BOS/E

VAAGDEVI COLLEGE OF ENGINEERING

AUTONOMOUS
Accredited by NAAC with Grade 'A' | Research Centre Affiliated to JNTUH
Accredited by NBA | Certified by ISO 9001 : 2015
Approved by AICTE, New Delhi | Affiliated to JNTUH
Bollikunta, Khila Warangal (Mandal), Warangal Urban-506 005 (T.S)

ACCREDITED BY NAAC A-GRADE

Date: 28-11-2020

BOARD OF STUDIES MEETING

Minutes of the meeting of Board of studies for Electrical and Electronics Engineering department held on **28-11-2020 at 11:30 a.m.**
Ref: In-Continuation with Departmental BOS meeting held on 18/11/2020.

Sl. No.	Name and Address	Designation	Signature
1	**Dr. Y. Hareesh Kumar** Associate Professor, Department of EEE, VCE, Warangal	Chairperson	Hareesh
2	**Dr. M. Sailaja Kumari** Professor & Head, EE Dept, NIT, Warangal	Member (Subject Expert)	28/11/2020
3	**Dr. S. Tara Kalyani** Professor & Controller of Examination, JNTUH, Hyderabad	Member (University Nominee)	S. Tara Kalyani
4	**Dr. K. Prakash** Professor, Department of EEE, VCE, Warangal	Member (Faculty)	28.11.2020
5	**Dr. E. Vidya Sagar** Associate Professor EE Dept. Osmania University, Hyderabad	Member (Subject Expert)	
6	**Sri. T. V. S. Nagaraj Kumar** Deputy Manager, BHEL R&D, Hyderabad	Member (Representative from Industry)	28.11.20
7	**Sri. N. Mahender** A.E, TS NPDCL, Warangal	Member (Representative from Alumni)	
8	**Dr. Durga Hari Kiran B** Assistant Professor, Department of EEE, VCE, Warangal	Member (Faculty)	28/11/2020
9	**Dr. M. Vishnu Prasad** Assistant Professor, Department of EEE, VCE, Warangal	Member (Faculty)	M. Vishnu Prasad
10	**Sri. P. Sadanandam** Associate Professor, Department of EEE, VCE, Warangal	Member (Faculty)	

The following decisions are taken:

1. Approved the course structure scheme of B.Tech. (R20-Regulations) for I Year (I and II Semesters) with few revisions.
2. Approved the syllabi of B.Tech. (R20-Regulations) for I Year (I and II Semesters) with few revisions.
3. It is ~~proposed~~ Approved to continue R18 Scheme and Syllabi for M.Tech (PE & PSCA) as R20.

4. As university is following 30 marks for internals & 70 marks for external, it is suggested that the autonomous colleges also follow the same, not 40 internals & 60 externals for evaluation.
5. It is suggested to distribute total credits evenly across all semesters

Hareesh
Dr. Y. Hareesh Kumar
(BOS-Chairperson)

S. Tara Kalyani
(S. TARA KALYANI)

Date: 28-11-2020

BOARD OF STUDIES MEETING

Minutes of the meeting of Board of studies for Electrical and Electronics Engineering department held on 28-11-2020 at 11:30 a.m.
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8	**Dr. Durga Hari Kiran B** Assistant Professor, Department of EEE, VCE, Warangal	Member (Faculty)	
9	**Dr. M. Vishnu Prasad** Assistant Professor, Department of EEE, VCE, Warangal	Member (Faculty)	
10	**Sri. P. Sadanandam** Associate Professor, Department of EEE, VCE, Warangal	Member (Faculty)	

The following decisions are taken:

1. Approved the course structure scheme of B.Tech. (R20-Regulations) for I Year (I and II Semesters) with few revisions.
2. Approved the syllabi of I B.Tech. (R20-Regulations) for I Year (I and II Semesters) with few revisions.
3. It is proposed to continue R15 Scheme and Syllabi for M.Tech (PE & PSCM) I & II Semesters.

