

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY ANANTAPUR

B.Tech III-II Sem. (E.E.E)

(9AHS701) MANAGEMENT SCIENCE

(Common to ECM, EEE)

UNIT I

INTRODUCTION TO MANAGEMENT:

Concepts of Management and organization- nature, importance and Functions of Management, Taylor's Scientific Management Theory, Fayol's Principles of Management, Mayo's Hawthorne Experiments, Maslow's Theory of Human Needs, Douglas McGregor's Theory X and Theory Y, Herzberg's Two-Factor Theory of Motivation, Systems Approach to Management, Leadership Styles, Social responsibilities of Management.

UNIT II

DESIGNING ORGANIZATIONAL STRUCTURES:

Basic concepts related to Organisation - Departmentation and Decentralisation, Types of mechanistic and organic structures of organisation (Line organization, Line and staff organization, functional organization, Committee organization, matrix organization, Virtual Organisation, Cellular Organisation, team structure, boundaryless organization, inverted pyramid structure, lean and flat organization structure) and their merits, demerits and suitability.

UNIT III

OPERATIONS MANAGEMENT:

Principles and Types of Plant Layout-Methods of production (Job, batch and Mass Production), Work Study -Basic procedure involved in Method Study and Work Measurement- Statistical Quality Control: chart, R chart, \bar{c} chart, p chart, (simple Problems), Acceptance Sampling, Deming's contribution to quality.

UNIT IV

MATERIALS MANAGEMENT:

Objectives, Need for Inventory control, EOQ, ABC Analysis, Purchase Procedure, Stores Management and Stores Records.

Marketing: Functions of Marketing, Marketing Mix, Marketing Strategies based on Product Life Cycle, Channels of distribution

UNIT V

HUMAN RESOURCES MANAGEMENT (HRM):

Concepts of HRM, HRD and Personnel Management and Industrial Relations (PMIR), HRM vs.PMIR, Basic functions of HR Manager: Manpower planning, Recruitment, Selection, Training and Development, Placement, Wage and Salary Administration, Promotion, Transfer, Separation, Performance Appraisal, Grievance Handling and Welfare Administration, Job Evaluation and Merit Rating.

UNIT VI

PROJECT MANAGEMENT (PERT/CPM):

Network Analysis, Programme Evaluation and Review Technique (PERT), Critical Path Method (CPM), Identifying critical path, Probability of Completing the project within given time, Project Cost Analysis, Project Crashing. (simple problems)

UNIT VII

STRATEGIC MANAGEMENT:

Mission, Goals, Objectives, Policy, Strategy, Programmes, Elements of Corporate Planning Process, Environmental Scanning, Value Chain Analysis, SWOT Analysis, Steps in Strategy Formulation and Implementation, Generic Strategy alternatives.

UNIT VIII

CONTEMPORARY MANAGEMENT PRACTICES:

Basic concepts of MIS, End User Computing, Materials Requirement Planning (MRP), Just-In-Time (JIT) System, Total Quality Management (TQM), Six sigma and Capability Maturity Model (CMM) Levels, Supply Chain Management, Enterprise Resource Planning (ERP), Performance Management, Business Process outsourcing (BPO), Business Process Re-engineering and Bench Marking, Balanced Score Card.

TEXT BOOKS:

1. Aryasri: Management Science, TMH, 2004.
2. Stoner, Freeman, Gilbert, Management, 6th Ed, Pearson Education, New Delhi, 2004.

REFERENCES:

1. Kotler Philip & Keller Kevin Lane: Marketing Mangement 12/e, PHI, 2005.
2. Koontz & Weihrich: Essentials of Management, 6/e, TMH, 2005.
3. Thomas N.Duening & John M.Ivancevich Management—Principles and Guidelines, Biztantra, 2003.
4. Kanishka Bedi, Production and Operations Management, Oxford University Press, 2004.
5. Memoria & S.V.Gauker, Personnel Management, Himalaya, 25/e, 2005
6. Samuel C.Certo: Modern Management, 9/e, PHI, 2005
7. Schermerhorn, Capling, Poole & Wiesner: Management, Wiley, 2002.
8. Parnell: Strategic Management, Biztantra, 2003.
9. Lawrence R Jauch, R.Gupta & William F.Glueck: Business Policy and Strategic Management, Frank Bros., 2005.
10. L.S.Srinath: PERT/CPM, Affiliated East-West Press, 2005.

