STATE COUNCIL FOR TECHNICAL EDUCATION AND VOCATIONAL TRAINING, ODISHA

TEACHING AND EVALUTION SCHEME FOR DIPLOMA IN ENGINEERING COURSES

DISCIPLINE:ELECTRONICS & TELECOMMUNICATION ENIGINEERING   **SEMESTER : 5TH**

SUBJECT CODE	Subject	PERIODS			EVALUATION SCHEME						
		L	T	P	INTERNAL EXAM			END SEM EXAM	PRACTICAL EXAM	TERM WORK	TOTAL MARKS
					TA	CT	TOTAL				
Theory											
BST -501 OR HMT 601	Environmental Studies OR Entrepreneurship and Management	5	-	-	10	20	30	70	-		100
ETT-501	Power Electronics & Industrial Control	4	-	-	10	20	30	70	-		100
ETT-502	Communication Engg-II	4	-	-	10	20	30	70	-		100
ETT-503	Network Communication	4	-	-	10	20	30	70	-		100
ETT-504	Advanced Microprocessor & VLSI	4	-	-	10	20	30	70	-		100
Practical											
ETP-501	Power Electronics Lab	-	-	4	-	-			25	25	50
ETP-502	Communication Engg-II Lab	-	-	4	-	-	-		25	25	50
ETP-503	VLSI Lab	-	-	4	-	-	-		25	25	50
ETP-504	Information Search, Analysis& Presentation (ISAP) Lab	-	-	4					25	25	50
ETP-505	Technical Seminar & Library Study	-	-	2					25	25	50
	TOTAL	**21**	**-**	**18**	**50**	**100**	**150**	**350**	**125**	**125**	**750**

TOTAL PERIODS PER WEEK : 39   TOTAL SEMESTER MARKS: 750

Abbreviations: L-Lecture, T-Tutorial, P-Practical, TA- Teacher's Assignment, CT- Class Test

Minimum Pass Mark in each Teaching Subject is 35%   and in Practical subject is 50%

ENVIRONMENTAL STUDIES
(Common to all Branches of Engg.)
BST-501

Period/Week:　　　05　　　　　　　　　Total Marks: 100
Total Periods:　　　75　　　　　　　　　Theory End Exams: 70; CT (20) +IA (10)

Rationale:

Due to various aspects of human developments including the demand of different kinds of technological innovations, most people have been forgetting that, the Environment in which they are living is to be maintained under various living standards for the preservation of better health. The degradation of environment due to industrial growth is very much alarming due to environmental pollution beyond permissible limits in respect of air, water industrial waste, noise etc. Therefore, the subject of Environmental Studies to be learnt by every Engineering student in order to take care of the environmental aspect in each and every activity in the best possible manner.

OBJECTIVES:

After completion of study of environmental studies, the student will be able to:
1. Gather adequate knowledge of different pollutants, their sources and shall be aware of solid waste management systems and hazardous waste and their effects.
2. Develop awareness towards preservation of environment.

Unit 1:The Multidisciplinary nature of environmental studies　　　(04 periods)
Definition, scope and importance, Need for public awareness.

Unit 2:Natural Resources　　　　　　　　　　　　　　　　　　(12 periods)

Renewable and non renewable resources:
a) Natural resources and associated problems.
- Forest resources: Use and over-exploitation, deforestation, case studies, Timber extraction mining, dams and their effects on forests and tribal people.
- Water resources: Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dam's benefits and problems.
- Mineral Resources: Use and exploitation, environmental effects of extracting and using mineral resources.
- Food Resources: World food problems, changes caused by agriculture and over grazing, effects of modern agriculture, fertilizers-pesticides problems, water logging, salinity, .
- Energy Resources: Growing energy need, renewable and non-renewable energy sources, use of alternate energy sources, case studies.
- Land Resources: Land as a resource, land degradation, man induces land slides, soil erosion, and desertification.
b) Role of individual in conservation of natural resources.
c) Equitable use of resources for sustainable life styles.

Unit 3: Systems **(12 periods)**

- Concept of an eco system.
- Structure and function of an eco system.
- Producers, consumers, decomposers.
- Energy flow in the eco systems.
- Ecological succession.
- Food chains, food webs and ecological pyramids.
- Introduction, types, characteristic features, structure and function of the following eco system:
- Forest ecosystem:
- Aquatic eco systems (ponds, streams, lakes, rivers, oceans, estuaries).

Unit 4: Biodiversity and it's Conservation **(08 periods)**

- Introduction-Definition: genetics, species and ecosystem diversity.
- Biogeographically classification of India.
- Value of biodiversity: consumptive use, productive use, social ethical, aesthetic and optin values.
- Biodiversity at global, national and local level.
- Threats to biodiversity: Habitats loss, poaching of wild life, man wildlife conflicts.

Unit 5: Environmental Pollution. **(18 periods)**

Definition Causes, effects and control measures of:

a) Air pollution.
b) Water pollution.
c) Soil pollution
d) Marine pollution
e) Noise pollution.
f) Thermal pollution
g) Nuclear hazards.

Solid waste Management: Causes, effects and control measures of urban and industrial wastes.

Role of an individual in prevention of pollution.

Disaster management: Floods, earth quake, cyclone and landslides.

Unit 6: Social issues and the Environment **(12 periods)**

- Form unsustainable to sustainable development.
- Urban problems related to energy.
- Water conservation, rain water harvesting, water shed management.
- Resettlement and rehabilitation of people; its problems nd concern.
- Environmental ethics: issue and possible solutions.
- Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust, case studies.
- Air (prevention and control of pollution) Act.
- Water (prevention and control of pollution) Act.
- Public awareness.

Unit 7: Human population and the environment   (09 periods)

- Population growth and variation among nations.
- Population explosion- family welfare program.
- Environment and human health.
- Human rights.
- Value education
- Role of information technology in environment and human health.

Recommended Books:

1. Textbook of Environmental studies, Erach Bharucha, #UGC

2. Fundamental concepts in Environmental Studies, D.D. Mishra, S.Chand & Co-Ltd,

3. Text book of Environmental Studies by K.Raghavan Nambiar, SCITECH Publication Pvt. Ltd.

4. Environmental Engineering by V.M.Domkundwar- Dhanpat Rai & Co.

5. Environmental Engineering & Safety by B.K.Mohapatra.

ENTREPRENEURSHIP & MANAGEMENT
(Code :HMT-601)

Period/Week: 05   Total Marks: 100
Total Periods: 75   Theory End Exams: 70; CT (20) +IA (10)

(COMMON TO ALL BRANCHES OF ENGG EXCEPT CIVIL/ CSE/ IT)

OBJECTIVES:

On completion of the course, students will be able to :
1. Understand the concept of different forms of organization including MSME and various managerial functions.
2. Understand Entrepreneurship and choose it as a career option after study.
3. Learn about the basic financial accounting and cost control.
4. Know different areas of management relating to stores and purchase, finance, production, sales and marketing and human resources in an organization.
5. Learn about various reasons of industrial sickness and its remedial measures.
6. Have a comprehensive idea on important legislations relating to employment in Factory.

SYLLABUS

1. **Concept of Organization & Enterprise Management:**   **12 periods**

    1.1.   Meaning, features and components of Business
    1.2.   Different forms of Business Organizations with features
    1.3.   Meaning, definitions and importance of management
    1.4.   Difference between Management & Administration
    1.5.   Functions of management- Planning, Organizing, Staffing, Directing (including Motivation, Leadership & Communication), Coordinating and Controlling.
    1.6.   Principles of Scientific Management.

