VELTECH MULTI TECH

Dr RANGARAJAN Dr. SAKUNTHALA ENGINEERING COLLEGE

(Owned by Vel Trust 1997)

(An ISO 9001: 2008 Certified Institution)

Accredited By NAAC with 'A' Grade and NBA Accredited Institution

(Approved by AICTE New Delhi and Govt. of Tamil Nadu, Affiliated to Anna University Chennai)

SYLLABUS

WEEKLY SCHEDULE

VII SEMESTER 2017-18

DEPARTMENT OF EEE

IV YEAR DEGREE COURSE

#42, Avadi – Vel Tech Road,
Avadi
Chennai – 600062
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VISION OF THE INSTITUTE

Elevating well being of humanity by augmenting human resource potential through quality technical education and training.

MISSION OF THE INSTITUTE

- To effectuate supremacy in technical education through articulation of research and industry practices for social relevance.
- To inculcate the habit of lifelong learning.
- To exhibit professional ethics, commitment and leadership qualities

VISION OF THE DEPARTMENT

To emerge as a centre of academic excellence in Electrical and Electronics Engineering and related fields through knowledge acquisition and propagation meeting global practices

MISSION OF THE DEPARTMENT

• To nurture the talent and to facilitate the students with research ambience in Electrical and Electronics Engineering

•To propagate lifelong learning

• To impart the right proportion of knowledge, attitudes and ethics in students, to enable them take up positions of responsibility in the society and make significant contributions

PROGRAM EDUCATIONAL OBJECTIVES (PEOs)

- To prepare graduates to have successful and flourishing career in the electrical and electronics industry.
- To make students able to excel in their career with ethical values and managerial skills to solve real life technical problems.
- To make students capable of solving problems in electrical and electronics engineering which are found in utilities and industries
- To help students to engage in quest for self-learning and life-long learning.

PROGRAM OUTCOMES OF EEE

PO1: Engineering knowledge: Enables to apply the knowledge of differential equations, integrals, matrix theory, Laplace, Fourier and z-transformation for engineering problems.

PO2: Problem analysis: Enables to define Basic science, Circuit theory, Electromagnetic Field theory, Control theory and to apply them to analyze complex engineering problems.

PO3: Design/development of solutions: Enables to configure and apply solutions to transmission and distribution networks, electrical apparatus and to handle the engineering aspects of Electrical Energy Generation and Utilization.

PO4: Use research-based knowledge: Enable to analysis, synthesis and interpretate the data to provide valid conclusions.

PO5: Modern tool usage: Enables to design, implement and evaluate computer-based system/tools to meet the desired needs.

PO6: The engineer and society: Enables to apply the knowledge gained to assess societal, health, legal and cultural issues, and consequent responsibilities relevant to the professional engineering practice.

PO7: Environment and sustainability: Enables to understand the impact of the Electrical engineering solutions in societal and environmental contexts and demonstrates the knowledge of and need for sustainable development.

PO8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO9: Individual and team work: Enables to function effectively on teams to full-fill the goals.

PO10: Communication: Enables to express the dynamic solutions to fit-into the engineer community.

PO11: Project management and finance: Demonstrate knowledge and understanding of engineering and management principles, and apply these to one's own work, as a member or a leader in a team.

PO12: Life-long learning: Enables to recognize the need for, and have the preparation to engage in continuing professional development.

WEEK DETAILS

SL.NO.	WEEK	FROM	TO
1	**WEEK1**	**24.06.17**	**-**
2	**WEEK2**	**26.07.17**	**01.07.17**
3	**WEEK3**	**03.07.17**	**08.07.17**
4	**WEEK4**	**10.07.17**	**15.07.17**
5	**WEEK5**	**17.07.17**	**22.07.17**
6	**WEEK6**	**24.07.17**	**29.07.17**
7	**WEEK7**	**31.07.17**	**05.08.17**
8	**WEEK8**	**07.08.17**	**12.08.17**
9	**WEEK9**	**14.08.17**	**19.08.17**
10	**WEEK10**	**21.08.17**	**26.08.17**
11	**WEEK11**	**28.08.17**	**02.09.17**
12	**WEEK12**	**04.09.17**	**09.09.17**
13	**WEEK13**	**11.09.17**	**16.09.17**
14	**WEEK14**	**18.09.17**	**23.09.17**
15	**WEEK15**	**25.09.17**	**30.09.17**
16	**WEEK16**	**02.10.17**	**07.10.17**
17	**WEEK17**	**09.10.17**	**13.10.17**