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY ANANTAPUR

B.Tech III-II Sem. (E.E.E)

(9A02601) POWER SEMICONDUCTOR DRIVES

Objective:

This course is an extension of Power Electronics applications to AC and DC drives. Control of DC motor drives with single phase and three phase converters and choppers are given in detail. The control of AC motor drives with variable frequency converters and variable voltage are presented.

UNIT – I CONTROL OF DC MOTORS BY SINGLE PHASE CONVERTERS

Introduction to Thyristor controlled Drives, Single Phase semi and Fully controlled converters connected to d.c separately excited and d.c series motors – continuous current operation – output voltage and current waveforms – Speed and Torque expressions – Speed – Torque Characteristics- Problems on Converter fed d.c motors.

UNIT-II CONTROL OF DC MOTORS BY THREE PHASE CONVERTERS

Three phase semi and fully controlled converters connected to d.c separately excited and d.c series motors – output voltage and current waveforms – Speed and Torque expressions – Speed – Torque characteristics – Problems.

UNIT – III FOUR QUADRANT OPERATION OF DC DRIVES

Introduction to Four quadrant operation – Motoring operations, Electric Braking – Plugging, Dynamic and Regenerative Braking operations. Four quadrant operation of D.C motors by dual converters – Closed loop operation of DC motor (Block Diagram Only)

UNIT-IV CONTROL OF DC MOTORS BY CHOPPERS

Single quadrant, Two –quadrant and four quadrant chopper fed dc separately excited and series excited motors – Continuous current operation – Output voltage and current wave forms – Speed torque expressions – speed torque characteristics – Problems on Chopper fed d.c Motors – Closed Loop operation (Block Diagram Only)

UNIT – V CONTROL OF INDUCTION MOTOR THROUGH STATOR VOLTAGE

Variable voltage characteristics-Control of Induction Motor by Ac Voltage Controllers – Waveforms – speed torque characteristics.

UNIT – VI CONTROL OF INDUCTION MOTOR THROUGH STATOR FREQUENCY

Variable frequency characteristics-Variable frequency control of induction motor by Voltage source and current source inverter and cyclo converters- PWM control – Comparison of VSI and CSI operations – Speed torque characteristics – numerical problems on induction motor drives – Closed loop operation of induction motor drives (Block Diagram Only)

UNIT –VII CONTROL OF INDUCTION MOTOR FROM ROTOR SIDE

Static rotor resistance control – Slip power recovery – Static Scherbius drive – Static Kramer Drive – their performance and speed torque characteristics – advantages - applications – problems

UNIT – VIII CONTROL OF SYNCHRONOUS MOTORS

Separate control & self control of synchronous motors – Operation of self controlled synchronous motors by VSI and CSI cycloconverters. Load commutated CSI fed Synchronous Motor – Operation – Waveforms – speed torque characteristics – Applications – Advantages and Numerical Problems – Closed Loop control operation of synchronous motor drives (Block Diagram Only).

TEXT BOOKS:

1. Fundamentals of Electric Drives – by G K Dubey Narosa Publications
2. Power Electronic Circuits, Devices and applications by M.H.Rashid, PHI.

REFERENCE BOOKS:

1. Power Electronics – MD Singh and K B Khanchandani, Tata McGraw-Hill Publishing Company, 1998
2. Modern Power Electronics and AC Drives by B.K.Bose, PHI.
3. Thyristor Control of Electric drives – Vedam Subramanyam, Tata McGraw Hill Publications.
4. Analysis of Thyristor Power – conditioned motors, S K Pillai, Universities press, 1st Edition. .

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY ANANTAPUR

B.Tech III-II Sem. (E.E.E)

(9A02602) POWER SYSTEM ANALYSIS

Objective :

This course introduces formation of Y bus and Z bus of a Power System, power flow studies by various methods. It also deals with short circuit analysis and analysis of power system for steady state and transient stability.