2. **Entrepreneurship & Management of MSME:**   **12 periods**

    2.1.   Meaning & Need of Entrepreneurship
    2.2.   Qualities of an Entrepreneur
    2.3.   Relevance of Entrepreneurship of Socio-economic gain (Generating national wealth, creating wage & self employment, developing MSME enterprises, Optimizing human and national resources, building enterprising personalities and society
    2.4.   Micro, Small and Medium Enterprises. (investment limits of MSME)
    2.5.   Project Report- PPR & DPR. (Preparation of a PPR)
    2.6.   Incentives available to MSME as per the latest IPR
    2.7.   Role of DIC, OSFC, OSIC, IDCO, SIDBI, IPICOL and Commercial Banks in the context of MSME.

3. **Financial Accounting & Cost Control:** **12 periods**

   3.1. Double- entry System of Book –keeping and types of accounts
   3.2. Journal, Ledger, Cash Book (different types), Trial balance
   3.3. Components of Final Accounts- Trading A/c, Profit & Loss A/c and Balance Sheet
   3.4. Elements of Cost and Preparation of Cost Sheet
   3.5. Break-even Analysis

4. **Financial Management:** **04 periods**

   4.1. Meaning & Importance
   4.2. Finance Functions
   4.3. Types of Capital- Fixed & Working Capital
   4.4. Components of Working Capital, Working Capital Cycle

5. **Stores & Purchase Management:** **05 periods**

   5.1. Inventory Control : Importance & Techniques
   5.2. Purchase management-Principles & Procedures
   5.3. Important Store Records (Bin Card, Stores Ledger & GRN)

6. **Production Management:** **04 periods**

   6.1. Production & Productivity
   6.2. Production , Planning & Control- (meaning & steps)

7. **Sales & Marketing Management:** **08 periods**

   7.1. Sales & Marketing Management- Meaning & Importance
   7.2. Selling Methods
   7.3. Product Policy- (Branding, Packaging, Labeling)
   7.4. Product-mix, Pricing methods and Sales Promotion including its techniques.
   7.5. Advertising & its media

8. **Human Resource management:** **06 periods**

   8.1. Need & Importance
   8.2. Recruitment & its sources
   8.3. Selection- Methods
   8.4. Training- Need, & Methods
   8.5. Need of Performance Appraisal

9. **Industrial Sickness:** **04 periods**
   9.1. Meaning & Symptoms of Sickness
   9.2. Causes of Industrial Sickness
   9.3. Remedial measures of Sickness

10. **Industrial Legislation:**   **08 periods**

    10.1. Major Provisions of Factories Act relating to Health, Welfare, Safety, Accidents, Hours of Work, employment of Women

    10.2. Duties and Power of Factory Inspector

    10.3. Major Provisions of Employee's Compensation Act.

Books Recommended:

1. Industrial Engineering & Management :   O.P.Khanna
2. Entrepreneurship for Engineers :   B.Badhei
3. Principles & Practice of Management :   L.M.Prasad
4. Industrial Engineering & Management: Banga & Sharma
5. Mercantile Law: N.D.Kapoor
6. Industrial Engineering & production Management: M.Mahajan
7. Industrial Policy Resolution (latest)

POWER ELECTRONICS & INDUSTRIAL COUNTROL

Course Code:	ETT-501	Teachers Assessment :	10 Marks
Theory:	4 Periods per Week	Class Test :	20 Marks
Total Periods:	60 Periods per Semester	End Semester Exam :	70marks
Examination:	3 Hours	TOTAL MARKS :	100 Marks

A: RATIONALE :

The concept of power electronics &industrial Control haveto give broad base Knowledge of power Electronics and industrial application. It encompasses the topics like power Semiconductor devices, SCR control Mechanism , Controlled rectifier, chopper, Inverter &Cycloconvertor. The industrial application will enable the students to gather knowledge of Industries & automation. Power electronics play important role in electronics power generation andpower transformation. This subject is importantlink between basic electricity and advanced electronic applications. This subject shall provide firmfoundation for many industrial applications and processes.Industrial electronics shall play very important role for shop floor engineers in the field ofindustrial applications like conversion, inversion, and stabilization of ac & dc power control etc.

B: OBJECTIVES :

On Completion of the course the student will able to
1. Know the principle of operation, Characteristics and applications of power semiconductor devices
2. Understand turn-on and turn-off methods for SCR.
3. Know the operation of controlled rectifier
4. Know the operation of chopper
5. Know the operation of inverter
6. Know the operation of Cyclo-converter.
7. Understand ratings, specifications, protection, selection and reliability of SCRII
8. Know the operation of power supplies, stabilizers and generator voltage regulator.
9. Know the temperature control circuit and various applications.

C: COURSE CONTENTS & DISTRIBUTION OF PERIODS:

1 Power Semiconductor devices   12
   1.1   Power Diode
       1.1.1 Explain the operation, construction & application of Power Diode
       1.1.2 Explain V-I characteristics curve of Power Diode
   1.2   SCR
   1.2.1   Draw the layer diagram of SCR and explain the operation& construction of SCR.
   1.2.2   Explain the two transistor analogy of SCR
   1.2.3   Explain the Static V-I characteristics &Dynamic characteristics of SCR.
   1.2.4   List applications of SCR
   1.3   DIAC
   1.3.1   Explain the operation, construction of DIAC and draw V-I characteristics curve
   1.3.2   List applications of DIAC
   1.4   TRIAC
   1.4.1   Explain the operation, construction of TRIAC and draw V-I characteristics curve
   1.4.2   List the modes of operation of TRIAC and mention the preferred modes
   1.4.3   List applications of TRIAC (Phase control using TRIAC)
   1.5   Power BJT
   1.5.1   Describe the operation, construction of an NPN POWER Transistor as a switch
   1.5.2   List the applications of BJT in Power switching applications

1.6   Power MOSFET
  1.6.1   Explain the operation, construction of Power MOSFET and draw its
           characteristics curve
  1.6.2   List applications of MOSFET
1.7   GTO
  1.7.1   Explain the operation, construction of GTO and draw its V-I characteristics
  1.7.2   List application of GTO
1.8   IGBT
  1.8.1   Explain the operation, construction of IGBT and draw its characteristics curve
  1.8.2   List applications of IGBT

2 SCR control circuits   08
  2.1   **Turn On Methods**
   2.1.1 Describe briefly different methods of TURN ON of an SCR
   2.1.2 List two general functions to be fulfilled by gate control circuits
  2.2   Firing Circuits
   2.2.1 Draw the general layout diagram of firing circuit and explain the same
   2.2.2 Draw R firing circuits and explain the same
   2.2.3 Draw R-C firing circuit and explain the same
   2.2.4 Draw UJT pulse trigger circuit and explain the same
   2.2.5 Explain Synchronous triggering (Ramp Triggering)
  2.3   Turn-off methods (Communication Schemes)
   2.3.1 Define commutation&List different types of communication methods
   2.3.2 Explain the following communications with circuit diagram and waveforms
          a) Line communication
          b) Auxiliary voltage communication
          c) Resonant communication

