

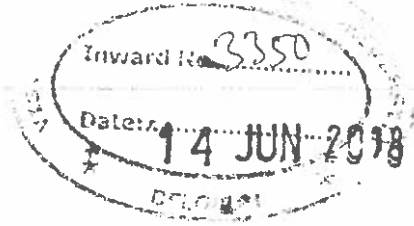
6/7/2018

Visvesvaraya Technological University Webmail :: Regarding final syllabus of Basic Electrical Engineering for first year BE.

EEE

Subject **Regarding final syllabus of Basic Electrical Engineering for first year BE.**

From shobha savanur <srsavanur@yahoo.co.in>  
To Registrar Vtu <registrar@vtu.ac.in>  
Cc VTU Academic <academic.vtu@gmail.com>  
Date 2018-06-07 10:33



- BEE and Lab-29-5-18.docx (~23 KB)
- proceedings of meeting of BOS-EEE 29-5--2018.docx (~14 KB)

Respected Sir,

Good morning. Sir, the meeting of Board of studies for EEE Board was conducted on 29th May 2018 at VTU, Regional center, Bangalore. I am herewith attaching the files for proceedings of the meeting and final syllabus of Basic Electrical Engineering. Based on feedback during workshops at all the places, syllabus is finalized for both theory and lab.

With regards,  
-Dr Shobha Savanur  
Chairperson, BOS- EEE Board  
Prof. and Head, EEE Department,  
BLDEA's CET, Vijayapur

Spl. Officer  
13 JUN 2018

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Proceedings of meeting of Board of Studies for EEE Board held on 29-5-2018 at VTU, Regional Center, Bangalore:

Members Present:

1. Dr. Shobha Savanur, Chairperson, BOS in E&E of VTU, Belagavi & Professor, Dept. of EEE, BLDEA's V.P.Dr. P G Halakatti college of Engineering, Vijayapur.
2. Dr Sudarshan Reddy, Member, BOS in E&E of VTU, Belagavi & Professor, Dept. of EEE, UBDT College of Engineering, Davangere.
3. Dr S.M.Shashidhar, Member, BOS in E&E of VTU, Belagavi & Professor, Dept. of EEE, RYM College of Engineering, Bellary.
4. Dr B.V.Sumangala, Member, BOS in E&E of VTU, Belagavi & Professor, Dept. of EEE, Dr Ambedkar Institute of Technology, Bengaluru.
5. Dr Parimala Ritti, Member, BOS in E&E of VTU, Belagavi & Professor, Dept. of EEE, BNM Institute of Technology, Bengaluru.
6. Dr Abraham George, Member, BOS in E&E of VTU, Belagavi & Professor, Dept. of EEE, M.S. Engineering College , Banagalore.
7. Prof. Keshavamurthy, Professor, Dept. of EEE, Dr Ambedkar Institute of Technology, Bengaluru. Special Invitee.
8. Prof. Y. Pawan Kumar, Professor, Dept. of EEE, Bangalore Institute of Tchnology, Bengaluru- Special Invitee.
9. Dr Bhagvan Sriram, Professor, EEE Dept, Sri Venkateshwara College of Engg., Bengaluru-Special Invitee.
10. Dr G.B.Mukartihal, Professor, Dept. of EEE, Basaveshwar Engineering college, Bagalkot-Special Invitee.

Members not present:

1. Dr. G.H.Kulkarni, Member, BOS in E&E of VTU, Belagavi & Professor, Dept. of EEE, Jain College of Engineering, Belegavi.
2. Dr B.Ramachandra, Member, BOS in E&E of VTU, Belagavi & Professor, Dept. of EEE, PES Engineering College , Mandya.
3. Dr, R. Nagaraja, PRDC Pvt. Ltd, No. 5, 11<sup>th</sup> Cross, II Stage, WOC Road, Bangalore- Special Invitee.