UNIT -I POWER SYSTEM NETWORK MATRICES-I

Representation of Power system elements, Essential characteristics of a good Algorithm, Steps involved in solving a problem using Digital computer - Graph Theory: Definitions, Bus Incidence Matrix, Y_{bus} formation by Direct and Singular Transformation Methods, Numerical Problems.

UNIT -II POWER SYSTEM NETWORK MATRICES-II

Formation of Z_{Bus} : Partial network, Algorithm for the Modification of Z_{Bus} Matrix for addition element for the following cases: Addition of element from a new bus to reference, Addition of

element from a new bus to an old bus, Addition of element between an old bus to reference and Addition of element between two old busses (Derivations and Numerical Problems).- Modification of Z_{Bus} for the changes in network (Problems)

UNIT –III POWER FLOW STUDIES-I

Necessity of Power Flow Studies – Data for Power Flow Studies – Derivation of Static load flow equations – Load flow solutions using Gauss Seidel Method: Acceleration Factor, Load flow solution with and without P-V buses, Algorithm and Flowchart. Numerical Load flow Solution for Simple Power Systems (Max. 3-Buses): Determination of Bus Voltages, Injected Active and Reactive Powers (Sample One Iteration only) and finding Line Flows/Losses for the given Bus Voltages.

UNIT – IV POWER FLOW STUDIES-II

Newton Raphson Method in Rectangular and Polar Co-Ordinates Form: Load Flow Solution with or without PV Busses- Derivation of Jacobian Elements, Algorithm and Flowchart. Decoupled and Fast Decoupled Methods.- Comparison of Different Methods – DC load Flow

UNIT – V SHORT CIRCUIT ANALYSIS-I

Per-Unit System of Representation. Per-Unit equivalent reactance network of a three phase Power System, Numerical Problems. Symmetrical fault Analysis: Short Circuit Current and MVA Calculations, Fault levels, Application of Series Reactors, Numerical Problems.

UNIT –VI SHORT CIRCUIT ANALYSIS-II

Symmetrical Component Theory: Symmetrical Component Transformation, Positive, Negative and Zero sequence components: Voltages, Currents and Impedances. Sequence Networks: Positive, Negative and Zero sequence Networks, Numerical Problems. Unsymmetrical Fault Analysis: LG, LL, LLG faults with and without fault impedance, Numerical Problems.

UNIT –VII POWER SYSTEM STEADY STATE STABILITY ANALYSIS

Elementary concepts of Steady State, Dynamic and Transient Stabilities. Description of: Steady State Stability Power Limit, Transfer Reactance, Synchronizing Power Coefficient, Power Angle Curve and Determination of Steady State Stability and Methods to improve steady state stability.

UNIT –VIII POWER SYSTEM TRANSIENT STATE STABILITY ANALYSIS

Derivation of Swing Equation. Determination of Transient Stability by Equal Area Criterion, Application of Equal Area Criterion, Critical Clearing Angle Calculation. Solution of Swing equation by 4th order Runge – Kutta Method (up to 2 iterations) - Methods to improve Stability - Application of Auto Reclosing and Fast Operating Circuit Breakers.

TEXT BOOKS:

1. Computer Methods in Power Systems, Stagg El – Abiad & Stags, Mc Graw-hill Edition.
2. Modern Power system Analysis – by I.J.Nagrath & D.P.Kothari: Tata McGraw-Hill Publishing Company, 2nd edition.
3. Power System Analysis by Nagsarkar and Sukhija, OXFORD University Press.

REFERENCE BOOKS:

1. Power System Analysis by Grainger and Stevenson, Tata McGraw Hill.
2. Computer Techniques in Power System Analysis by M A Pai, Second Edition, TMH.
3. Power System Analysis and Design by B.R.Gupta, S. Chand & Co, 6th Revised Edition, 2010.
4. Computer Modeling of Electrical Power Systems by J. Arrillaga and N. R. Watson, John Wiley Student Edition, 2/e.
5. Computer Techniques and Models in Power Systems by K. Uma Rao, I. K. International.
6. Electric Power Systems by S. A. Nasar, Schaum's Outline Series, Revised 1st Edition, TMH.
7. Power System Analysis by Glover and Sarma, Thomson Publishers.