3 Controlled Rectifiers   10
  3.1   Explain controlled rectifiersTechniques(Phase Angle, Extinction Angle control &
           PWM)
  3.2   Explain single quadrant semi converter, two quadrant full converter and dual
           converter
  3.3   Explain the principle of phase control and define firing angle (alpha) and
           Conduction angle (beta) with the help of schematic and waveforms for
           Half wave controlled rectifier
  3.4   Explain with schematic diagram and waveforms the operation of single phase
           fully controlled bridge converter with Resistive load only & RL load
  3.5   Explain with circuit diagram and waveforms the operation of fully controlled three
           phase bridge converter with Restive load & RL Load

4 Choppers   06
  4.1   Define chopper& give its applications.
  4.2   Explain Principle of operation of
              • Step down chopper (Buck converts)
              • Step down chopper (Boost converts)
              • Step up & Down chopper (Buck Boost converts)
  4.3   Define control Strategies of chopper (TRC & Current unit)
  4.4 Give the different chopper configuration (Single quadrant Class A and Class B, Class
           C and Class D& Four quadrant Class E)

5. Inverters   **05**
- 5.1   Define inverter& its classification & applications.
- 5.2   Draw the schematic diagram of single phase half bridge voltage source inverter (without communication circuit)and explain its operation.
- 5.3   Draw the schematic diagram of single phase full bridge inverter (without communication circuit) and explain its operation.
- 5.4   Draw the schematic diagram of three phase bridge inverter (without communication circuit) and explain its operation.

6 Cycloconverters   **05**
- 6.1   Define Cycloconverter and mention its types (step up and step down)& its application
- 6.2   State the advantages and disadvantages of Cycloconverter
- 6.3   Draw the diagram of a single phase to single phase Cycoconverter (Step UP & Step Down) with pure Resistive loadand explain.& draw its waveform.

7 Protection,Ratting& failure of Power Electronics Devices   **05**
- 7.1   Give specification, ratings and nomenclature of Thyristors
- 7.2   Describe how SCR can be protected against Over voltage and over current
- 7.3   Describe dv/dt and di/dt protection of SCR
- 7.4   Define Snubber Circuit& Design Snubber Circuit
- 7.5   Describe the process involved in selecting an SCR for a particular application
- 7.6   Define reliability of SCR and mean time between failures (MTBF)
- 7.7   Explain the three failures of an SCR(Mechanical, Electrical and Thermal)

8 Industrial Electronics   **12**
- 8.1   Define Power Supplies, Stabilizers and Generation voltage regulators
- 8.2   Draw a schematic diagram of linear power supply that provides + or – 5V and + or -15V & Explain its operation
- 8.3   Draw a schematic diagram of switched mode power supply (SMPS) and explain its operation & application&Compare linear power supply with SMPS
- 8.4   Draw a schematic diagram of SCR battery charger and explain
- 8.5   Define online UPS system and offline UPS system
- 8.6   Draw a block diagram of UPS system and explain its operation & application
- 8.7   Draw the diagram of AC servo voltage transformer (CVT) type &AC voltage stabilizer and explain its operation
- 8.8   Explain Static Circuit Breaker (AC & DC)

9. Applications   **07**
- 9.1   Draw a temperature controlled circuit with thermistor and TRIAC and explain
- 9.2   Draw SCR burglar alarm circuit and explain its operation
- 9.3   Draw fire alarm circuit and explain
- 9.4   Draw proximity alarm circuit & explain its operation;
- 9.6   Give basic Opto-coupler device construction and explain its operation.
- 9.7   Draw circuit diagram of Solid State Relay (SSR) and explain its operation.

RECOMMENDED BOOKS:

a) **Text Book**:

1. Power Electronics by MD Singh &KB Khanchandhni, TMH.
2. Power Electronics by Ram Babu,-SCITECH Publication
3. Power Electronics by Dr P.S.Bimbhra-Khanna Publishers

b) **REFERENCE BOOK**:
1. Industrial Electronics by M.Ram.Murty.
2. Theory of Power Electronics by K L RAO & CH. SAIBABU-S.Chand
3. Practical SCR / Triac projects by M.C Sharama
4. Industrial Electronics and Control by S;K; Bhattacharya & S Chatterjee-MC Graw Hill
5. Power Electronics by P.C.Sen

COMMUNICATION ENGINEERING-II

Course Code:	ETT-502	Teachers Assessment :	10 Marks
Theory:	4 Periods per Week	Class Test :	20 Marks
Total Periods:	60 Periods per Semester	End Semester Exam :	70marks
Examination:	3 Hours	TOTAL MARKS :	100 Marks

A: RATIONALE:

This course is designed to impact knowledge of Communication Engineering. This course includes idea of Electromagnetic waves, Broadcast engineering is the field of electrical engineering, and now to some extent computer engineering and information technology, which deals with radio and television broadcasting. Audio engineering and RF engineering are also essential parts of broadcast engineering, being their own subsets of electrical engineering. Broadcast engineering involves both the studio end and the transmitter end (the entire airchain), as well as remote broadcasts. Every station has a broadcast engineer, though one may now serve an entire station group in a city, or be a contract engineer who essentially free-lances his or her services to several stations This course is aimed at providing study of basic principle of Audio, Video, & TV System and its components including microphone, Loudspeaker. The course content consists of study of basic principle of TV System including the generation & receiving System. The recent developments in TV Technology has also in corporate

B: OBJECTIVS:

At the end of the course the students should be able to :
1. Describe EM Wave and its effects of environment.
2. Explain the concept of Wave propagation and antenna.
3. Explain the propagation of signal through transmission lines.
4. Explain the transmission of waves through rectangular wave-guide.
5. Discuss the losses, SWR & Impedance matching of transmission line.
6. Explain the fundamental principle of TV transmission and reception.
7. Explain the principle of working of TV camera. (CCTV)
8. Explain the principle of colour TV system.
9. Discuss the principle of Digital TV.
10. Discuss the principle of HDTV.

C: COURSE CONTENTS & DISTTIBUTION OF PERIODS:

1. ELECTROMAGNAETIC WAVES   09
1.1 Study the basic fundamental concept of electromagnetic waves.
1.2 Discuss the effects of environments such as reflection, refraction, interference, diffraction, absorption and attenuation
1.3 Transverse electromagnetic wave, polarization
1.4 Ground wave, Ionosphere ,Sky wave propagation, Space wave propagation
1.5 Concept of actual height and virtual height.
1.6 Definition – critical frequency, max. useable frequency, skip distance, fading, Duct propagation &Troposphere scatter propagation

2. WAVE PROPAGATION & ANTENNA.   10
2.1 Explain wave radiation in space.
2.2 Describe propagation of waves.
2.3 Describe radiation mechanism of an antenna.
2.4 State and explain the following terms.
   2.4.1 Antenna gains, Directive gain, Directivity, effective aperture, polarization, input impedance, efficiency,

2.4.2 Radiator resistance, Bandwidth, Beam width.

2.4.3 Transmission equation, radiation integrals and auxiliary potential functions

2.5 Explain the operation of following antenna with advantage & applications.

    a) Directional high frequency antenna : Dipole array, Yagi & Rohmbus)

    b) UHF &Microwave antenna.: Dish antenna (with parabolic reflector), Horn antenna

2.6 Basic Concepts of Smart Antennas- Concept and benefits of smart antennas

3. TRANSMISSION LINES.   10

3.1   Fundamentals of transmission line.

3.2   Equivalent circuit of transmission line ,General equivalent circuit &RF equivalent circuit

3.3   Characteristics impedance, methods of calculations & simple numerical.

3.4   Losses in transmission line.

3.5   Standing wave – SWR, VSWR, Reflection coefficient, simple numerical.

3.6   Quarter wave & half wavelength line

3.7   Impedance matching & Stubs – single & double

3.8   Derive equation for primary & secondary constant of X-mission line.

4. TELEVISION ENGINEERING.   13

4.1 Discuss the basic idea of television system.

4.2 State and explain the following terms.- Aspect ratio, Rectangular Switching. Flicker. Resolution, Video bandwidth, Interlaced scanning., Composite video signal, Synchronization pulses

4.3 Draw the block diagram of TV transmitter and explain the function of each block.

4.4 Draw the block diagram of Monochrome TV Receiver and explain the function of each block.

4.5 Draw a black diagram of SMPS of TV and explain its working principle.

4.6 Discuss the Colour TV signals (Luminance Signal & Chrominance Signal,(I & Q,U & V Signals).

4.7 Discuss the principle of operation. of

- LCD display,
- Large Screen Display.

