitor filter, inductor filter and Pi section filter
(Measurement of ripple factor, maximum ratings of the devices)
5. Clipping and clamping circuits using diodes / transistors

Electrical Measurement Lab

1. Calibration of Three phase energy meter by direct loading and phantom loading.
2. Calibration of singlephase energy meter at u pf by direct loading and phantom loading.
3. Calibration of single phase energy meter at 0.5 p f lead lag.
4. Calibration of single phase energy meter at 0.866 pf lag and lead.
5. Three phase power measurement using two waltmeter method.
6. B-H curve.
7. Measurement of Self and mutual inductance of a single phase transformer.
8. Wheatstone bridge.
9. Kelvin double bride.

BASIC Electrical Engineering Lab.

1. Verification of Kirchoff's Law.
2. Verification of Superposition theroum.
3. Verification of Newton's theroum.
4. One phase power measurement using waltmeter by load varying, voltage varying method.
5. R.L.C Series and Parallel.
6. Verification of Reciprocity theroum.
7. Measurement of one phase power using 3. Ammeter, 3 woltmeter method
8. Maximum Power transfer theroum.

V I chara of linear resistance and incandescent lamps.

ELECTRICAL MACHINES LABORATORY.

Compulsory experiments

1. (a) Preliminary study of AC and DC Power supplies in the laboratory.
(b) Study of instruments and their mode of use
2. Open circuit characteristics of
 - (a) Self excited generator
 - (b) Separately excited generator.
3. Load characteristic of compound generator
4. Load characteristic of shunt generator
5. Study of face plate starter and starting of DC motors
6. Load characteristics of DC series motor.
7. Swinburn's test
8. Polarity and transformation ratio test on single phase transfer.
9. O.C & SC test on single phase transformer - equivalent circuit

10. Load test on single phase transformer.
11. Study of starting methods of squirrel cage and slip ring induction motor.
12. Load test on slip ring induction motor and study of characteristics.

Optional Experiments

1. Study of single-phase motors.
2. Load test of DC shunt motor.
3. Poly phase connection of single phase transformer.
4. Load test on squirrel cage induction motor
5. Study of alternators.

FOURTH SEMESTER

DIGITAL ELECTRONICS LABORATORY

1. Transfer characteristics and specifications of TTL and MOS gate
2. Design of half adder and full adder using NAND gates.
3. Set up R-S & JK flip flops using NAND Gates
4. Code converters - Binary to Gray and gray to Binary using mode control.
5. Asynchronous UP / DOWN counter using JK Flip flops
6. Design and realisation of sequence generators.
7. Study of shift registers and design of Johnson and Ring counter using it.
8. Binary addition and subtraction (a) 1's complement (b) 2's complement
9. Study of IC counters 7490, 7492, 7493 and 74192.
10. Astable and monostable multi- vibrators circuit using 555
11. ADC at least one method.
12. Study of MUX & DeMUX Circuits and ICs

ELECTRONICS CIRCUITS LABORATORY 1

I Study of RC and RLC circuits - Frequency responses, pulse response, Filter characteristics,

II Differentiating circuit and integrating circuit Biasing of Active devices

i) Voltage biasing, current biasing and Feedback biasing of BJT

ii) Biasing of JFET

III Amplifying circuits

(i) Simple common emitter amplifier configuration - gain and bandwidth.

(ii) Common source amplifier

Functions of each component, gain measurement, frequency responses

IV Feedback amplifier circuits - Current series and voltage shunt - gain and bandwidth..

V Oscillators - RC phase shift. Wein Bridge

VI Multivibrators - Astable , Bistable, monostable.

VII Sweep circuits - Simple transistor sweep, bootstrap sweep.

VIII Series Voltage Regulator using transistors.

FIFTH SEMESTER

MICROPROCESSOR LAB

Part A (Compulsory)

1. Study of a typical microprocessor trainer kit and its operation

2. Simple programming examples using 8085 instruction set. To understand the use of various instructions and addressing modes - Monitor routines.