Dr. Y. Haresh Kumar
(BOS-Chairperson)

BOS/E

VAAGDEVI COLLEGE OF ENGINEERING
(AUTONOMOUS)
ELECTRICAL AND ELECTRONICS ENGINEERING

COURSE STRUCTURE

(Applicable for the batches admitted from A.Y. 2020-2021 onwards)

I-SEMESTER

S.No	Course Code	Title of the Course	L	T	P	Credits
1		Linear Algebra and Complex Variables	3	1	0	4
2		Programming for Problem Solving	3	1	0	4
3		Fundamentals of Mechanical Engineering	3	0	0	3
4		Chemistry	3	0	0	3
5		English Language and Interactive Communication Skills Lab	0	0	3	1.5
6		Programming for Problem Solving Lab	0	0	2	1
7		Engineering and IT Workshop	0	0	3	1.5
8		Induction Program	0	0	0	0
		Total Credits	**12**	**02**	**08**	**18**

II-SEMESTER

S.No	Course Code	Title of the Course	L	T	P	Credits
1		Differential Calculus and Numerical Methods	3	1	0	4
2		Electrical Circuits – I	3	1	0	4
3		Basic Electronic Devices	3	1	0	4
4		Physics	3	0	0	3
5		Electrical Engineering Practice Lab	0	0	3	1.5
6		Physics Lab	0	0	2	1
7		Engineering Drawing*	0	0	4	2
8		Basic Electronic Devices Lab	0	0	3	1.5
9		Games/Sports	0	0	0	0
		Total Credits	**12**	**03**	**12**	**21**

('*' it will be implemented by using an open source (Auto CAD) software)

(M-Sanjay kumari). (Dr. Y. Haresh Kumar). (S. TARA KALYANI) (E. Vidya Sagar)

Dr. D V G a Hari Kiran B 28/11/2020 (Dr. M. VISHNU PRASAD) (T. V. S. Nagaraj Kumar) (P. Sadanandam)

VAAGDEVI COLLEGE OF ENGINEERING

Autonomous

Bollikunta, Warangal

Department of Electrical and Electronics Engineering

M.Tech. (Power Electronics)

COURSE STRUCTURE

(Applicable for the batches admitted from Academic Year 2020-21 onwards)

I-SEMESTER

Sl.No.	Course Code	Title of the Course	L	T	P	Credits
1	M20PE01	Analysis of Power Electronic Converters	3	0	0	3
2	M20PE02	Power Electronic Control of DC Drives	3	0	0	3
3	M20PE03 M20PE04 M20PE05 M20EC01	**Program Elective-I** Modeling and Analysis of Electrical Machines Renewable Energy Systems Modern Control Theory Programmable Logic Controllers and theirApplications	3	0	0	3
4	M20PE06 M20PE07 M20EC02	**Program Elective-II** Modeling of Power Semiconductor Devices Digital Control of Power Electronics and Drive Systems Microcontrollers and Applications	3	0	0	3
5	M20PE08	Power Converters Simulation Lab	0	0	4	2
6	M20PE09	Power Converters Lab	0	0	4	2
7	M20MC01	Research Methodology	2	0	0	2
8	M20AC02	**Audit Course-I** Stress Management	2	0	0	0
		Total Credits	**16**	**00**	**08**	**18**

II- SEMESTER

Sl.No.	Course Code	Title of the Course	L	T	P	Credits
1	M20PE10	ModernPower Electronic Converters	3	0	0	3
2	M20PE11	Power Electronic Control of AC Drives	3	0	0	3
3	M20PE13 M20PE14 M20PE15	**Program Elective-III** Electrical and Hybrid Vehicles Digital Control Systems Power Quality	3	0	0	3
4	M20EC03 M20PE16 M20PS11	**Program Elective-IV** Embedded Systems Dynamics of Electrical Machines AI Techniques in Electrical Engineering	3	0	0	3
5	M20PE17	Power Convertersand Drives Simulation Lab	0	0	4	2
6	M20PE18	Power Convertersand Drives Lab	0	0	4	2
7	M20PE19	Mini Project	0	0	4	2
8	M20AC01	**Audit Course-II** English for Research Paper Writing	2	0	0	0
		Total Credits	**14**	**00**	**12**	**18**

Dr. Y. Haveela Rani

III-SEMESTER

Sl.No.	Course Code	Title of the Course	L	T	P	Credits
1	M20PE12 M20PE20 M20PS17 M20EC04	**Program Elective-V** HVDC & FACTS Switched Mode Power Supplies Smart Grid Technologies Advanced Digital Signal Processing	3	0	0	3
2	M20EE01 M20EE02 M20ME01	**Open Elective** Energy Auditing, Conservation &Management Optimization Techniques Industrial Safety	3	0	0	3
3	M20PE21	Dissertation Phase-I	0	0	20	10
		Total Credits	**06**	**00**	**20**	**16**

IV-SEMESTER

Sl.No.	Course Code	Title of the Course	L	T	P	Credits
1	M20PE22	Dissertation Phase-II	0	0	32	16
		Total Credits	**00**	**00**	**32**	**16**

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Hareem
(Dr. Y. Hareem Kumar).