4.8. Explain (Digital TV Signals, Transmission of digital TV signals & Digital TV receivers Video programme processor unit.

5.0   MICROWAVE ENGINEERING.   10

 5.1 What are the advantages of Microwave & its application?

5.2   Define Microwave Wave Guides.

    5.2.1 Explain the operation of rectangular wave gives and its advantage.

    5.2.2 Discuss propagation of EM wave through wave guide with TE&TM modes.

    5.3.3 Explain circular wave guide.

5.3 .Discuss the operational Cavity resonator.

5.4Discuss the operational of Directional coupler,Isolators & Circulator.

5.5 Discuss the principle of operational of two Cavity Klystron.

5.6. Discuss the principle of Magnetron.

 5.7   Discuss the principle of Travelling Wave Guides

6. Broadband Communication   8

6.1   Fundamental concepts Components and Network architecture of Broadband communication system,

6.2   Cable broadband data network architecture, importance & future of broadband telecommunication internet based network.

6.3   Benefits and applications, SONET(Synchronous Optical Network)-Signal frame components topologies advantages applications, and disadvantages

6.4   ISDN & BISDN- ISDN Devices interfaces, services, Architecture, applications, BISDN interfaces & Terminals, protocol architecture applications of BISON

RECOMMENDED BOOKS:

Text Books:

1. Electronic Communication by G.Kennedy.-TMH

2. Communication Systems by V.ChandraSekhar - OXFORD

3. Television & Video Engineering by A.M.Dhake, Tata McGraw Hill.

4. Broadband Communication System by AKUJUOBI & SADIKU (PHI)

5. Microwave & Radio Engg. By M.Kulkani-Ummesh Publication.

Reference Books:

1. Microwave Engineering by MonojilMitra – DhanpatRai& Co

2. Microwave Engineering by Dharma Ray Cherulu.

3. Fundamental Of Microwave And Radar Engg. By Er K.K. Sharma

4. J.D. Kraus, Antennas, McGraw Hill, .

5. C.A. Balanis, Antenna Theory - Analysis and Design, John Wiley,

6. R.E. Collin, Antennas and Radio Wave Propagation, McGraw Hill, .

7. Radio Engineering by M.L.Gupta.

8. Monochrome & colour T.V-R.R. Gulati

9. Broadband Communication by Balaji Kumar

10. Introduction to Broadband Communication Sysyem by Chapman & Hall

NETWORK COMMUNICATION

Course Code: ETT-503   Teachers Assessment : 10 Marks
Theory: 4 Periods per Week   Class Test :   20 Marks
Total Periods: 60 Periods per Semester   End Semester Exam :   70marks
Examination: 3 Hours   TOTAL MARKS :   100 Marks

A: RATIONALE:

This course is providing the study of basic principle of Networking of computers, Network Model, Protocol, Topology & Classification, Data Communication Circuit, and Components of LANs &Internet.This Course also contains the wireless communication including basic technology and 3G wireless networks.

B: OBJECTIVS:

At the end of the course the students should be able to :
1. Know the Network Components, Classification, Topology & its Functions.
2. Know the different types of Protocols.
3. Know the different types of Network Circuit.
4. Know the Broadband Technology & Internet.
5. Concept of LAN.
6. Know the Technology of Cell Phone & generations.

C: COURSE CONTENTS& DISTRIBUTION OF PERIODS:

1.   Network Components, Functions and Features :   **06**
1.1   Define Networking& what is a network criterion.
1.2   What are the Advantages of Networking?
1.3   Explain Networking Models.(Server, Client)
1.4   Explain Transmission Media & Shared Data, Share Peripherals,
1.5   Explain NIC &Card & its applications.
1.6   Explain Local Operating System, & Networking Operating System.

2.   Network Topology & Classification   **05**
2.1   Define the Network Topology.
2.2   Describe various Network Topology.(Star, Bus, Ring, Mesh.)
2.3   State the different classification of Networks
2.4   Explain the different Networks model. (LAN, WAN, MAN)
2.5   Explain interconnection of Network.

3. Data Communication Circuits   05
3.1 Explain different Data Communication Circuit.
    i.Serial&Parallel Transmission.
    ii.Synchronous& Asynchronous Transmission.
    iii.Simplex, Half Duplex, Full Duplex.

4.Switching   05
4.1 Define Switching.
4.2 Explain the Features of circuit switching and packet switching (Data gram approach &
    Virtual circuit approach) and its comparison.
4.3 Explain the features of cell switching.

5. Protocols   05
       5.1   Define Data Communication Protocols.
       5.2   Discuss the 7 layers of OSI model.

6. Local Area Network (LAN)   06
       6.1.   Name different types of LAN Components
       6.2   Explain Hardware & Software
       6.3   Describe Transmission Channel.
       6.4   Explain Network Interface Card.
       6.5   Explain briefly LAN operating system.
       6.6   Describe Wireless LAN.

7. Network Elements   04
       7.1   Explain the following terms –
       Hub,Bridge, Router, Gateway Modem, Dial in Remote Access.

8. Internet: 12
       8.1   Explain Internet Protocols, TCP/IP: IP address and its format, TCP/IP Based Package and its standards.
       8.2   Explain World Wide Web(WWW), WWW Browsers, Servers, HTTP Universal Recourses Locator (URL), Search Engines and Hypertext.
       8.3   Define Browser.Customisation of browser, Saving and printing of Web page, internet Explorer.
       8.4   Explain Types of Internet Connection and common name structure of three security protocols.
          8.4.1   Discuss the type of Internet Connection (Dial Up, SLIP, DSL (ADSL & SDSL), Direct Connection(Leased Connection, Satellite Connection)
          8.4.2   Discuss X.25 technology, Frame Relay & its application
       8.5   Concept Wireless Technology, Bluetooth Technology, WiMax, WiFi Technology.

