



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



Date: 25-01-2021.

BOARD OF STUDIES MEETING

Minutes of the meeting of Board of studies for Electrical and Electronics Engineering department held on **25-01-2021 at 11:30 A.M.**

Ref: In-Continuation with BOS meeting held on 28/11/2020.

Sl. No.	Name and Address	Designation	Signature
1	Dr. Y. Hareesh Kumar, Associate Professor, Department of EEE, VCE, Warangal	Chairperson	
2	Dr. M. Sailaja Kumari, Professor & Head, EE Dept, NIT, Warangal	Member (Subject Expert)	
3	Dr. S. Tara Kalyani, Professor & Controller of Examination, JNTUH, Hyderabad	Member (University Nominee)	
4	Dr. K. Prakash, Professor, Department of EEE, VCE, Warangal	Member (Faculty)	
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)	
7	Sri. N. Mahender, A.E, TS NPDCL, Warangal	Member (Representative from Alumni)	
8	Sri. P. Sadanandam, Associate Professor, Department of EEE, VCE, Warangal	Member (Faculty)	
9	Dr. B. Durga Hari Kiran Assistant Professor, Department of EEE, VCE, Warangal	Member (Faculty)	
10	Dr. M. Vishnu Prasad Assistant Professor, Department of EEE, VCE, Warangal	Member (Faculty)	

The following decisions are taken:

1. **English for Effective Communication** is introduced in III - Semester to meet the needs of Lateral entry students.
2. **Project Based Learning(PBL)** is introduced for III & IV Semester students to improve their design and implementation skills.
3. Approved the course structure and syllabi of Btech -R20 III & IV semesters.

(BOS-Chairperson)

**VAAGDEVI COLLEGE OF ENGINEERING
(AUTONOMOUS)
ELECTRICAL AND ELECTRONICS ENGINEERING
COURSE STRUCTURE**

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

III-SEMESTER

S.No	Course Code	Title of the Course	L	T	P	Credits
1		Electrical Circuits – II	3	0	0	3
2		Signals and Systems	3	0	0	3
3		Electrical Machines-I	3	0	0	3
4		Electromagnetic Fields	3	0	0	3
5		Python Programming	4	0	0	4
6		English for Effective communication	2	0	0	2
7		Electrical Circuits Lab	0	0	3	1.5
8		Python Programming Lab	0	0	3	1.5
9		Project Based Learning - 1	0	0	2	1
Total Credits			18	0	8	22

IV-SEMESTER

S.No	Course Code	Title of the Course	L	T	P	Credits
1		Power Systems – I	3	0	0	3
2		Electrical Machines-II	3	0	0	3
3		Electrical Measurements and Instrumentation	3	0	0	3
4		OOPS through JAVA	3	0	0	3
5		Analog and Digital Electronics	3	0	0	3
6		Analog and Digital Electronics Lab	0	0	2	1
7		Electrical Machines Lab – I	0	0	3	1.5
8		OOPS through JAVA Lab	0	0	3	1.5
9		Project Based Learning - 2	0	0	2	1
Total Credits			15	0	10	20

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① Reducing Python programming credits to 2
② Reducing Labs credits to 1 for programming Lab

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VAAGDEVI COLLEGE OF ENGINEERING
(AUTONOMOUS)

ELECTRICAL CIRCUITS LAB

B. TECH- III SEM. (EEE)

L/T/P/C
0/0/3 /1.5

Prerequisites: Electrical Circuits-I

Course Objectives:

- This course introduces the basic concept of circuits analysis which is the foundation for all subjects of Electrical engineering.
- Analyze the resonance of series and parallel circuits.

List of Experiments

1. Verification of Kirchhoff's laws (KVL & KCL) .
2. Verification of Thevenin's, Norton's Theorems.
3. Verification of Maximum Power Transfer & Tellegen's Theorems.
4. Verification of Superposition and Reciprocity Theorems.
5. Locus Diagrams of RL and RC Series Circuits.
6. Series and Parallel Resonance.
7. Determination of Open circuit and Short circuit parameters of two port networks.
8. Determination of ABCD parameters of two port networks.
9. Verification of Compensation and Milliman's Theorems.
10. Verification of RMS value of complex wave.