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY ANANTAPUR

B.Tech III-II Sem. (E.E.E)

(9A04602) MICROPROCESSORS AND MICROCONTROLLERS (Common to CSE, ECE, E Con E, EIE, EEE)

UNIT-I

INTRODUCTION

Architecture of 8086 microprocessor, special functions of general purpose registers. 8086 flag register and function of 8086 flags, addressing modes of 8086, instruction set of 8086, assembler directives, simple programs, procedures and macros.

UNIT-II

ASSEMBLY LANGUAGE PROGRAMMING

Assembly language programs involving logical, branch and call instructions, sorting, evaluation of arithmetic expressions, string manipulation.

UNIT-III

ARCHITECTURE OF 8086 & INTERFACING

Pin diagram of 8086-Minimum mode and maximum mode of operation, Timing diagram, memory interfacing to 8086 (static RAM and EPROM). Need for DMA. DMA data transfer method. Interfacing with 8237/8257.

UNIT-IV

PROGRAMMABLE INTERFACING DEVICES

8255 PPI-various modes of operation and interfacing to 8086, interfacing keyboard and display controller- 8279, stepper motor and actuators. D/A and A/D converter interfacing, Interrupt structure of 8086, Vector interrupt table. Interrupt service routines. Introduction to DOS and BIOS interrupts. 8259 PIC architecture and interfacing cascading of interrupt controller and its importance.

UNIT-V

SERIAL DATA TRANSFER SCHEMES

Asynchronous and synchronous data transfer schemes. 8251 USART architecture and interfacing. TTL to RS232C and RS232C to TTL conversion. Sample program of serial data transfer. Introduction to high-speed serial communications standards, USB.

UNIT-VI

PROGRAMMABLE INTERRUPT CONTROLLERS

PIC 8259, Programming with 8259, Programmable interval timer 8253, Modes of 8253, Programming examples with 8253.

UNIT-VII

8051 MICROCONTROLLER AND ITS PROGRAMMING

Architecture of micro controller-8051 Microcontroller-internal and external memories-counters and timers-synchronous serial-cum asynchronous serial communication-interrupts. Addressing modes of 8051, Instruction set of 8051, Assembly Language Programming examples using 8051.

UNIT-VIII

ADVANCED MICROCONTROLLERS

MCS – 96 Microcontrollers: Important Features, Pin Diagram, Internal Architecture, Memory Map, Addressing Modes, Instruction set. ARM Microcontrollers: ARM Core Architecture, Versions of ARM, Important Features.

TEXT BOOKS:

1. Advanced microprocessor and peripherals-A.K. Ray and K.M.Bhurchandi, 2nd edition, TMH, 2000.
2. Microcontrollers-Deshmukh, Tata Mc-Graw Hill Edition, 2004.
3. Microcontrollers Architecture, programming, interfacing and system Design-Raj kamal, Pearson Education, 2005.

REFERENCES:

1. Microprocessors Interfacing-Douglas V.Hall, 2nd edition, 2007.
2. The 8088 and 8086 Microprocessors- Walter A. Triebel, Avtar Singh, PHI, 4th Edition, 2003.
3. Micro computer system 8066/8088 family Architecture, programming and Design-By Liu and GA Gibson, PHI, 2nd Ed.
4. 8051 Microcontroller-Internals, Instructions, Programming and Interfacing by Subrata Ghoshal, Pearson, 2010.

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY ANANTAPUR

B.Tech III-II Sem. (E.E.E)

(9A02603) POWER SYSTEM OPERATION AND CONTROL

Objective :

This subject deals with Economic operation of Power Systems, Hydrothermal schedulings and modeling of turbines, generators and automatic controllers. It emphasizes on single area and two area load frequency control and reactive power control.

UNIT – I ECONOMIC OPERATION OF POWER SYSTEMS-I

Optimal operation of Generators in Thermal Power Stations, - heat rate Curve – Cost Curve – Incremental fuel and Production costs, input-output characteristics, Optimum generation allocation with line losses neglected.