SUBJECT CONTENTS

SL.NO	SUBJECT CODE	SUBJECT NAME
THEORY		
1	EE6701	High Voltage Engineering
2	EE6702	Protection & Switchgear
3	EE6703	Special Electrical Machines
4	MG6851	Principles of Management
5	EE6007	Micro Electro Mechanical Systems
6	EE6004	Flexible AC Transmission Systems
PRACTICAL		
7	EE6711	Power System Simulation Laboratory
8	EE6712	Comprehension

TEST / EXAM SCHEDULE

SL.NO	SUBJECT CODE	SUBJECT NAME	UNIT TEST I	UNIT TEST II	PRE MODEL EXAM	UNIT TEST IV
1	EE6701	High Voltage Engineering	10.07.2017 (FN)	27.07.2017 (FN)	16.08.2017	07.09.17 (FN)
2	EE6702	Protection & Switchgear	10.07.2017 (AN)	27.07.2017 (AN)	17.08.2017	07.09.17 (AN)
3	EE6703	Special Electrical Machines	11.07.2017 (FN)	28.07.2017 (FN)	18.08.2017	08.09.17 (FN)
4	MG6851	Principles of Management	11.07.2017 (AN)	28.07.2017 (AN)	19.08.2017	08.09.17 (AN)
5	EE6007	Micro Electro Mechanical Systems	12.07.2017 (FN)	29.07.2017 (FN)	21.08.2017	09.09.17 (FN)
6	EE6004	Flexible AC Transmission Systems	12.07.2017 (FN)	29.07.2017 (FN)	22.08.2017	09.09.17 (AN)

SL.NO	SUBJECT CODE	SUBJECT NAME	MODEL EXAM
1	EE6701	High Voltage Engineering	28.09.2017
2	EE6702	Protection & Switchgear	04.10.2017
3	EE6703	Special Electrical Machines	06.10.2017
4	MG6851	Principles of Management	09.10.2017
5	EE6007	Micro Electro Mechanical Systems	11.10.2017
6	EE6004	Flexible AC Transmission Systems	13.10.2017

SL.NO	SUBJECT CODE	SUBJECT NAME	MODEL LAB
1	EE6711	Power System Simulation Laboratory	25.09.2017
2	EE6712	Comprehension	26.09.2017

EE6701 HIGH VOLTAGE ENGINEERING

WEEK 1:

Introduction

WEEK 2: UNIT I OVER VOLTAGES IN ELECTRICAL POWER SYSTEMS

Causes of over voltages and its effects on power system, lightning, switching surges, Temporary over-voltages

WEEK 3: Corona and its effects – Reflection and Refraction of Travelling waves Protection against over voltages

WEEK 4: UNIT TEST-I,

UNIT II: DIELECTRIC BREAKDOWN

Gaseous breakdown in uniform and non-uniform fields – Corona discharges – Vacuum breakdown

WEEK 5: Conduction and breakdown in pure and commercial liquids, Maintenance of oil Quality

WEEK 6: Breakdown mechanisms in solid and composite dielectrics, **UNIT TEST-II**

WEEK 7: UNIT III GENERATION OF HIGH VOLTAGES AND HIGH CURRENTS

Generation of High DC, AC, impulse voltages and currents

WEEK 8: Triggering, control of impulse generators

WEEK 9: PRE MODEL EXAM

WEEK 10: PRE MODEL EXAM,

UNIT IV MEASUREMENT OF HIGH VOLTAGES AND HIGH CURRENTS

High Resistance with series ammeter Dividers, Resistance, Capacitance and Mixed dividers

WEEK 11:– Peak Voltmeter, Generating Voltmeters - Capacitance Voltage Transformers, Electrostatic Voltmeters

WEEK 12:–Sphere Gaps - High current shunts- Digital techniques in high voltage measurement, **UNIT TEST-IV**

WEEK 13: UNIT V HIGH VOLTAGE TESTING & INSULATION COORDINATION

High voltage testing of electrical power apparatus as per International and Indian standards – Power frequency

WEEK 14: impulse voltage and DC testing of Insulators, circuit breakers, bushing, isolators and transformers- Insulation Coordination

WEEK 15: MODEL PRACTICAL EXAM, MODEL EXAM

WEEK 16: MODEL EXAM

WEEK 17: MODEL EXAM

TEXT BOOKS

1. S.Naidu and V. Kamaraju, 'High Voltage Engineering', Tata McGraw Hill, Fifth Edition, 2013.

2. E. Kuffel and W.S. Zaengl, J.Kuffel, 'High voltage Engineering fundamentals', Newnes Second Edition Elsevier , New Delhi, 2005.