VAAGDEVI COLLEGE OF ENGINEERING
(AUTONOMOUS)
ELECTRICAL AND ELECTRONICS ENGINEERING
COURSE STRUCTURE
M.TECH (POWER SYSTEM CONTROL AND AUTOMATION)
(Applicable for the batches admitted from A.Y. 2020-2021 onwards)

I-SEMESTER

S.No	Course Code	Title of the Course	L	T	P	Credits
1	M20PS01	Advanced Power System Analysis	3	0	0	3
2	M20PS02	Advanced Power System Protection	3	0	0	3
3	M20PS03 M20PS04 M20PE04 M20PE05	**Program Elective-I** Economic operation power systems Power System Reliability Renewable Energy Systems Modern Control Theory	3	0	0	3
4	M20PE01 M20PS05 M20EC02	**Program Elective-II** Analysis of Power Electronics Converters Distribution System Planning Micro Controller and Applications	3	0	0	3
5	M20MC01	Research Methodology	2	0	0	2
6	M20PS06	Power Systems Simulation Lab-I	0	0	4	2
7	M20PS07	Power Systems Lab-I	0	0	4	2
8	M20AC02	**Audit Course-I** Stress Management	2	0	0	0
		Total Credits	**16**	**0**	**8**	**18**

II-SEMESTER

S.No	Course Code	Title of the Course	L	T	P	Credits
1	M20PS08	Power System Dynamics	3	0	0	3
2	M20PS09	Power System Automation	3	0	0	3
3	M20PS10 M20PE14 M20PE15	**Program Elective-III** Restructured Power Systems Digital Control Systems Power Quality	3	0	0	3
4	M20PS11 M20PS12 M20PS13	**Program Elective-IV** AI Techniques in Electrical Engineering EHV AC Transmission Reactive Power Compensation and Voltage Stability	3	0	0	3
5	M20PS14	Power Systems Simulation Lab-II	0	0	4	2
6	M20PS15	Power Systems Lab-II	0	0	4	2
7	M20PS16	Mini Project	0	0	4	2
8	M20AC01	**Audit Course-II** English for Research Paper Writing	2	0	0	0
		Total Credits	**14**	**0**	**12**	**18**

Hareem
(Dr. Y. Hareem Kumar)

III-SEMESTER

S.No	Course Code	Title of the Course	L	T	P	Credits
1	M20PE12 M20PS17 M20PS18 M20EC04	**Program Elective-V** HVDC & FACTS Smart Grid Technologies Distributed Generation Advanced Digital Signal Processing	3	0	0	3
2	M20EE01 M20ME01 M20EE02	**Open Elective** Energy Auditing, Conservation and Management Industrial Safety Optimization Techniques	3	0	0	3
3	M20PS19	Dissertation Phase-I	0	0	20	10
		Total Credits	**06**	**0**	**20**	**16**

IV-SEMESTER

S.No	Course Code	Title of the Course	L	T	P	Credits
1	M20PS20	Dissertation Phase-II	0	0	32	16
		Total Credits	**0**	**0**	**32**	**16**

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Haresm
(Dr. Y. Haresm Kumar)

BOS/E

VAAGDEVI COLLEGE OF ENGINEERING
(AUTONOMOUS)

ELECTRICAL CIRCUITS-I

B. TECH- II SEM. (EEE) **L/T/P/C**
3/1 /0 /4

Course Objectives:

1. The course introduces the basic concept of circuit analysis which is the foundation for all subjects of the Electrical Engineering discipline.
2. The emphasis of this course is laid on the basic analysis of circuits which includes
   - Single phase circuits
   - Magnetic circuits and theorems
   - Network topology

UNIT-I: Introduction to Electrical circuits: Essence of electricity, Electric field electric current, potential difference, E.M.F, electric power Ohm's law, R-L-C parameters, Voltage and Current sources, dependent and independent sources, Source Transformation.

Basics of Circuits

KCL, KVL, network reduction techniques, series, parallel, series-parallel, Star-Delta, Delta Star transformations. Nodal analysis, Mesh analysis, Super node and Super mesh for DC excitations & Problems.