9. WIRELESS COMMUNICATION: 12
       CELL PHONE :
       9.1   Explain the concept of frequency reuse channel assignment strategic handoff
       co-channel Interference and system capacity of a Cellular Radio systems.
       9.2   Define Cell &Explain the improving coverage and capacity in cellular system
       (Cell Splitting, Sectoring)
       9.3   Explain Wireless Systems and its Standards.
       9.4   Discuss the GSM (Global System for Mobile) service and features.
       9.5   Discuss the architecture of GSM system & GSM mobile station.
       9.6   Discuss radio sub system and channel types of GSM system.
       9.7   Discuss the frequency and channel specifications of CDMA system.
       9.8   Explain the working of forward and reveres CDMA channel.
       9.9   Discuss the architecture and features of GPRS.
       9.10   Discuss the mobile TCP, IP protocol.
       9.11   Discuss the operation of Wireless Application Protocol (WAP).
       9.12   Discuss the architecture and features of SMS.
       9.13   Discuss the architecture and features of MMS.
       9.14   Discuss the features of EDGE & UMTS system.
       9.15   Discuss the features of 2G, 2.5G, 3G & 4G Wireless network.
       9.16   What is Smart Phone and discuss its features.

RECOMMENDED BOOKS:

A: TEXT BOOKS

1. Advance Communication Engineering by Tomasi, EEE.
2. Data Communication and Networking by B.A.Forouzan
3. Wireless Communication By S. Rappaport-PHI

B: REFERENCE BOOKS

1.Data Communication & Computer Networks-ISRD group

2.Mobile Communication- G.K.Beher & Lopamudra Das- SCITECH.

3. Wireless Communication by Rishabh Anad –S.Chand

4. Mobile Computing by Dr.N.N.Jani&N.Kannabar-S.Chand.

5.Wireless Communications by T.L.Singal

6.Mobile Computing by S. Nithyanandam,M. Ambika, K S Gayathri –Dhanpat Rai & CO

ADVANCED MICROPROCESSOR & VLSI

Course Code:	ETT-504	Teachers Assessment :	10 Marks
Theory:	4 Periods per Week	Class Test :	20 Marks
Total Periods:	60 Periods per Semester	End Semester Exam :	70marks
Examination:	3 Hours	TOTAL MARKS :	100 Marks

A: RATIONALE :

This course gives the basic understanding of microprocessor (Advanced) & VLSI System. Now a days it has been included every where for day today life. This includes features of Microprocessors and its Standars. The VLSI design is to helps the idea about Logic design including testing & simulation.

B: OBJECTIVES :

On Completion of the course the student will able to

- Know the advanced Microprocessor & its standards.
- Know the VLSI design.
- Know the concept of MOS, Transistor & Invertors.
- Know the combinational & sequential logic circuit.
- Know the system design methods.

C: COURSE CONTENTS &DISTRIBUTION OF PERIODS:

1. **ADVANCED MICROPROCESSORS AND STANDARDS**   **10**
    1.1 Explain the block diagram of advanced microprocessor, bus interface unit-
      Microprocessor cache super scalar issue of instructions, integer unit-floating
      point unit-MMU.
    1.2 Explain Memory Hierarchy – Register file –cache-address mapping- virtual
      memory and paging segmentation.
    1.3 Discuss Pipe lining – pipe line hazards Instruction level parallelism, RISC versus CISC.
    1.4 Bus Standards: Explain Parallel Communication–
      Serial Communication-RS 232 – I^2C – CAN-USB –FireWire
      Wireless Communication-IrDA
    1.5 Basic features and compare between 80486 & Pentium IV processor.

2. **Introduction to VLSI**   **10**
    2.1   Define Historical perspective.
    2.2   Introduction to MOS Transistor& Basic operation of MOSFET.
    2.3   Explain structure and operation of MOSFET (n-MOS enhancement type)& COMS
    2.4   Explain MOSFET V-I characteristics
    2.5   Explain MOSFET scaling and small geometry effects.
    2.6   Explain MOSFET capacitances.
    2.7   Explain Modelling of MOS Transistors including Basic concept the SPICE level-1
      models, the level-2 and level-3 model.

3. **Fabrication of MOSFET** .   **10**
    3.1   Explain Basic steps in MOS Fabrication processes
    3.2   NMOS Fabrication process
    3.3   CMOS Fabrication Process Flow
    3.4   MOS Fabrication process by n-well on p-substrate
    3.5   CMOS Fabrication process by P-well on n-substrate
    3.6   Explain Layout Design rules
    3.7   Explain Stick Diagrams
    3.8   Stick Diagram of CMOS inverter
    3.9   Explain VLSI Design methodologies
    3.10   VLSI Design Flow & Y chart

4.MOS Inverter   **05**

4.1   Explain Basic n MOS inverters, characteristics,

4.2   Describe inverters with resistive load,active Enhancement Load,Active Depletion n-MOS inverter

4.3   Explain CMOS inverter and characteristics and interconnect effects: Delay time definitions

4.4   Explain inventor design with delay constraints.

5. Static Combinational, Sequential & Dynamics logic circuits   **12**

5.1   Define Static logic

5.2   Explain Static CMOS logic circuits (AOI, NAND ,NOR)

5.3   Explain XOR & XNOR CMOS logic circuits

5.4   Explain Complementary Pass Transistor (CPL) Logic

5.5   Define Dynamic logic and difference with static logic

5.6   Define high performance dynamics CMOS circuits.

5.7   Explain Dynamic Ram, SRAM, flash memory

5.8   Explain SR Flip Flop/latch,

5.9   Explain clocked SR latch flip-flop circuits.

5.10   Explain D latch.

6   **System Design method & synthesis**   **09**

6.1 Design Language (SPL & HDL)&Explain HDL & EDA tools

6.2 Design strategies & concept of FPGA with standard cell based design

6.3 Explain design flow using VHDL and packages. Xlinx (introduction)

6.4 Explain RTL &Gate Level languages

6.5 Explain VHDL for design synthesis using CPLD or FPGA

7   **Testing**   **04**

7.1 Explain basic VLSI testing approach

7.2 Explain simulation at various levels including timing verification, faults models.

BOOKS:

Text Books :

1. Advanced Microprocessor & Peripherials- A. K. Ray & K.M. Bhurchandi

2. COMS Digital integrated Circuits –Analysis & Design –Sung Mo-Kang &Yussuf Leblebici, TMH.

3.VLSI Design AND EDA Tools by A. Sarkar,S.De,Chandran Kumar Sarkar -SCITECH

3. VHDL Programming by example – Perry TMH.

4. Embedded System Design –Frank Vahid& Tony Givargis-WILEY India.

Reference Books :

1. VLSI design Techniques for Analog & Digital circuits – R. L. Geiger ,Allen&N.R.Strader-MGH

2. VLSI Design by Dr R.K.Singh-KATSON.

POWER ELECTRONICS LAB

Course Code: ETP-501   Practical Exam :   25 Marks
Practical: 4 Periods per Week   Term Work :   25 Marks
Total Periods: 60 Periods per Semester   TOTAL MARKS :   50 Marks
Examination: 4 Hours

A: RATIONALE :

On complication this Lab. The students will familiar with power electronics devices, different triggering circuit and application of SCR and other industrial application.

B: OBJECTIVES :

After undergoing this course, the student will be able to,
1. Know the characteristics and applications of SCR, DIAC and TRIAC.
2. Understand circuits and equipment used for control of temperature, level and illumination.
3. Understand electronic speed control of motors and voltage regulation.
4. Know the operation of relays and timers.