3. Subir Ray,' An Introduction to High Voltage Engineering' PHI Learning Private Limited, New Delhi, Second Edition, 2013.

REFERENCE BOOKS

1. L.L. Alston, 'High Voltage Technology', Oxford University Press, First Indian Edition, 2011.

2. C.L. Wadhwa, 'High voltage Engineering', New Age International Publishers, Third Edition, 2010.

EE6702 PROTECTION AND SWITCHGEAR

WEEK 1: Introduction

WEEK 2: UNIT I PROTECTION SCHEMES

Principles and need for protective schemes – nature and causes of faults – types of faults, Fault current calculation using symmetrical components – Methods of Neutral grounding

WEEK 3: Zones of protection and essential qualities of protection, Protection schemes

WEEK 4: UNIT TEST-I

UNIT II ELECTROMAGNETIC RELAYS

Operating principles of relays - the Universal relay – Torque equation

WEEK 5: R-X diagram –Electromagnetic Relays

WEEK 6: Overcurrent, Directional, Distance, Differential, Negative sequence and Under frequency relays**, UNIT TEST-II**

WEEK 7: UNIT III APPARATUS PROTECTION

Current transformers and Potential transformers and their applications in protection schemes

WEEK 8: Protection of transformer, generator, motor, busbars and transmission line.

WEEK 9: PRE MODEL EXAM

WEEK 10: PRE MODEL EXAM

UNIT IV STATIC RELAYS AND NUMERICAL PROTECTION

Static relays – Phase, Amplitude Comparators, Synthesis of various relays using Static comparators

WEEK 11: Block diagram of Numerical relays, Overcurrent protection, transformer differential protection,

WEEK 12: distant protection of transmission lines, UNIT TEST-IV

WEEK 13:UNIT-V CIRCUIT BREAKERS

Physics of arcing phenomenon and arc interruption - DC and AC circuit breaking – re-striking voltage and recovery voltage - rate of rise of recovery voltage - resistance switching - current chopping

WEEK 14: interruption of capacitive current - Types of circuit breakers – air blast, air break, oil, SF6 and vacuum circuit breakers – comparison of different circuit breakers – Rating and selection of Circuit breakers.

WEEK 15: MODEL PRACTICAL EXAM, MODEL EXAM

WEEK 16: MODEL EXAM

WEEK 17: MODEL EXAM

TEXT BOOKS

1. Sunil S.Rao, 'Switchgear and Protection', Khanna Publishers, New Delhi, 2008.

2. B.Rabindranath and N.Chander, 'Power System Protection and Switchgear', New Age International (P) Ltd., First Edition 2011.

3. M.L.Soni, P.V.Gupta, U.S.Bhatnagar, A.Chakrabarti, ‘A Text Book on Power System Engineering’, Dhanpat Rai & Co.,1998

.REFERENCE BOOKS

1. Badri Ram ,B.H. Vishwakarma, ‘Power System Protection and Switchgear’, New Age International Pvt Ltd Publishers, Second Edition 2011.

2. Y.G.Paithankar and S.R.Bhide, ‘Fundamentals of power system protection’, Second Edition, Prentice Hall of India Pvt. Ltd., New Delhi, 2010.

3. C.L.Wadhwa, ‘Electrical Power Systems’, 6th Edition, New Age International (P) Ltd., 2010

4. Ravindra P.Singh, ‘ Switchgear and Power System Protection’, PHI Learning Private Ltd., New Delhi, 2009.

5. Bhavesh Bhalja, R.P. Maheshwari, Nilesh G. Chotani,’Protection and Switchgear’ Oxford University Press, 2011.

EE6703 SPECIAL ELECTRICAL MACHINES

WEEK 1:Introduction

WEEK 2: UNIT I SYNCHRONOUS RELUCTANCE MOTORS

Constructional features – Types – Axial and Radial flux motors. Operating principles – Variable Reluctance Motors – Voltage and Torque Equations

WEEK 3: Phasor diagram - performance characteristics,Applications.