Minutes of the meeting:

Dr Shobha Savanur, chairperson for BOS-EEE, welcomed all the members and the special invitees present for the meeting.

Agenda 1: Finalization of syllabus for Basic Electrical Engg of 1<sup>st</sup> year B.E. for 2018-19 scheme:

Based on the feedback and suggestions by faculty during workshops at Bangalore, Belagavi and Mangalore, members had detailed deliberations. Accordingly the syllabus of 1<sup>st</sup> year Basic Electrical Engineering and Basic Electrical Engineering Laboratory were modified and finalized in the meeting.

Agenda 2: Finalization of syllabus for MTech for 2018-19 scheme:

It was decided to finalize the syllabus for MTech after the no. of credits and electives is finalized in JBOS meeting.

The chairperson thanked the members for active participation in formulating the syllabus of Basic Electrical Engg.

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Subject

**Proceedings of the BOS-EEE meeting and syllabus for Basic Electrical Engg.**

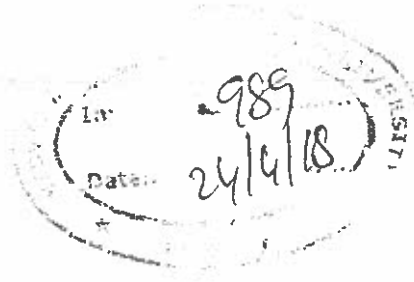
From: shobha savanur &lt;srsavanur@yahoo.co.in&gt;

To: Registrar Vtu &lt;registrar@vtu.ac.in&gt;

Date: 2018-04-24 13:40



- proceedings of meeting of BOS-EEE 17-04-2018.docx (~14 KB)
- Basic Electrical Engineering 2018 scheme.docx (~19 KB)



Respected Sir,

Good morning. Sir, the Board of studies meeting(EEE Board)was conducted on 17th April 2018 at VTU, Belagavi.

I am herewith attaching the files for proceedings of the meeting and the syllabus of Basic Electrical Engineering.

After detailed deliberations, the syllabus of I year Basic Electrical Engineering and Basic Electrical Engineering Laboratory was formulated in the meeting held on 17 - 04 - 2018, at VTU, Belagavi. It was circulated to all the members of EEE Board on 19<sup>th</sup> April and everyone have given their consent. However, BOS members Dr. G.H Kulkarni and Dr. H.R.Sudarshan Reddy have separately mailed the syllabus of Basic Electrical Engineering on 20 - 04 - 2018, proposing certain changes. But sir, these changes are to be discussed in the next board meeting along with the feedback received after publication of the syllabus in VTU website. However, I have included some of the proposed changes in the syllabus attached for your perusal and kind consideration.This is for your kind information.

With regards,

-Dr Shobha Savanur

Chairperson, BOS- EEE Board

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24/4/18



## 18ELE13/18ELE23BASIC ELECTRICAL ENGINEERING

Sub Code: 18ELE13/18ELE23

CIEMarks:40

Hours/ Week:2L +1T = 3 credits

Total Hours: 40

Exam Hours: 03

SEEMarks:60

**Each module is designed for about 6 hours. Around 10 hours is earmarked for tutorial.  
(Total Hours for each module: 8)**

### Module-1

**D.C.Circuits:** Ohm's Law and Kirchhoff's Laws, analysis of series, parallel and series- parallel circuits excited by independent voltage sources. Power and Energy. Illustrative Examples.

**A.C. Fundamentals:** Generation of sinusoidal voltage, frequency of generated voltage, definition and numerical values of average value, root mean square value, form factor and peak factor of sinusoidally varying voltage and current, phasor representation of alternating quantities.

### Module- 2

**A.C.Circuits:** Analysis with phasor diagram, of circuits with R, L, C, R-L, RC, R-L-C for series and parallel configurations. Real power, reactive power, apparent power and power factor. Illustrative Examples.

Three-phase balanced circuits, voltage and current relations in star and delta connections. Measurement of three phase power using two wattmeter method.