3. Interfacing and programming of 8255.(eg: traffic light control, burglar alarm, stop watch)

4. Interfacing and programming of 8253/ 8254.

5. Interfacing and programming of 8279.

Part B*

1. A/D and D/A converter interface

2. Stepper motor interface

3. Display interface

4. Programming of different types of EPROM 2716, 2732 etc

(* At least two topics from part B has to be covered.)

ELECTRONIC CIRCUITS LAB II

PART A (Compulsory)

I Linear circuits

Circuits using OP- Amps - Inverting & non inverting amplifiers , Summing Amplifier, Differential Amplifier, Instrumentation Amplifier, Integrators & Differentiators , Measurements of offset voltage and its compensation .Precision rectifiers

II Circuits using op-amps for waveform generation.

i) Astable, monostable multivibrators .

ii) Wein bridge oscillator

iii) Triangular, square wave form generators.

III Second order Active RC filters

High pass, low pass

IV Voltage regulators using 723 with short circuit protection..

PART B (*)

1. Characteristics of SCR, TRIAC, MOSFET
 2. Trigger circuits for full wave/halfwave fully controlled / half controlled thyristor circuits.
 3. Study of phase control rectifier - Resistive load, inductive load, effect of free wheeling diode.
 4. Study of motor speed control.
 5. Study of UPS / SMPS
- * Atleast two topics from part B has to be covered.

COMMUNICATION LAB I**PART A (compulsory)**

1. Active Filters Band Pass, Band reject (II order Butterworth)
 - 2 Amplitude modulation - Collector modulation - measurement of modulation Index.
 3. Frequency modulation using FET and VCO - Frequency deviation
 4. IF amplifier - Frequency response
1. AM Demodulator and Delayed AGC
 2. F. M. Demodulator and Frequency synthesizing using PLL
 3. Frequency Converter (Mixer)
 4. Time division multiplexing

PART B (*)

1. PAM.modulator and demodulator
 2. PWM modulator and Demodulator
 3. PPM modulator and Demodulator.
- * Atleast two topics from part B has to be covered

MINOR PROJECT LAB

Each batch of (max of 5) students shall design, develop and realize an electronic product. Basic elements of product design must be considered. Electronic part must be an Analog or Digital system

covered up to VI semester. Student has to submit a project report at the stipulated time. Product has to be demonstrated.

Guidelines for evaluation:

Attendance and Regularity 15 Marks

Work knowledge and Involvement 60 Marks

Overall quality of work 15 Marks

Level of completion and demonstration 35 Marks

Project Report 25 Marks

External projects are not encouraged

ADVANCED MICROPROCESSOR LAB

PART A

1. Introduction to IBM/PC and its DEBUG program commands
 - Examining and modifying the contents of the memory
 - Assembling 8086 instructions with the ASSEMBLER commands
 - Executing 8086 instructions and programmes with the Trace and GO Command.
 - Debugging a program
2. Assembly language program development using IBM/PC Macro assembler
 - Creating an Assembler source file
 - Assembling source program with MASM
 - The link program - creating a RUN module
 - Typical programming examples.
3. Study of typical 16-bit trainer kit and its operation.
4. Interfacing Experiments with micro controllers

PART B (*)

1. Concept of interfacing the 16 bit trainer kit with IBM/PC and down loading the program developed in IBM PC using MASM
 2. Familiarization of using an In Circuit Emulator for 8086/8086 based systems.
 3. Familiarization of using typical ADD on cards for IBM PC and their applications
 - ADC cards
 - Multifunction I/O cards
 - Data acquisition cards
 - Thermo couple input cards
 - OPTO I/O card
 4. Familiarization of using a Logic Analyzer for trouble shooting μ P based Systems.
 5. Interfacing Experiments with micro controllers.
- * At least 3 topics have to be covered.

COMMUNICATION LAB II

PART A

(Compulsory)

1. Digital Modulation and Demodulation Schemes (atleast two schemes).
2. Optical fiber Communication (Analog and Digital , 2 Experiments).
3. Microwave Communication(2 Experiments)
4. Digital Signal Processing using DSP trainer kit (At least 2 Expts.)

PART B

(Atleast 2 Experiments)

1. DSP using software tools
2. Communication system simulation using software tools
3. DAS using Microprocessors.
4. Experiments on Computer communication

PROJECT & SEMINAR

Each student shall individually prepare and present a seminar on a topic of current relevance and submit a report on stipulated time.