WEEK 4: UNIT TEST-I, UNIT II STEPPER MOTORS

Constructional features – Principle of operation – Variable reluctance motor – Hybrid motor – Single and multi stack configurations – Torque equations

WEEK 5: Modes of excitation – Characteristics – Drive

circuits – Microprocessor control of stepper motors – Closed loop control

WEEK 6: Concept of lead angle, Applications **UNIT TEST-II**

WEEK 7: UNIT III SWITCHED RELUCTANCE MOTORS (SRM)

Constructional features – Rotary and Linear SRM - Principle of operation, Torque production –Steady state performance prediction

WEEK 8: - Analytical method -Power Converters and their controllers, Methods of Rotor position sensing – Sensor less operation, Characteristics and Closed loop control–

WEEK 9: Applications, PRE MODEL EXAM

WEEK 10: PRE MODEL EXAM

UNIT IV PERMANENT MAGNET BRUSHLESS D.C. MOTORS

Permanent Magnet materials – Minor hysteresis loop and recoil line Magnetic Characteristics

WEEK 11: Permeance coefficient -Principle of operation – Types – Magnetic circuit analysis EMF and torque equations –Commutation - Power Converter Circuits and their controllers –

WEEK 12: Motor characteristics and control– Applications, UNIT TEST-IV

WEEK 13: UNIT-V PERMANENT MAGNET SYNCHRONOUS MOTORS (PMSM)

Principle of operation – Ideal PMSM – EMF and Torque equations – Armature MMF – Synchronous Reactance – Sine wave motor with practical windings

WEEK 14: Phasor diagram – Torque/speed characteristics - Power controllers - Converter Volt-ampere requirements– Applications.

WEEK 15: MODEL PRACTICAL EXAM, MODEL EXAM

WEEK 16: MODEL EXAM

WEEK 17: MODEL EXAM

TEXT BOOKS

1. K.Venkataratnam, 'Special Electrical Machines', Universities Press (India) Private Limited, 2008.

2. T.J.E. Miller, 'Brushless Permanent Magnet and Reluctance Motor Drives', Clarendon Press,Oxford, 1989.
3. T. Kenjo, 'Stepping Motors and Their Microprocessor Controls', Clarendon Press London, 1984.

REFERENCE BOOKS

1. R.Krishnan, 'Switched Reluctance Motor Drives – Modeling, Simulation, Analysis, Design and Application', CRC Press, New York, 2001.
2. P.P. Aearnley, 'Stepping Motors – A Guide to Motor Theory and Practice', Peter Perengrinus London, 1982.
3. T. Kenjo and S. Nagamori, 'Permanent Magnet and Brushless DC Motors', Clarendon Press,London, 1988.
4. E.G. Janardanan, 'Special electrical machines', PHI learning Private Limited, Delhi, 2014

MG6851 PRINCIPLES OF MANAGEMENT

WEEK 1: Introduction

WEEK 2: INTRODUCTION TO MANAGEMENT AND ORGANIZATIONS

Definition of Management – Science or Art – Manager Vs Entrepreneur - types of managers -managerial roles and skills – Evolution of Management, Scientific, human relations , system and contingency approaches

WEEK 3: Types of Business organizationSole proprietorship, partnership,company-public and private sector enterprises - Organization culture and Environment, Current trends and issues in Management.

WEEK 4: UNIT TEST-I UNIT II PLANNING

Nature and purpose of planning – planning process

WEEK 5: Types of planning – objectives – setting objectives – policies, Planning premises

WEEK 6 – Strategic Management – Planning Tools and Techniques– Decision making steps and process, **UNIT TEST-II**

WEEK 7: UNIT III ORGANISING

Nature and purpose – Formal and informal organization –organization chart, organization structure– types – Line and staff authority

WEEK 8:– departmentalization – delegation of authority – centralization and decentralization, Job Design - Human Resource Management, HR Planning, Recruitment, selection

WEEK 9:–, Training and Development, Performance Management, Career planning and management, PRE MODEL EXAM

WEEK 10: PRE MODEL EXAM

UNIT IV DIRECTING

Foundations of individual and group behaviour – motivation – motivation theories

WEEK 11: motivational techniques , job satisfaction – job enrichment – leadership – types and theories of leadership communication – process of communication – barrier in communication –.

WEEK 12: effective communication –communication, UNIT TEST - IV

WEEK 13: UNIT-V CONTROLLING

System and process of controlling – budgetary and non-budgetary control techniques – use of computers and IT in Management control

WEEK 14: Productivity problems and management – control and performance – direct and preventive control – reporting.