UNIT-II: Single Phase AC Circuits: Voltage & Current relationship for passive elements for different input signals (square, ramp, saw-tooth, triangular), R.M.S, average values and form factor for different periodic wave forms-steady state analysis of R, L, C (in different combination) with sinusoidal excitation –concept of reactance, impedance, susceptance and admittance. Phase and phase difference, concept of power factor, real and reactive power, J-notation, complex and polar forms of representation, complex power & Problems.

UNIT-III:Locus diagram and Resonance:

Locus diagram: Series R-L, R-C, R-L-C and parallel combination with variation of various parameters. Resonance: Series, parallel circuits, concept of bandwidth and Q-factor & Problems.

UNIT-IV: Network Theorems (with D.C and A.C Excitation): Superposition, Reciprocity, Norton's, Thevenin's, Maximum power transfer, Milliman's, Tellegen's and compensation theorems and Problems.

UNIT-V:Magnetic Circuits: Magnetic circuits, Faraday's laws of electromagnetic induction – concept of self and mutual inductance, Dot convention, coefficient of coupling, composite magnetic circuits, analysis of series and parallel magnetic circuits & Problems.

S. Tara Kalyani
LS. TARA KALYANI

Dr. K. Prakash

T.V.S. Nagaraj Kumar

M. Vishnu Prasad

COURSE OUTCOMES:

After the course completion, the students are able to:

1. Learn basics of electrical circuits such as laws, transformation and network reduction techniques.
2. Explore the basic principles and concepts involved in AC circuits and analyze power in series and parallel AC circuits
3. Learn the concepts of resonance and the importance of locus diagrams.
4. Understand various network theorems and its applications in electrical circuits.
5. Analyze the series and parallel magnetic circuits with basic magnetic principles and laws of electromagnetic induction.

Text Books

1. Engineering Circuit Analysis by William Hayt and Jack E. Kemmerly, McGraw Hill Company, 6th edition.
2. Network Analysis by A.Sudhakar and Shyammohan S Palli, Tata MC Graw Hill.

References

1. Network Analysis by M.E. Van Valkenberg.
2. Linear Circuit Analysis (time domain, Phasor and Laplace transform approaches) Second edition by Raymond A. Decarlo and Penmin – L in, Oxford University Press. Second edition, 2004.
3. Electrical Circuits Theory by K.Rajeswaram, Pearson Education, 2004.
4. Basic Circuits Analysis by D.R. Cunningham & J.A. Stuller, Jaico Publications.
5. Electrical Circuits by A.Chakrabarthy, Dhanpat Rai & Sons.

BOS/E

VAAGDEVI COLLEGE OF ENGINEERING
(AUTONOMOUS)

ELECTRICAL ENGINEERING PRACTICE LAB

B.Tech II Semester
Subject code:
Prerequisites: None

L	T	P	C
0	0	3	1.5

Course objectives

- To understand the basics of Electrical Engineering.
- To introduce hardware skills such as bread board connections and soldering.
- To introduce various types of wiring.
- To introduce basic understanding of Electrical parameter measurement.

Part A (For Laboratory Examination – Minimum of 6 experiments)

1. Introduction to various equipment used in Electrical Engineering.
2. Study of resistance color coding and assembling on bread board.
3. Series, parallel connection of R, L and C components.
4. Control of two lamps using different switches.
5. Wiring for fluorescent lamp and ceiling fan.
6. Staircase wiring.
7. Preparation of plate or pipe earthing.
8. Preparation of switch board for DOL starter connection for a motor.

Part B (All Experiments)

1. Design a simple electrical circuit on a bread board and solder on general PCB.
2. Measurement of ac signal parameters using cathode ray oscilloscope and function generator
3. Basic Project of choice.

Course Outcomes.

After completion of this course, Students are able to

- Identify and find the various components and equipment used for electrical engineering applications.
- Understand the staircase wiring and ceiling fan wiring.
- Develop the simple electric circuits on bread board and PCB.
- Understand the earthing connections and DOL starter connection.

Hareesh

(M. Mamatha).

S. Tara Kalyani

(S. TARA KALYANI)

T. V. S. Nagarajkumar

(T. V. S. Nagarajkumar)

Dr. Durga Hariharan B

Dr. K. Prakash

M. Vishnu Prasad

Bas/E

VAAGDEVI COLLEGE OF ENGINEERING
(AUTONOMOUS)

BASIC ELECTRICAL and ELECTRONICS ENGINEERING
(Common to CSE, CSE aligned Courses, Mechanical & Civil)

B.Tech II Semester **L T P C**
Subject code: **3 0 0 3**

Course objectives:
In this course it is aimed to introduce

- The basic concepts of electrical circuits which is the foundation for network theory
- To understand about single phase ACcircuits.
- To understand functioning of different types of DC machines and transformers.
- To understand the various operations of transistors and special purpose diodes
- To learn basic concepts of diodes, Rectifiers and filters.