Labs of Division of Mechanical Engineering

1.Metrology Lab

Major equipments available are Vernier Calipers,Vernier Depth gauge,Inside Micrometer,Outside Micrometer, Bevel Protractor, Dial gauge,Slip Gauge,Combination set, Sine Bar,Precision surface plate, Screw pitch guage,Wire Guage,Radius Guage,Gear Teeth Vernier Caliper.

2.Mechanical Workshop

Sections in this workshop are Fitting shop,Sheet metal shop, carpentry shop, Welding shop.

Computer Facilities for the existing programme(s).

Sl. No.	Particulars	Availability	
1.	No. of Computer terminals	280	150
2.	Hardware Specification	P III 850 Dual processor 256 MBX 4-1 GB RAM 18 GB X 4 72 GB HDD SCSI Pentium-III 20 GB HDD 64 RAM, Celeron Processor 40 GB HDD 256 MB RAM	2 60 30
3		Server- System 3400 IBM Intel XEON(TM)CPU Dual Core3.00GHz,CD ROM,Digital Storage Drive,1GB RAM,Optical Mouse,HDD 73GB PC- Desk TOP PC IBM Intel Pentium iiii 3.00 HT Gz 64Bit 946 GZ M/B,1GB RAM,80 GB HDD,FDD,Optical mouse,15" TFT LCD MonitorDVD COMBO drive	3 60

- TOTAL NO OF SYSTEMS CONNECTED BY LAN :150
- INTERNET BANDWIDTH :1 MBPS BROAD BAND
- MAJOR SOFTWARE PACKAGE AVAILABLE
SYSTEM SOFTWARE: WINDOWS,LINUX

APPLICATION SOFTWARE:Ms VISUAL STUDIO,SQL SERVER , C,C++
,JAVA,ORACLE

SPECIAL PURPOSE PACKAGES AVAILABLE : NIL

- OTHER FACILITES

GAMES AND SPORTS FACILITIES :FOOT BALL GROUND ,CRICKET GROUND
,VOLLEY BALL COURT

- EXTRA CURRICULUM ACTIVITIES : N.S.S , NATURE CLUB , DEPARTMENT ASSOCIATIONS, STUDENT UNION
- SOFT SKILL DEVELOPMENT FACILITIES
- NO OF CLASS ROOMS AND SIZE OF EACH :24 SIZE OF 66 SQ.M EACH
- NO OF TUTORIAL ROOMS AND SIZE OF EACH : NIL
- NO .OF LABORATORIES AND SIZE OF EACH:

NAME	SIZE
ADVANCED COMPUTER LAB	:
COMPUTER LAB	:(1)120 SQ.M (2) 90 SQ.M
MCA	:120 SQ.M
ELECTRONICS LAB	:150 SQ.M
ELECTRICAL LABS	:400 SQ.M
MECHANICAL LABS	:420 SQ,M
CIVIL	:200 SQ.M

- NO OF DRAWING HALLS AND SIZE OF EACH: 1
- NO OF COMPUTER CENTRES AND CAPACITY OF EACH : 3 WITH @ 60 TERMINALS EACH.
- CENTRAL EXAMINATION FACILIES :NO OF ROOMS AND CAPACITY OF EACH :NIL
- TEACHING LEARNING PROCESS
- CURRICULA AND SYLLABI FOR EACH OF PROGRAMMES AS APPROVED BY THE UNIVERSITY
- ACADEMIC TIMETABLE.: AVAILABLE

- TEACHING LOAD FOR EACH FACULTY: 10 HOURS THEORY AND 6 HOURS LAB FOR A LECTURER, 8 HOURS THEORY AND 4 HOURS TUTORIAL FOR A TUTOR.
- INTERNAL CONTINUOUS EVALUATION SYSTEM AND PLACE : 2 INTERNAL EXAMINATIONS & 2 ASSIGNMENTS.
- STUDENT'S ASSESSMENT OF FACULTY, SYSTEM IN PLACE, CONDUCTED EVERY YEAR.