C: COURSE CONTENTS IN TERMS OF SPECIFIC OBJECTIVES:

1. To plot V-I characteristics and test whether the device is good or defective
   a) SCR   b) DIAC   c) TRIAC   d) GTO   f)IGBT
2. To construct and test
   a) UJT relaxation oscillator
   b) SCR triggered by UJT relaxation oscillator, half wave and full wave
3. To construct/ Study and test triggering SCR using
   a) R firing circuit b)   RC firing circuit   c)UJT Triggering
4. SCR used as DC/AC Circuit breaker.
5. To construct and study temperature controller using TRIAC
6. To construct and study lamp dimmer using TRIAC
7. Study the module & waveform of a Single Phase Half wave Converter using R load & RL load
8. Study the module & waveform of a Single Phase Full wave Converter using R load & RL load
9. Study the module & waveform of a Chopper Circuit
10. Study the module & waveform of a Single Phase Series Inverter using R load
11. To construct and study time delays
12. To construct and study
    a) Proximity switch   b)Burglar alarm   c)   Fire Alarm
13. Study of sequence control circuits
14. Study of UPS Unit and observe the waveform of various section (ON, OFF & Line interactive)
15. Study of servo type voltage AC stabilizer

Reference books
1. SCR manual-GE company
2. Power electronics-RS Ramshaw
3. Thyristors and their applications- M Rammoorthy
4. Industrial Electronics Test lab manual – Paul B Zbar
5. Instructional e-manual supplied by manufacturers

COMMUNICATION ENGINEERING-II LAB

Course Code: ETP-502   Practical Exam :   25 Marks
Practical: 4 Periods per Week   Term Work :   25 Marks
Total Periods: 60 Periods per Semester   TOTAL MARKS :   50 Marks
Examination: 4 Hours

A: RATIONALE :

On Completion of this Lab. the student get knowledge of Microwave Engineering such as Microwave components tubes & semiconductor devices. This also include transmission line trainer & antenna trainer. This Lab. has been designed for basic principle of Audio, Video & TV Engineering which includes the study of Colour TV receiver, CC TV & different section including fault finding

B: OBJECTIVES :

After undergoing this course, the student will be able to:
- Know Microwave Trainer.
- Transmission Line Trainer.
- Wave Propagation Trainer.
- Antenna trainer
  - Study the different section of colour TV.
  - Study the section of CC TV
  - Concept of Audio recording
-

C: COURSE CONTENTS IN TERMS OF SPECIFIC OBJECTIVES:

1. Study the Antenna Trainer for different type of Antenna & find its gain.
2. Draw the radiation pattern & find the characteristics of antenna(Yagi,Horn,,Rombus,Dipole)
3. Draw the waveform of different lobe of different Antennas using antenna trainer
4. Find the Standing Wave ratio (Open & Short Circuit) & different losses in Transmission line
5. To study different types of Microwave components.
6. Measure VSWR of different types of load (Matched, Open, Shorted)using Microwave test bench.
7. Measurement of microwave power using power meter
8. Study & visit the Microwave Station/ TV Transmitter/Radio Transmitter & prepare a Project Report.
9. Study the Block diagram of colour TV receiver and draw the circuit& waveform of different sections.
10. Study the SMPS section and find out load & line regulation.
11. Study the various faults in colour TV.
12. Connect the cable TV ,HD TV & CCTV using Digital camera & Colour TV & observe the output.
13. Study basic principle of Flat screen picture tubes, LCD & Plasma.
14. Mini Project on above to Assembly Mono chrome/Colout TV set and detect its fault at different section. Connection of LCD/LED TV /HD TV with LCD/Computer and concept of HDMI &VGA cable

VLSI LAB

Course Code:	ETP-503	Practical Exam :	25 Marks
Practical:	4 Periods per Week	Term Work :	25 Marks
Total Periods:	60 Periods per Semester	TOTAL MARKS :	50 Marks
Examination:	4 Hours		

A: RATIONALE :

This Lab. Will enable the students gather knowledge in microprocessor (Advanced) & VLSI Lab. Introduction, Combinational Circuit Design, Programmable Logic Devices, Verilog Modelling of Combinational Circuits, RTL Coding Guidelines, Writing a Test Bench, System Design Using ASM Chart and using Sequential Circuits, Micro programmed Design, Design Flow of VLSI Circuits, Modelsim Simulation Tool, Synthesis Tool, Xilink Place and Route Tool, System Design Examples Using FPGA Board.

B: OBJECTIVES :

After undergoing this course, the student will be able to,
- Understand aboutAdvances Microprocessor.
- Understand VDHL code for different application.
- Implement FPGA/CPLD kit.

C: COURSE CONTENTS IN TERMS OF SPECIFIC OBJECTIVES:
1. Write simple VHDL Codes for
   a. Addition.   b.   Subtraction.   C.   Multiplication.D. Division
      and implement on FPGA kit.
2. Write a VHDL Code for
   a. 8 Bit Digital output using LEDs.   b.   8 Bit Digital inputs using.
3. Write VHDL Code for 4 x 4 matrix keypad interface.
4. Write a VHDL Code for
   a. Relay interface   b.   Buzzer Interface
5. Write a VHDL code for 7 segment LED display interface.
6. Write a VHDL code for Stepper motor interface.
7. Write a VHDL code for Traffic light control.
8. Write a VHDL code for 4 bit binary counter an study all using simulation software.
9. Write a VHDL code for LCD display to display a text message.
10. Write a VHDL code to generator PW M signals for DC Motor control.
11. Write a VHDL code & implement of FPGA kit for MUX & DEMUX.
12. Write a VHDL Program & implement of FPGA kit for Encoder, Decoder & Shift Register.
13. Study of Advanced microprocessor such as 32Bit, 64Bit, etc.
14. Generate music using PC Hardware.
15. Mini Project:prepare a report at the end of session in VLSI lab with innovative ideas.

EQUIPMENT REQUIRED:
1. VDHL Simulator Software.
2. Synthesis Software.
3. FPGA / CPLD training Kit.
4. Experiment boards in which programmed FPGA / CPLD can be used.

RECOMONDED BOOKS:
1. VHDL Primer by J.Bhasker.
2. VHDL by Douglas Perry.

INFORMATION SEARCH, ANALYSIS AND PRESENTATION Lab

Course Code:	ETP-504	Practical Exam :	25 Marks
Practical:	4 Periods per Week	Term Work :	25 Marks
Total Periods:	60 Periods per Semester	TOTAL MARKS :	50 Marks
Examination:	4 Hours		

1. TOPIC ANALYSIS:

PART ONE: WRITTEN COMMUNICATION (15Hrs)

A] WRITE RESEARCH PAPERS AND ARTICLES

B] OTHER WRITTEN COMMUNICATION ACTIVITIES
  1. Reports
       a) Formal Reports
    b) Progress Reports
    c) Feasibility Reports
    d) Laboratory Reports
  2. Technical Proposals
  3. E-mail
  4. Instructions and User Manual
  5. Job-Hunting Materials
     a) Resumes
     b) Letters for Job Hunting
  6. Business Letters
  7. Memo, Notices, Agenda and Minutes

PART TWO: ORAL COMMUNICATION (15Hrs)

A] TRANSPARENCY – BASED/PPT PRESENTATION

B] OTHER ORAL COMMUNICATION ACTIVITES
  1. Dyadic Communication (Interaction between two persons example Telephone Conversation)
  2. Meetings
  3. The Job Interview
  4. Group Discussion
  5. Debates
  6. Case Study

NOTE:

    1. Both Written Communication and Oral Communication activities are to take place concurrently. That is every week 3 Hrs(Periods)of Written Communication / 3 Hrs(Periods)of Oral Communication activity has to take place.