UNIT – II ECONOMIC OPERATION OF POWER SYSTEMS-II

Optimum generation allocation including the effect of transmission line losses – Loss Coefficients, General transmission line loss formula.

UNIT – III HYDROTHERMAL SCHEDULING

Optimal scheduling of Hydrothermal System: Hydroelectric power plant models, Scheduling problems-Short term Hydrothermal scheduling problem.

UNIT –IV MODELING OF TURBINE, GOVERNOR

Modelling of Turbine: First order Turbine model, Block Diagram representation of Steam Turbines and Approximate Linear Models. Modelling of Governor: Mathematical Modelling of Speed Governing System – Derivation of small signal transfer function – Block Diagram.

UNIT – V LOAD FREQUENCY CONTROL - I

Necessity of keeping frequency constant.

Definitions of Control area – Single area control – Block diagram representation of an isolated power system – Steady state analysis – Dynamic response – Uncontrolled case. Load frequency control of 2-area system – uncontrolled case and controlled case, tie-line bias control

UNIT-VI LOAD FREQUENCY CONTROL - II

Proportional plus Integral control of single area and its block diagram representation, steady state response – Load Frequency Control and Economic dispatch control.

UNIT – VII REACTIVE POWER CONTROL

Overview of Reactive Power control – Reactive Power compensation in transmission systems – advantages and disadvantages of different types of compensating equipment for transmission systems; load compensation – Specifications of load compensator, Uncompensated and compensated transmission lines: shunt and Series Compensation.

UNIT – VIII POWER SYSTEM RESTRUCTURING [4]

Introduction – Need for Regulation – Motivation for Power System Restructuring – Key issues in Deregulation.

TEXT BOOKS:

1. Power System Analysis Operation and Control – A. Chakravarthi and S. Halder, 3rd Edition, PHI.
2. Modern Power System Analysis – by I.J.Nagrath & D.P.Kothari Tata M Graw – Hill Publishing Company Ltd, 2nd edition.
3. Electric Energy Systems by O I Elgerd, Mc Graw-hill Edition.
4. Electric Power Generation, Transmission and Distribution by S. N. Singh, 2nd Edition, PHI.
5. An Introduction to: Reactive Power Control and Voltage Stability in Power Transmission Systems by Abhijit Chakrabarti, D. P. Kothari, A. K. Mukhopadhyay and Abhinandan De, Eastern Economy Edition, 2010.

REFERENCE BOOKS:

1. Power System Analysis and Design by J.Duncan Glover and M.S.Sarma., THOMPSON, 3rd Edition.
2. Electric Power Systems by S. A. Nasar, Schaum's Outline Series, Revised 1st Edition, TMH.

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY ANANTAPUR**B.Tech III-II Sem. (E.E.E)****(9A10504) LINEAR & DIGITAL IC APPLICATIONS****UNIT I****INTEGRATED CIRCUITS:**

Classification, chip size and circuit complexity, basic information of Opamp, ideal and practical Op-amp, internal circuits, Op-amp characteristics, DC and AC characteristics, 741 op-amp and its features, modes of operation-inverting, non-inverting, differential.

UNIT II**OP-AMP APPLICATIONS:**

Basic application of Op-amp, instrumentation amplifier, ac amplifier, V to I and I to V converters, sample & hold circuits, multipliers and dividers, Differentiators and Integrators, Comparators, Schmitt trigger, Multivibrators, introduction to voltage regulators, features of 723.

UNIT III**ACTIVE FILTERS & OSCILLATORS:**

Introduction, 1st order LPF, HPF filters. Band pass, Band reject and all pass filters. Oscillator types and principle of operation – RC, Wien and quadrature type, waveform generators – triangular, sawtooth, square wave and VCO.

UNIT IV**TIMERS & PHASE LOCKED LOOPS:**

Introduction to 555 timer, functional diagram, monostable and astable operations and applications, Schmitt Trigger. PLL - introduction, block schematic, principles and description of individual blocks of 565.

UNIT V**D-A AND A- D CONVERTERS:**

Introduction, basic DAC techniques, weighted resistor DAC, R-2R ladder DAC, inverted R-2R DAC, and IC 1408 DAC, Different types of ADCs - parallel comparator type ADC, counter type ADC, successive approximation ADC and dual slope ADC, DAC and ADC specifications.