UNIT-I: Electrical Circuits: Circuits concept, R-L-C Parameters, Voltage and Current sources, Source Transformation, V–I relationship for Passive elements, Kirchoff's Laws, Network reduction techniques – series, parallel, series parallel, star-delta & star-delta transformations, Nodal Analysis, Mesh analysis with DC excitations. Network Theorems - Thevenin's, Norton's, Maximum Power Transfer, Superposition, Reciprocity Theorems with DC excitation Calculation of Power (VI)

UNIT-II:Single Phase AC Circuits - R.M.S. and Average values, Form Factor, steady state analysis of series, Parallel and Series parallel Combinations of R, L and C with Sinusoidal excitation concept of reactance, Impedance, Susceptance and Admittance –Concept of Power Factor.

UNIT-III: Transformers and DC Machines:: D.C.Machines: Constructional features, Methods of Excitation, E.M.F. Equation and Applications, Torque development in D.C motor Characteristics of DC motors, losses, Efficiency, Speed control of DC Shunt motors Role of Transformers in the fields of engineering, Transformer principle, Ideal and Practical Transformers Equivalent circuit, Regulation and Efficiency.

UNIT-IV:P-N Junction Diode - Diode equation, V-I characteristic, Temperature dependence, Bipolar Junction Transistor (BJT) - Construction, Principle of Operation, CB,CE and CC configurations, ZenerDiode,Zener diode characteristics, Use of Zener diode as simple regulator.

UNIT-V:

Operational amplifier basics, op amp inverting and Non-Inverting amplifier, Rectifiers and Filters - The P-N junction as a rectifier - A Half Wave Rectifier, Bridge Rectifier, Filters –Inductor Filters, Capacitor Filters.

Course Outcomes:

After Completion of the course, the students will be able to

1. Analyze circuit theorems, mesh and nodal analysis, series and parallel networks, Electrical power.
2. Gain knowledge on AC circuits, reactance, Impedance, Susceptance and Admittance and Power Factor
3. Learnthe working principle of DCmotors, Transformers
4. Study the characteristics of PN Junction diode and zener diode
5. Learn the basic of Amplifiers and Rectifiers.

Text Books:

1. Circuit Theory Analysis and Synthesis by A Chakrabarti, Dhanpat rai & co.

S. Tara Kalyani (S. TARA KALYANI)
M. Vishnu Prasad
Dr. K. Prakash
T.V.S. Nagaraju

2. Basic Electrical Engineering, P Ramana, M. Suryakalavathi, G. T. Chandra Sekhar,1st Edition, S. Chand Technical Publications, 2018
3. Electronic Devices and Circuits, S. Salivahanan and N Suresh Kumar, 3rd Edition TMH, Revised 2019

References:

1. Network Analysis by M.E Van Valkenburg, Pearson Publications 3rd Edition
2. Principles of electrical machines by V K Mehta, S Chand Publications
3. Electronics devices and circuits by I J NagrathPHI Publications

(Dr. Durgaprasad Kiran B)

BAS/E

BASIC ELECTRICAL AND ELECTRONICS ENGINEERING LAB

(Common to CSE, CSE aligned Courses, Mechanical & Civil)

B.Tech II Semester
Subject code:

L	T	P	C
0	0	3	1.5

Course Objectives:

- Impart a basic knowledge of electrical quantities such as current, voltage, power, energy and frequency to understand the impact of technology in a global and societal context.
- Provide working knowledge for the analysis of basic DC circuits used in electrical and electronic devices.
- To explain the working principle, construction, applications of DC machines
- Highlight the operation of diodes, transistors, rectifiers and filters.

List of Experiments

1. Verification of Kirchhoff's Laws.
2. Verification of Superposition and Reciprocity Theorems.
3. Verification of Thevenin's and Maximum Power transfer theorem.
4. Speed Control of DC Shunt Motor.
5. Swinburne's Test on DC shunt machine.
6. Brake test on DC shunt motor.
7. OC & SC tests on single phase transformer.
8. PN Junction Diode characteristics (Forward bias & Reverse bias).
9. Transistor CE Characteristics (Input and Output)
10. Rectifier with and without filters (Full wave & Half wave)

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Course outcomes:

After the course completion, the students are able to

- Learn to simplify complex electric and electronic circuits by applying the KVL and KCL laws
- Identify the optimal loading on machines.
- Analyze the performance of DC machines
- Identify and analyze the performance and operation of semi conducting devices.