### Module - 3

**Single Phase Transformers:** Faradays Laws, self and mutually induced emfs and coefficient of coupling, Necessity of transformer, Principle of operation, Basic parts of transformers. Emf equation, losses, variation in losses with respect to load, efficiency, Condition for maximum efficiency, Illustrative problems on Emf equation and efficiency.

### Module- 4

#### **D.C. Machines:**

Dynamically induced Emf, Fleming's right hand rule. Force on current carrying conductor placed in a magnetic field, Fleming's left hand rule. Basic parts of d.c. machines.

DC Generators: Principle of operation, Expression for induced Emf.

DC motors: Principle of operation, Back Emf, Torque equation, Types of dc motors, Characteristic of dc motors (shunt and series motors only) and Applications.

**Three Phase Synchronous Generators:** Basic parts, Principle of operation, Synchronous speed, Frequency of generated voltage, Emf equation. Concept of winding factor (excluding the derivation of distribution and pitch factors). Illustrative examples on Emf equation.

### Module - 5

**Three Phase Induction Motors:** Generation of rotating magnetic field, Construction and working of a three-phase induction motor, Slip and its significance. Necessity of a starter, starting of motor using stars-delta starter. Illustrative examples on slip calculation.

**Domestic Wiring:** Service mains, meter board and distribution board. Brief discussion on concealed conduit wiring. Two-way and three-way control. Elementary discussion on Circuit protective devices: fuse and Miniature Circuit Breaker (MCB's). Electric shock, precautions against shock. Earthing: Pipe and Plate earthing.

#### **Course Outcomes**

- To understand and analyse D.C and A.C electric circuits.
- To understand the concepts of electromagnetic induction.
- To study the construction and working principle of transformers.
- To study the construction and working principle of d.c.machines.
- To study the construction and working principle of induction motors.
- To introduce the concepts of electrical wiring.

#### **Question paper pattern:**

1. The question paper will have ten questions. Each question is set for 20 marks.
2. There will be 2 questions from each module. Each of the two questions under a module (with a maximum of 3 sub questions), should have a mix of topics under that module.
3. The students have to answer 5 full questions, selecting one full question from each module.

#### **Text Books:**

1. Basic Electrical Engineering, D C Kulshreshtha, Tata McGraw Hill, Revised First Edition.
2. Electrical Technology, E. Hughes International Students 9<sup>th</sup> Edition, Pearson, 2005.
3. Principles of Electrical Engineering & Electronics, V.K. Mehta, Rohit Mehta, S.Chand Publications

#### **Reference Books:**

1. Fundamentals of Electrical Engineering and Electronic, B. L. Theraja, S. Chand & Company Ltd, Reprint Edition 2013.
2. Electrical Engineering Fundamentals, Vincent Del Toro, Pearson, 2<sup>nd</sup> Edition, 2015
3. Basic Electrical Engineering, D. P. Kothari and I. J. Nagrath, Tata McGraw Hill, 2010.
4. Fundamentals of Electrical Engineering, L. S. Bobrow, Oxford University Press, 2011.



## 18ELEL17/18ELEL27 Basic Electrical Engineering Laboratory

Sub Code: 18ELEL17/18ELEL27

CIE Marks: 40

Hours/ Week: 2P = 1 credit

Total Hours: 32

Exam Hours: 03

SEE Marks: 60

Orientation class for an exposure to:

- Resistors, capacitors and inductors, types of wires, measuring instruments – voltmeter, ammeter, wattmeter, multi-meter, oscilloscope, transformer, dc motor, synchronous generator, three phase induction motor etc.
- Basic safety precautions while dealing with electricity.