UNIT VI

Classification of Integrated circuits, comparison of various logic families, standard TTL NAND Gate-Analysis& characteristics, TTL open collector O/Ps, Tristate TTL, MOS & CMOS open drain and tristate outputs, CMOS transmission gate, IC interfacing- TTL driving CMOS & CMOS driving TTL.

UNIT VII

Design using TTL-74XX & CMOS 40XX series, code converters, decoders, Demultiplexers, decoders & drives for LED & LCD display. Encoder, priority Encoder, multiplexers & their applications, priority generators/checker circuits. Digital arithmetic circuits-parallel binary adder/subtractor circuits using 2's, Complement system. Digital comparator circuits.

UNIT VIII

SEQUENTIAL CIRCUITS:

Flip-flops & their conversions. Design of synchronous counters, Decade counter, shift registers & applications, familiarities with commonly available 74XX & CMOS 40XX series of IC counters.

MEMORIES: ROM architecture, types & applications, RAM architecture, Static & Dynamic RAMs, synchronous DRAMs.

TEXT BOOKS:

1. Linear Integrated Circuits –D. Roy Chowdhury, New Age International (p) Ltd, 2nd Ed., 2003.
2. Op-Amps & Linear ICs – Ramakanth A. Gayakwad, PHI, 1987.

REFERENCES:

1. Operational Amplifiers & Linear Integrated Circuits – R.F. Coughlin & Fredrick F. Driscoll, PHI, 1977.
2. Operational Amplifiers & Linear Integrated Circuits: Theory & Applications –Denton J. Daibey, TMH.
3. Design with Operational Amplifiers&Analog Integrated Circuits-Sergio Franco, McGraw Hill, 3rd Ed., 2002.
4. Digital Fundamentals – Floyd and Jain, Pearson Education, 8th Edition, 2005.

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY ANANTAPUR

B.Tech III-II Sem. (E.E.E)

(9AHS601) ADVANCED ENGLISH COMMUNICATION SKILLS LAB (Common to ECE, E Con E, ECM, EIE, EEE, ME, AE)

1. Introduction

The Advanced English Language Skills Lab introduced at the 3rd year B.Tech level is considered essential for the student for focusing on his/her career. At this stage it is imperative for the student to start preparing for the ever growing competition in the job market. In this scenario, in order to be on par with the best, he/she needs to improve his/her Communication and soft skills

This course focuses on the practical aspects of English incorporating all the four (LRSW) skills relevant to the requirements of the prospective employers in view of globalization. The proposed course will enable the students to perform the following:

- Intensive reading to improve comprehension and communication
- Attentive listening for better understanding
- Write project/research/technical reports
- Write Resume' to attract attention
- Discuss ideas / opinions for better solutions
- Face interviews confidently
- Gather information, organize ideas, and present them effectively before an audience
- To help the students cultivate the habit of reading passages from the computer monitor, thus providing them with the required ability to face computer-based competitive exams such GRE, TOEFL,CAT, GMAT etc.

2. Objectives:

Keeping in mind the previous exposure of the student to English, this lab focuses on improving the student's proficiency in English at all levels. The lab intends to train students to use language effectively, to participate in group discussions, to help them face interviews, and sharpen public speaking skills and enhance the confidence of the student by exposing him/her to various situations and contexts which he/she would face in his/her career

3. Syllabus

The following course content is prescribed for the Advanced Communication Skills Lab:

Reading Comprehension -- Reading for facts, guessing meanings from context, speed reading, scanning, skimming for building vocabulary(synonyms and antonyms, one word substitutes, prefixes and suffixes, idioms and phrases.)

Listening Comprehension-- Listening for understanding, so as to respond relevantly and appropriately to people of different backgrounds and dialects in various personal and professional situations.