WEEK 15: MODEL PRACTICAL EXAM, MODEL EXAM

WEEK 16: MODEL EXAM

WEEK 17: MODEL EXAM

TEXT BOOKS

1. Stephen P. Robbins & Mary Coulter, " Management", Prentice Hall (India) Pvt. Ltd., 10th Edition, 2009.

2. JAF Stoner, Freeman R.E and Daniel R Gilbert “Management”, Pearson Education, 6th Edition,2004.

REFERENCE BOOKS

1. Stephen A. Robbins & David A. Decenzo & Mary Coulter, “Fundamentals of Management” Pearson Education, 7th Edition, 2011.
2. Robert Kreitner & Mamata Mohapatra, “ Management”, Biztantra, 2008.
3. Harold Koontz & Heinz Weihrich “Essentials of Management” Tata McGraw Hill,1998.
4. Tripathy PC & Reddy PN, “Principles of Management”, Tata Mcgraw Hill, 1999

EE6007 MICRO ELECTRO MECHANICAL SYSTEMS

WEEK 1: Introduction

WEEK 2: UNIT I INTRODUCTION

Intrinsic Characteristics of MEMS – Energy Domains and Transducers- Sensors and Actuators – Introduction to Micro fabrication, Silicon based MEMS processes – New Materials – Review of Electrical and Mechanical concepts in MEMSSemiconductor devices

WEEK 3: – Stress and strain analysis, Flexural beam bending- Torsional deflection

WEEK 4: UNIT TEST-I

UNIT II SENSORS AND ACTUATORS-I

Electrostatic sensors – Parallel plate capacitors, Applications

WEEK 5: – Interdigitated Finger capacitor – Comb drive devices – Micro Grippers – Micro Motors - Thermal Sensing and Actuation – Thermal expansion – Thermal couples – Thermal resistors

WEEK 6: Thermal Bimorph - Applications – Magnetic

Actuators – Micromagnetic components – Case studies of MEMS in magnetic actuators- Actuation using Shape Memory Alloys, **UNIT TEST-II**

WEEK 7: UNIT III SENSORS AND ACTUATORS-II

Piezoresistive sensors – Piezoresistive sensor materials, Stress analysis of mechanical elements, Applications to Inertia, Pressure, Tactile and Flow sensors Piezoelectric sensors and actuators

WEEK 8: Piezoelectric effects, Piezoelectric materials, Applications to Inertia, Acoustic,

WEEK 9:– Tactile and Flow sensors. PRE MODEL EXAM

WEEK 10: PRE MODEL EXAM

UNIT IV MICROMACHINING

Silicon Anisotropic Etching – Anisotrophic Wet Etching – Dry Etching of Silicon Plasma Etching

WEEK 11: Deep Reaction Ion Etching (DRIE) – Isotropic Wet Etching – Gas Phase Etchants – Case studies Basic surface micro machining processes Structural and Sacrificial

WEEK 12: Materials – Acceleration of sacrificial Etch – Striction and Antistriction methods – LIGA Process - Assembly of 3D MEMS – Foundry process. UNIT TEST IV

WEEK 13: UNIT-V POLYMER AND OPTICAL MEMS

Polymers in MEMS– Polimide - SU-8 - Liquid Crystal Polymer (LCP) – PDMS – PMMA – Parylene –Fluorocarbon

WEEK 14: Application to Acceleration, Pressure, Flow and Tactile sensors- Optical MEMS – Lenses and Mirrors – Actuators for Active Optical MEMS

WEEK 15: MODEL PRACTICAL EXAM, MODEL EXAM

WEEK 16: MODEL EXAM

WEEK 17: MODEL EXAM

TEXT BOOKS

1. Chang Liu, ‘Foundations of MEMS’, Pearson Education Inc., 2012.

2. Stephen D Senturia, 'Microsystem Design', Springer Publication, 2000.
3. Tai Ran Hsu, "MEMS & Micro systems Design and Manufacture" Tata McGraw Hill,New Delhi, 2002.