### List of experiments

1. Verification of KVL and KCL for DC circuits.
2. Measurement of current, power and power factor of incandescent lamp, fluorescent lamp, CFL and LED lamp.
3. Impedance calculation and verification for R-L and R-C circuits- using decade boxes.
4. Load test on a single phase transformer.
5. Voltage and Current relationships of three phase star/delta circuits.
6. Measurement of three phase power using two wattmeter method.
7. Speed load characteristic of a 3 phase induction motor.
8. Two way and three way Control of lamp and formation of truth table.

### Demonstration Experiments (for CIE only):

1. Demonstration of fuse, MCB by creating a fault.
2. Demonstration of cut-out sections of electrical machines (DC machines, Induction machines and synchronous machines).

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### Laboratory Outcomes

- Get an exposure to common electrical components.
- Make electrical connections by wires of appropriate ratings.
- Understand the usage of common electrical measuring instruments.
- Understand the basic functioning of electrical machines.
- Understand two way and three way control of lamp.

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## Proceedings of meeting of Board of Studies for EEE Board held on 17-4-2018 at VTU, Belagavi:

### Members Present:

1. Dr. Shobha Savanur, Chairperson, BOS in E&E of VTU, Belagavi & Professor, Dept. of EEE, BLDEA's V.P.Dr. P G Halakatti college of Engineering, Vijayapur.
2. Dr Sudarshan Reddy, Member, BOS in E&E of VTU, Belagavi & Professor, Dept. of EEE, UBDT College of Engineering, Davangere.
3. Dr. G.H.Kulkarni, Member, BOS in E&E of VTU, Belagavi & Professor, Dept. of EEE, Jain College of Engineering, Belegavi.
4. Dr S.M.Shashidhar, Member, BOS in E&E of VTU, Belagavi & Professor, Dept. of EEE, RYM College of Engineering, Bellary.
5. Prof. Y. Pawan Kumar, Professor, Dept. of EEE, Bangalore Institute of Tchnology, Bengaluru-Special Invitee.
6. Dr G.B.Mukartihal, Professor, Dept. of EEE, Basaveshwar Engineering college, Bagalkot-Special Invitee.

### Members on Leave:

1. Dr B.V.Sumangala, Member, BOS in E&E of VTU, Belagavi & Professor, Dept. of EEE, Dr Ambedkar Institute of Technology, Bengaluru.
2. Dr Parimala Ritti, Member, BOS in E&E of VTU, Belagavi & Professor, Dept. of EEE, BNM Institute of Technology, Bengaluru.
3. Dr Abraham George, Member, BOS in E&E of VTU, Belagavi & Professor, Dept. of EEE, M.S. Engineering College , Banagalore.
4. Dr B.Ramachandra, Member, BOS in E&E of VTU, Belagavi & Professor, Dept. of EEE, PES Engineering College , Mandya.
5. Dr Bhagvan Sriram, Professor,EEE Dept, Sri Venkateshwara College of Engg., Bangaluru-Special Invitee
6. Dr, R. Nagaraja, PRDC Pvt. Ltd, No. 5,11<sup>th</sup> Cross,II Stage, WOC Road, Bangalore- Special Invitee.
7. Prof. Keshavamurthy, Professor, Dept. of EEE, Dr Ambedkar Institute of Technology, Bengaluru. Special Invitee.

### Minutes of the meeting:

Dr Shobha Savanur, chairperson for BOS-EEE, welcomed all the members and the special invitees present for the meeting on 17-04-2018 at VTU, Belagavi(PG South Block).

Agenda 1: Finalization of syllabus for Basic Electrical Engg of 1<sup>st</sup> year B.E. for 2018-19 scheme:

After detailed deliberations and interactions, the syllabus of 1<sup>st</sup> year Basic Electrical Engineering and Basic Electrical Engineering Laboratory was formulated in the meeting.

Agenda 2: Finalization of syllabus for MTech for 2018-19 scheme:

Since, many members were not present, it was decided to take up the finalization of syllabus of MTech in the next meeting.

The chairperson thanked the members for active participation in formulating the syllabus of Basic Electrical Engg.