Technical Report Writing—Types of formats and styles, subject matter, organization, clarity, coherence and style, data-collection, tools, analysis

Resume' Writing—Structure, format and style, planning, defining the career objective, projecting one's strengths, and skills, creative self marketing, cover letter

Group Discussion-- Communicating views and opinions, discussing, intervening. providing solutions on any given topic across a cross-section of individuals,(keeping an eye on modulation of voice, clarity, body language, relevance, fluency and coherence) in personal and professional lives.

Interview Skills—Concept and process, pre-interview planning, mannerisms, body language, organizing, answering strategies, interview through tele and video-conferencing

Technical Presentations (Oral)— Collection of data, planning, preparation, type, style and format ,use of props, attracting audience, voice modulation, clarity, body language, asking queries.

4. Minimum Requirements

The English Language Lab shall have two parts:

The Computer aided Language Lab for 60 students with 60 systems, one master console, LAN facility and English language software for self-study by learners.

The Communication Skills Lab with movable chairs and audio-visual aids with a P.A System, a TV, A digital stereo-audio and video system, Camcorder etc

System Requirement (Hardware Component):

Computer network with LAN with a minimum of 60 multimedia systems with the following specifications:

P-IV Processor, Speed-2.8 GHz, RAM_512 MB minimum, Hard Disk-80 GB, Headphones

Prescribed Software: GLOBARENA

Books Suggested for English Language Lab Library (to be located within the lab in addition to the CDs of the text book which are loaded on the systems):

1. **Technical writing and professional communication, Huckin and Olsen** Tata Mc Graw-Hil 2009.

2. **Speaking about Science**, A Manual for Creating Clear Presentations by **Scott Morgan and Barrett Whitener**, Cambridge University press, 2006
3. **Books on TOEFL/GRE/GMAT/CAT/ IELTS** by **Barron's/DELTA/Cambridge University Press**.
4. **Handbook for Technical Writing** by David A McMurrey & Joanne Buckely CENGAGE Learning 2008
5. **Technical Communication** by Meenakshi Raman & Sangeeta Sharma, Oxford University Press 2009.
6. **The ACE of Soft Skills** by Gopal Ramesh and Mahadevan Ramesh, Pearson Education, 2010
7. **Cambridge English for Job-Hunting** by Colm Downes, Cambridge University Press, 2008
8. **Resume's and Interviews** by M.Ashraf Rizvi, Tata Mc Graw-Hill, 2008
9. **From Campus To Corporate** by KK Ramachandran and KK Karthick, Macmillan Publishers India Ltd, 2010
10. **English Language Communication : A Reader cum Lab Manual** Dr A Ramakrishna Rao, Dr G Natanam & Prof SA Sankaranarayanan, Anuradha Publications, Chennai 2008.
11. **Managing Soft Skills** by K R Lakshminarayan and T.Muruguvel, Sci-Tech Publications, 2010
12. **Business Communication** by John X Wang, CRC Press, Special Indian Edition,2008

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY ANANTAPUR

B.Tech III-II Sem. (E.E.E)

(9A02604) ELECTRICAL MEASUREMENTS LAB

The following experiments are required to be conducted as compulsory experiments:

1. Calibration and Testing of single phase energy Meter
2. Calibration of dynamometer power factor meter
3. Crompton D.C. Potentiometer – Calibration of PMMC ammeter and PMMC voltmeter
4. Kelvin's double Bridge – Measurement of resistance – Determination of Tolerance.
5. Measurement of % ratio error and phase angle of given C.T. by comparison.
6. Schering bridge & Anderson bridge.
7. Measurement of 3 phase reactive power with single-phase wattmeter.
8. Measurement of parameters of a choke coil using 3 voltmeter and 3 ammeter methods.

In addition to the above eight experiments, atleast any two of the experiments from the following list are required to be conducted:

9. Optical bench – Determination of polar curve measurement of MHCP of filament lamps
10. Calibration LPF wattmeter – by Phantom testing
11. Measurement of 3 phase power with Two watt meter method (Balanced & Un balanced).
12. Dielectric oil testing using H.T. testing Kit
13. LVDT and capacitance pickup – characteristics and Calibration
14. Resistance strain gauge – strain measurements and Calibration
15. Transformer turns ratio measurement using a.c. bridge.
16. A.C. Potentiometer – Calibration of AC Voltmeter, Parameters of Choke.