    2. Topic selected for part one 'A' and part two 'A' are to be separate and it is left to the student's choice.

    3. The output of part one 'A' activity is a well documented written report, which will be evaluated at the time of examination.

    4. The out put part two 'A' activity is the production of transparencies which the student will use at the time of presentation in the examination.

    5. It may not be possible to do maintain a log of activities shown under part one 'B' and part two 'B'. However student has to do as much activity as possible.

    6. Every student has to maintain a log of activity file, as per the Performa shown below. The concerned staff members has to sign on each day and principle has to certify on the last page in the end. Maintain separate sheets for part one and part two.

Sl.No	Date & Time	Activity	Brief Description	Signature of Staff
1.				
2.				

Activity under part one 'B' and part two 'B' will be evaluated on the basis of his log of activity file.

2. INTRODUCTION:

The average engineer walking out of education institution is surprised by the amount of non-technical work he or she faces in the world (by the amount of personal contact, the number of phone calls, meetings, reports and presentations etc).
Further many cannot find appropriate jobs, because employer's complain that students lack these key skills.
This course attempts to provide a slice of that kind of practical training in a from that may be used in a classroom setting.
This course is NOT a course that is taught to the students in the manner that conventional courses are taught. In this course the emphasis will shift from **teacher – oriented – methods to students – oriented – methods.** While the **information – skills** acquired by all students will be the same, the actual methods and techniques used by each student will vary according to his or her initiative, and various other parameters – individual / group projects allotted, effort put in, enthusiasm shown, discussion held, and so on.

3. OBJECTIVE:

1. Some education researchers in U.S.A. found that 17-year olds, in a single academic year, learn about 200 to 300 new words, in a university environment.
However, during the same period , at their informal home and play environment, they acquire around 4000 words! Strangely enough, learning seems to be higher in an informal environment, than in an academic one, designed specifically for this purpose.
This, they found was because, in an informal home and play environment, the student's learning is self motivated – the student learns because he or she wants to, and needs to f**it-in**. The objective of this course is to simulate an informal learning environment.
2. This course provides an ideal opportunity to acquire skills in **learning – to – learn** which is very essential for his professional growth later on.
3. To inculcate information skills into students i.e. , to let the students acquire information skills on their own initiative and grow with age.
4. Another main objective of this course is to develop written communication skills in students.
NOTE: Information skill – Awareness of an idea, details of an idea and where to look for.

4. ACTIVITIES:

PART ONE: WRITTEN COMMUNICATION (15Hrs)
RESEARCH – Source of Information
a) People
b) Print Media
    - News Paper
    - Magazines
    - Journals
    - Vendors Catalogues
c) Electronic Information
    - CD-ROM
    - The Internet
        - Usenet Newsgroups
        - Connecting to other computers

- The World Wide Web

Student project can be done individually or in groups of not more than five depending on the theme (or main) subject.

Sample Projects:

1. Research the anti-lock braking system used in cars and describe the principle of its operation.
2. Research the mechanism of Laser Printer and describe the principles of its operation.
3. Research the Control Area Network (CAN) protocol used with cars.(Ref. for 1, 2 and Mechatronics by W.Bolton)
4. Research the configuration, price and features of a typical 10/100 Mbs Ethernet Network Interface Card (NIC). Consider features such as media support, transmission distance for a 10/100 BASE-T operation and driver support.
5. Research the price, size and capabilities of a nominally 24 port 10/100 Mbs Ethernet Hub that is applicable for use in a medium size enterprise LAN. Consider features such as transceiver options for support of different media, auto sensing capability, how many units can be stacked and status monitoring.
6. Research the price and features of some typical print and Ethernet LAN Servers. Consider features such as the number of ports, memory size and protocols supported.
7. Research the characteristics of some commercially available multimode optical fibres, connectors, transmitters and receivers for LAN use. Assume LAN data rates are 10 and 100 Mbps and transmission distance could range upto 500m.
8. Examine the trade literature to find recent applications of 10-Gigabit Ethernet. Were these applications for local, metropolitan or wide area networks? What was the purpose of these implementations? Who was using these systems? Why was 10-Gigabit Ethernet chosen versus another technology?
9. Research the characteristics and functions of at least two Bluetooth P.C. adapter cards that are commercially available. Consider parameters such as support of the operating system, device interfaces, size and power consumption.
10. Research what Internet Service providers are available in your area. Describe some of the features that an ISP might provide. For example, consider questions such as: What connection options do they offer? What is the highest connection rate that is available? What equipment do you need to access the Internet at these speeds?
11. Describe the capabilities of at least two commercially available LAN protocol analysers. Consider parameters such as data rates that it supports, what protocols it support, error detection features and recording options.
12. Compare the LAN-monitoring capabilities of HP Open View, CISCO LAN Management Solution, Novell Manage Wise. Consider factors such as support of RMON, device-discovery capabilities, report generation and fault tolerance capabilities.
1. Using the web resources or the literature compare the advantages and limitations of at least three biometric devices for authentication purpose. For example, the technologies might be based on fingerprints, palm prints, retinal patterns or voice recognition.

Project No.14 – Group of 3 Students can do.

(Ref for 4 to 14: Local Area Networks by Gerd Keiser).

PART TWO – A: TRANSPARENCY (OR PPT) BASED PRESENTATION(15 hour)

1.1 Preparation
   1.1.1 Audience Analysis
   1.1.2 Information Gathering
   1.1.3 Transparency Design using Power Point
   1.1.4 Producing the Transparency for O.H.P./P.P.T.

Sample Projects:

1. Prepare and deliver a brief transparency based presentation using one of the topics.
   a) Technicians are properly appreciated in society.
   b) Engineers do not know enough about non-technical topics.
   c) Laypeople do not know enough about technical topics.
   d) India's products are not competitive in International Market because its quality is not good.
   e) India's Software Professionals are paid too much.
2. Prepare and deliver a brief transparency – based presentation for the opposite side of the issue you in Project-1 above.
3. Prepare and deliver a brief autobiographical presentation.
4. Prepare and deliver a brief biographical presentation of a person know to you.
5. Prepare and deliver a brief sales presentation for a product (example washing machine).
6. Prepare and deliver a brief sales presentation for a service (example Insurance Policy, Maintenance of equipment) with which you are familiar.
7. Prepare and deliver a brief sales presentation that pitches your potential as an employee to a potential employer.
8. Prepare and deliver a technically accurate presentation (for a lay audience) on a technical topic of your choosing.
   One example of technical topic. Describe what an embedded system is and what its common characteristics are
9. Prepare and deliver a technical presentation (for an engineering audience) on a topic of your choosing.
   Example of topic Microcontroller based digital panel meter – include
   (a) Circuit description (b) Program description
10. From a group with five members and choose one of the topics given below. In a brief planning session, divide the topic into subtopics (already done) for a group Presentation. Prepare and deliver the presentation.
10.01.1 Select five India's top wealth creating companies and study their performance in the last five years? Can any lessons be learnt from their experience, any forecast be made?
10.01.2 Company 1
10.01.3 Company 2
10.01.4 Company 3
10.01.5 Company 4
10.01.6 Company 5
10.02 "Internet ushers in a new era in computing short and colourful history". Bill Gates predicates that with in a decade, Internet would become as mainstream as water or electricity. Study the Impact Internet could have on life and the way we do business, through the following 5 aspects:
10.02.1 Publishing and Advertising
10.02.2 Electronics Shopping
10.02.3 Entertainment
10.02.4 Education and Training
10.02.5 Social Impact
10.03 Asynchronous Transfer Mode (ATM) is claimed to be the communication technology that will allow total flexibility and efficiency need for high speed, multi-service multimedia networks. Many network experts predict that ATM will be the technology that finally enables high bandwidth time-critical applications to reach the desktop. Give a study on this, covering the following aspects:
10.03.1 What is ATM?
10.03.2 What new applications will be enabled by ATM ?
10.03.3 How does ATM differ from exiting network technologies?