S. Tarakalyani (S. TARAKALYANI)

T.V.S. Nagaraj Kumar (T.V.S. Nagarajkumar)

M. Vishnu Prasad

Dr. K. Prakash

BOS/E

VAAGDEVI COLLEGE OF ENGINEERING
(AUTONOMOUS)

ELECTRICAL CIRCUITS

B.Tech : II-Semester (ECE)

L	T	P	C
3	0	0	3

Pre-requisites: None

Course Objectives:

- Designs of this subject to students to have a firm grasp the basics of electrical circuits.
- Emphasis on the basic theorems & network reduction techniques of analysis which helps to develop the ability to design practical circuits used for real time applications.
- A comprehensive coverage topic on single-phase & three-phase AC circuits provides a quick understanding of the concepts underlying the electrical machines analysis.
- Understanding the behavior of networks containing R, L, & C elements, when they suddenly switched on to a source in several practical conditions.
- Detail average of topics relative to filters & attenuators emphasis the students to have best knowledge in electronics circuits.
- Study of 2-port networks in detail, helps the students to analyze the problems in electronic circuits & singles

UNIT-I: Introduction to Electrical Circuits: : Basic definitions, types of elements, types of sources, circuit components, ohm's law, Kirchhoff's laws, inductive networks, capacitive networks, and Network reduction techniques- series, parallel resistive networks and star to delta and delta to star transformation, Source transformation Mesh and Nodal analysis and Simple problems.

Network theorems: Superposition, Reciprocity, Thevenins's, Norton's, Maximum power transfer theorems and simple problems.

UNIT-II:Alternating Quantities: Principle of ac voltage waveforms and basic definition, root mean square and average value of alternating current and voltage, form factor and peak factor, Concept of reactance, Impedance, susceptance and admittance, Phase and phase difference phasor algebra of ac circuits, j-operator, singe phase series and parallel circuits, power in ac circuits, series and parallel Resonance, concept of Band width and Q-factor and illustrative Problems.

UNIT III: Two-port networks: Z, Y, ABCD and H parameters, Conversion from one parameter to other parameters & their relations, Series, Parallel and Cascaded Networks,Characteristic impedance, Image Parameters and illustrative Problems.

UNIT-IV: Steady state and transient analysis: Steady state and transient analysis of series RL, RC & RLC Circuits and parallel RL, RC & RLC Circuits for DC and AC excitation and illustrative Problems.

(Dr. K. Makarandu)

(S. Tara Kalyani)

(T.V.S. Nagaraj kumar)

Dr. K. Makarandu

UNIT-V: Filters: Classification of Filters, Filter Networks, Classification of Pass band and Stop band, Characteristic Impedance in the Pass and stop bands, Constant k Low Pass Filter, High Pass Filter m-derived T-Section Band Pass filter and Band Elimination filter illustrative Problems. Attenuators: Symmetrical Attenuators: T-Type Attenuator, Π (pi) Type Attenuator, Bridged T type Attenuator, Lattice Attenuator and illustrative Problems

Course Outcomes:

After the course completion, the students are able to:

- Learn basics of electrical circuits such as laws, transformation and network theorems and network reduction techniques.
- Generate voltage and current waveforms for 3phase AC circuits and study the relationship between voltage and current in star and delta connections
- Analyze two port networks with ABCD parameters.
- Analyze the steady state and transient operation of series and parallel RLC circuits
- Classify various types for filters and attenuators and study their characteristics

TEXT BOOKS:

1. Engineering Circuit Analysis by Willian Hayt and Jack E.Kemmerlly McGraw Hill Company.
2. Circuits & Networks by A.Sudhakar and Shyammohan S .Palli, Tata Mc.Graw Hill.
3. Electric circuits by A. Chakrabarthy, Dhanipat Rai & Sons.

REFERENCES:

1. Network analysis by ME Van Valkenberg.
2. Engineering circuits analysis by C.L.Wadhwa, New Age International.
3. Electrical circuits by David A.Bell, Oxford University Press
4. Electric circuits theory by K.Rajeswaran, Pearson Education 2004.
5. Electrical Circuit Analysis by Roy Chowdhary