REFERENCE BOOKS

1. Nadim Maluf," An Introduction to Micro Electro Mechanical System Design", Artech House, 2000.
2. Mohamed Gad-el-Hak, editor, " The MEMS Handbook", CRC press Baco Raton, 2001.
3. Julian w. Gardner, Vijay K. Varadan, Osama O.Awadelkarim, Micro Sensors MEMS and Smart Devices, John Wiley & Son LTD, 2002.
4. James J.Allen, Micro Electro Mechanical System Design, CRC Press Publisher, 2005.
5. Thomas M.Adams and Richard A.Layton, "Introduction MEMS, Fabrication and Application," Springer, 2010.

EE6004 FLEXIBLE AC TRANSMISSION SYSTEMS

WEEK 1: Introduction

WEEK 2: UNIT I INTRODUCTION

Reactive power control in electrical power transmission lines - Uncompensated transmission line series compensation – Basic concepts of Static Var Compensator (SVC)

WEEK 3: Thyristor Controlled Series capacitor (TCSC), Unified power flow controller (UPFC).

WEEK 4: UNIT TEST-I

UNIT II STATIC VAR COMPENSATOR (SVC) AND APPLICATIONS

Voltage control by SVC – Advantages of slope in dynamic characteristics – Influence of SVC on system voltage

WEEK 5: Design of SVC voltage regulator –Modelling of SVC for power flow and fast transient stability – Applications

WEEK 6: Enhancement of transient stability – Steady state power transfer –Enhancement of power system damping, **UNIT TEST-II**

WEEK 7: UNIT III THYRISTOR CONTROLLED SERIES CAPACITOR (TCSC) AND APPLICATIONS

Operation of the TCSC – Different modes of operation, Modelling of TCSC – Variable reactance model

WEEK 8:–Modelling for Power Flow and stability studies, Applications: Improvement of the system stability limit

WEEK 9: Enhancement of system damping. PRE MODEL EXAM

WEEK 10: PRE MODEL EXAM

UNIT IV VOLTAGE SOURCE CONVERTER BASED FACTS CONTROLLERS

Static Synchronous Compensator (STATCOM), Principle of operation – V-I Characteristics.

WEEK 11: Applications: Steady state power transfer-enhancement of transient stability prevention of voltage instability, SSSC-operation of SSSC and the control of power flow

WEEK 12: modelling of SSSC in load flow and transient stability studies. UNIT TEST –IV

WEEK 13: UNIT-V CO-ORDINATION OF FACTS CONTROLLERS

Controller interactions – SVC – SVC interaction

WEEK 14: Co-ordination of multiple controllers using linear control techniques – Control coordination using genetic algorithms.

WEEK 15: MODEL PRACTICAL EXAM, MODEL EXAM

WEEK 16: MODEL EXAM

WEEK 17: MODEL EXAM

TEXT BOOKS

1. R.Mohan Mathur, Rajiv K.Varma, "Thyristor – Based Facts Controllers for Electrical Transmission Systems", IEEE press and John Wiley & Sons, Inc, 2002.

2. Narain G. Hingorani, “Understanding FACTS -Concepts and Technology of Flexible AC Transmission Systems”, Standard Publishers Distributors, Delhi- 110 006, 2011.
3. K.R.Padiyar,” FACTS Controllers in Power Transmission and Distribution”, New Age International(P) Limited, Publishers, New Delhi, 2008.

REFERENCE BOOKS

1. A.T.John, “Flexible A.C. Transmission Systems”, Institution of Electrical and Electronic Engineers (IEEE), 1999.
2. V.K.Sood,HVDC and FACTS controllers – Applications of Static Converters in Power System, APRIL 2004 , Kluwer Academic Publishers, 2004.
3. Xiao – Ping Zang, Christian Rehtanz and Bikash Pal, “Flexible AC Transmission System: Modelling and Control” Springer, 2012.

EE6711 POWER SYSTEM SIMULATION LABORATORY

1. Computation of Parameters and Modelling of Transmission Lines
2. Formation of Bus Admittance and Impedance Matrices and Solution of Networks.
3. Load Flow Analysis - I : Solution of load flow and related problems using Gauss-Seidel Method
4. Load Flow Analysis - II: Solution of load flow and related problems using Newton Raphson.
5. Fault Analysis
6. Transient and Small Signal Stability Analysis: Single-Machine Infinite Bus System
7. Transient Stability Analysis of Multi machine Power Systems
8. Electromagnetic Transients in Power Systems
9. Load – Frequency Dynamics of Single- Area and Two-Area Power Systems
10. Economic Dispatch in Power Systems

EE6712 COMPREHENSION

1. Prepare and present technological developments

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