10.03.4   How will application programs use A.T.M.?
10.03.5   What products that support ATM are available in the market.
10.03.6 Give brief description of five products or product sub-systems which could be Embedded systems, choosing examples from the following environment:
10.03.7   Domestic
10.03.8   Automotive
10.03.9   Medical – Electronic
10.03.10   Industry
10.03.11 Office.

5. EXAMINATION:

1. Ten students per batch of 4 Hrs duration.
2. Marks allotment
    Part One: Written Communication
      A.   Research Paper and Articles – Report   : 05Marks
      B.   Other Written Communication Activates   : 05 Marks
    Part Two: Oral Communication
      A. Transparency based Presentation   : 05 Marks
      B.   Other Oral Communication Activities   : 10 Marks
    3. Evaluation:
      3.1 For part one 'A' on the basis of the report submitted by the student.
      3.2 For part two 'A' on the basis of the 10 minutes oral presentation by the student
      3.3 For part one 'B' on the basis of log of activity file.

6. REFERENCE:

Books:

Sl. N.o	Title	Author	Publisher
1.	Life Skills and Leadership for Engineers	David.E.Goldberg	Tata McGraw - Hill
2.	Developing Communication Skills	Krishna Mohan MeeraBanerji	Macmillan India Ltd.
3.	Power Speak	Dorothy Leeds	East-West Books Pvt.Ltd.
4.	Developing Presentation Skills	Dr.R.L.Bhatia	Wheeler Publishing
5.	Steps to Writing Well	Jean Wyrick	Thomoson Learning
6.	Business Students Hand Book	Sheila Cameran	Pearson Education
7.	Information Search and Analysis Skills		NIIT
8.	A Beginner's Guide to Technical Communication	Anne Eisenberg	McGraw Hill International
9.	A Guide to Technical Communication	James Sherlock	Ally and Bacon inc., USA
10.	Technical Writing	Sharon J Gerson Steven M. Gerson	Pearson Education
11.	Basic Communication Skills for Technology	Andrea J Rutherfoord	Pearson Education
12.	How to Write for the World of Work	Thomas E Pearsall Donald H Cunningham	Prism Book Pvt.Ltd.
13.	Technical Writing and Professional Communication	Thomas N Huckin Leslie A Olsen	McGraw Hill International
14.	Business Communication	BoveeThill	Pearson Education
	Today	Schatzman	

15.	Business Communication	Mary Ellen Guffay	Thomoson
16.	Critical Thinking	Greg Bassham etc.,	McGraw Hill
17.	Advanced Business Communication	Penrose / Rasberry / Myers	Thomoson
18.	Strategies for Engineering Communication	Susan Stevenson / Steve Whitmore	Willey

Journals:
1. Business World
2. Business Today
3. Business India
4. Voice and Data
5. Data Quest
6. it Information Technology
7. Electronics for you
8. Network Magazine
9. Network Computing
10. Developer IQ
11. Developer 2.0

Television:
1. BBC – Hard Talk,24 x 7 NDTV – Big Fight

Web Sites:
1. ATM Forum   http://www.atmforum.com
2. CISCO   http://www.cisco.com
3. 3 Com   http://www.3com.com
4. Extreme Network http://www.extremenetworks.com
5. Hewlett Packard   http://www.hp.com
6. Novell   http://www.noveli.com

Technical Seminar & Library Study

Course Code:	ETP-505	Practical Exam :	25 Marks
Practical:	2 Periods per Week	Term Work :	25 Marks
Total Periods:	30 Periods per Semester	TOTAL MARKS :	50 Marks
Examination:	4 Hours		

A: RATIONALE:

The Technical Seminar will provide Motivation among the students to develop new Technology Based on Advances in Electronics & Provide Guidance for Carrier Growth. The student will enhance their skills through Group Discussion & Presentation. They are communication skills with Managerial capability will be enhanced.

B: OBJECTIVE:

After Completing the Lab. Course the students will able:

To motivation the students in developing life skills for successful career growth.

C: COURSE CONTENTS IN TERM OF SPECIFIC OBJECTIVES:

A: Split of Course Content

1. Lecturer	10 hrs

On relevant new technologies(i.e. internet)

On Technical Seminar

2. Group Discussions	10 hrs
3. Presentations(OHP/PPT) & Industrial Visit	10 hrs
Total	**30 hrs**

Guidelines:

B   1.   All the above activities shall be students centred.

2.   All the students shall be divided in to batches of 4 students or less.

3.   Students are divided into batches for the purpose of ensuring guidance and assessment   0nly

4.   All the batches shall be divided and entrusted to among the available Students.

5.   Internal faculty shall act as guides & facilitators

6.   Internal assessment shall be the responsibility of the faculty members to whom the   students are entrusted.

7.   The faculty members shall provide all the guidance needed for the students motivate them and ensure their active participation in all above activities.

8.   Lecturers shall be arranged by the students with active support of the faculty.

9.   Each batch of the students shall arrange at least one lecture, One Group Discussion and One Presentation.

10.   At least 75% of the lectures shall be from external experts/Advanced Topicd.

11.   All the students of the class shall be present during all the activities, though the initiative could be from any one of the batches.

12.   For each of the activities, a single session of two hours, there can be 1 or more lecturers or group discussions or presentation, ensuring the beneficial limits. The student are utilise the English Communication

laboratory for Lectures and Group Discussion & collect information from Digital Librry.

13. Each students shall prepare a report independently on each of the lecture / Group Discussion sessions or presentation, ensuring the beneficial limits.

14. All the presentations by the students shall be computer aided using Power Point.

15. Each of the students shall submit a copy of the presentations made by him/her to his/her guide.

16. Every students shall maintain a file of the valued reports on lecture and group discussions along with copies of the presentations made by his group. Their day today activities will be recorded as annexure.

17. During group discussions and presentations, involvement of every student in the batch shall be ensured, by allocating a part of the group discussion and presentation to each of the students in the batch.

18. External experts shall be involved during group discussions & Presentations also to the extent possible.

19. When any of these sessions are in progress all the faculty members shall be present unless there is clash of theory & practical of other semesters for them. For this purpose, if need be the tables may be re-arranged.

20. However the guide for the batch of students who have taken the initiative of any or the activates shall be present during the session with out fail.

21. The guide for the each batch each of the batches shall observe his students with respect to all the parameters identified for marking marks for each of his students.

22. The student will visit Industry for up gradation their knowledge & prepare a report which will be evaluated by the external examiner at the time of Examination.

23. Library Periods are assigned to each group & hours utilised in the computers in the library(Digital) are maintained in the record.

C   For ASSESMENT of marks the following will be taken care

Lectures: 8Marks

Initiative
    Organisational skills
    Report
Group discussions: 7Marks
    Initiative
    Debating skills
    Report
Presentation: 10Marks

    Initiative Presentation
    Communication skills
    Report on Industrial Visit/Library

                                         TOTAL   25 Marks