Course Outcomes:

After the completion of this course, the students should be able to

1. Explain the concept of circuit laws
2. Verify network theorems
3. Determine Z, Y and ABCD parameters for a given two port network.
4. Evaluate the time response and frequency response characteristics of RLC series circuit and their resonance conditions.

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ELECTRICAL MACHINES LAB-I

B. TECH- IV SEM. (EEE)

L/T/P/C

0/0/3/1.5

Prerequisites:

Electrical Circuits I & II,
Electro Magnetic Fields,
Electrical Machines – I.

Course Objectives:

1. To introduces concept of rotating machines and principle of the Electromechanical energy conversion
2. To understand functioning of different types of dc machines.
3. To estimate losses and estimation of various dc machines.

List of Experiments

1. Magnetization characteristics of DC shunt generator, determination of critical field resistance and critical speed.
2. Load test on DC shunt generator, determination of its characteristics.
3. Load test on DC series generator, determination of its characteristics.
4. Load test on DC compound generator, determination of its characteristics.
5. Hopkinson's test on DC shunt machines, predetermination of efficiency.
6. Fields test on DC series machines, determination of efficiency.
7. Swinburne's test on DC Shunt Machine, predetermination of its efficiency.
8. Speed control of DC shunt motor.
9. Brake test on DC compound motor, determination of performance curves.
10. Brake test on DC shunt motor, determination of performance curves.

Course Outcomes:

1. Select range of apparatus based on the ratings of DC Machines.
2. Determine Characteristics of DC machines by conducting tests.
3. Evaluate the efficiency of the machine by analyzing test results.
4. Study speed control methods for dc machines.

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**VAAGDEVI COLLEGE OF ENGINEERING
AUTONOMOUS**

ELECTRICAL TECHNOLOGY

B.Tech ECE: III Semester

**L T P C
3 0 0 3**

Pre Requisites: Electrical Circuits

Course Objectives:

In this course it is aimed to introduce to

- Understand the magnetic circuit concepts
- Understand the functioning of different types of DC machines.
- Principle of operation and applications of Transformer.
- Understand the functioning and characteristics of 3-Phase Induction Motor
- Understand the operating principle and applications of AC machines

UNIT-I: Magnetic Circuits: – Faraday's laws of electromagnetic induction – concept of self and mutual inductance – dot convention – coefficient of coupling – Analysis of series and parallel magnetic circuits

UNIT-II: D.C. Machines: Principle of operation – E.M.F Equation, Types of Generators, Magnetization and load characteristics of DC Generators. DC Motors: Types of DC Motors, characteristics of DC motors, Speed Control of DC Shunt Motor, Flux and Armature Voltage control methods.

UNIT-III: Transformers: Principle of Operation of Single Phase transformer, Types, Constructional Features, Phasor Diagram on No Load and Load, Equivalent Circuits, Losses and Efficiency of Transformer and Regulation, OC & SC tests.

UNIT-IV: Three Phase Induction Motor: Production of Rotating Magnetic Field, Constructional features, principle of operation, Torque Equation, Torque – Slip Characteristics, Applications.

UNIT-V: Synchronous Machines: Synchronous Generator and Motor: Constructional Features & Principle of Operation, Applications.

Single Phase Induction Motor: Production of Rotating Field in various types of 1-Phase Motors Split phase, Capacitor Start, Capacitor run, Shaded Pole motors and Applications.

Text Books:

1. Edward Hughes —Electrical & Electronics Technology|| 10th Edition, Pearson Education, 2010.

Reference Books:

1. M.S.Naidu&S.Kamakshaiah, —Introduction to Electrical Engineering|| Tata Mc Graw Hill Ltd, New Delhi.

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2. B.L. Thereja, A.K. Thereja, —Electronics Technology —S.Chand& Company Vol 1 & Vol 2 Ltd 2005 Education.
3. Chakravarthy A. Sudhipanth and Chandan Kumar —Basic Electrical Engg| Tata Mc Graw Hill Ltd, New Delhi.

Course outcomes: After the course completion, the students are able to

- CO1: Study the basics of magnetic circuits and its analysis
- CO2: Understand the principle of operation of DC machines and their applications
- CO3: Analyse the construction, types, performance and its applications
- CO4: Understand the rotating magnetic field, operation and characteristics
- CO5: Understand the operation of AC machines

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