

Dr. Ambedkar Institute of Technology
Department of Electrical and Electronics Engineering

The NAAC documents enclosed are verified and approved.

Jayaramulu G
HOD, DEPT OF ELECTRICAL AND ELECTRONICS ENGG.
Dr. Ambedkar Institute of Technology
Bengaluru-560056
5/11/22

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

Minutes of BOS meeting

Chairman welcomed all the members of the Board of Studies in Electrical and Electronics Engineering. The meeting was convened on 19.06.2018 at 10.00 a.m in Research Laboratory.

To make the courses more relevant, the BOS shall also do necessary changes and up gradation of all the courses/training programmes proposed by the Course Co-ordinators. In addition, BOS will also explore the possibilities for conducting few courses in collaborative manner with some other organizations. BOS may offer suggestions for Identification thrust areas for conduction of workshop /seminar/technical seminars during 11th Plan period. A pre-BOS meeting was conducted with Student Representatives.

Agenda:

1. Finalizing the Scheme and Syllabus of UG for 2018-19 batch.
2. Reviewing the Scheme and Syllabus of existing batches.
3. Approval of Panel of examiners, Paper Setters, Practical Examination and Theory Valuation.
4. Finalizing the Scheme and Syllabus of PG (Power Electronics) for 2018-19 batch and to revise the Scheme and Syllabus of existing batches.

Minutes:

- Chairperson gave introduction about the EEE Dept. and Academic Autonomy.
- The preliminary BOS meetings, along with students of UG and PG programs. The proposals put forth by the students were examined and the relevant items were included in the draft syllabus to be approved by the members, BOS.
- The members unanimously approved the following academic reforms :

RESOLUTIONS: UG

The following changes are applicable to 2018 batch.

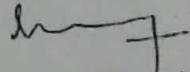
1. Two machine courses- Electrical Machines-I & Electrical Machines-II are mandatory for electrical course.
2. Board advised to make Modern control theory as an elective which was made as core in pre BOS meeting.
3. They advised to shift Generation, Transmission and Distribution course for higher semester.

4. Field theory course must be completed before doing Generation, Transmission and Distribution.
5. They mentioned to have theories and corresponding labs if any in same semester.
6. Management and humanitarian courses and/or credits should be reduced to include more number of core subjects.
7. They advised to reduce the credits of main project and include that in main subjects.
8. Classes not to be allotted for final year students on one or two days in a week to facilitate the students to carry out their project in industries.
9. Either the courses or credits need not be made compulsory but overall credits should be maintained as per the specified (175).
10. Operation & Research and PLC as core subjects to be included in the syllabus.

RESOLUTIONS: PG

1. Thesis to be given more weightage than internship as thesis plays a key role in placement for students unlike undergraduates.
2. In the first sem there should be an elective in place of miniproject / Industrial visit
3. Technical seminar is mandatory in the first semester only and has to be a credit course.
4. Second semester has to have a mini project which is evaluated by a committee of 4 to 5 members.
5. Final semester has to have only project and should not be clubbed with any other theory subjects.
6. Course can be clubbed with internship during third semester only.
7. Number of contact hours/week should be equal to the credits mentioned.

Further the members authorized the chair person to make appropriate changes whenever required. Chairperson concluded the meeting with vote of thanks.



Dr. Jyoti P Koujalagi
Professor and Head
Department of Electrical Electronics Engg.
Dr. AIT, Bengaluru



DR. AMBEDKAR INSTITUTE OF TECHNOLOGY, BENGALURU
(An Autonomous Institution Affiliated to VTU, Belgaum)

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

LIST OF BOARD OF STUDIES EEE MEMBERS FOR THE YEAR 2017-2019

ATTENDANCE LIST - 19.06.2018

| Sl.No | Name | Signature |
|-------|---|-----------|
| 1. | Dr. Jyoti P Koujalagi | |
| 2. | Dr. Suryanarayana doolla, IIT Mumbai | |
| 3. | Dr. Satish IISc, Bengaluru | |
| 4. | Dr. Pradip Kumar Dixit, MSRIT, Bengaluru | |
| 5. | Dr. Saikumar-NIE, Mysuru | |
| 6. | Dr. Ravishankar Dixit, BMSCE, Bengaluru | |
| 7. | Dr. Balaram, PRDC, Bengaluru | ABSENT |
| 8. | Mr. Chetan Rajdev, Deputy GM, Bosch Rexorth, Bengaluru | |
| 9. | Mr. Srikanth Kashyap, Director, JVS Electronics, Bengaluru | ABSENT |
| 10. | Mr. Srinivas BT, Software Engineer, IBM India Pvt. Ltd, Bengaluru | ABSENT |
| 11. | Dr. B.V. Sumangala, Professor | ABSENT |
| 12. | Dr. Shankarlingappa.C.B Professor | |
| 13. | Mr. Eranna, Asso. Prof. | |
| 14. | Mr. Dayananda T.B, Asso. Prof. | |
| 15. | Mr. Govindaraju H.V, Asso. Prof. | |
| 16. | Mr. Vasudevamurthy S, Asso. Prof. | |
| 17. | Ms. Nalini S, Asso. Prof. | |
| 18. | Ms. Arpitha Raju | ABSENT |
| 19. | Mr. Keshava Murthy, Visiting Professor | |
| 20. | Dr.Jayaramaiah G V, Professor | |
| 21. | Mr. MukundaSwamy, Asst. Prof. | |
| 22. | Mrs. Harini Vaikund, Asst. Prof. | |
| 23. | Mrs. Dhanyavathi., Asst. Prof. | |
| 24. | Mrs. Pankaja S, Asst. Prof. | |
| 25. | Mrs. Deepti S.S, Asst. Prof. | |



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Agenda 3: To frame, discuss and approve the syllabus of Basic Electrical Engineering and Basic Electrical Lab for the I/II Semester for the academic year 2020-21.

The Chairman presented the Syllabus of the Basic Electrical Engineering and Basic Electrical Lab for the I/II Semester students of all the branches of Engineering for the academic year 2020-21. Accordingly, a syllabus for the I/II Semesters was presented and placed before the Board Of Studies Members for their opinion and approval.

Resolution: The BOS members went through the Syllabus of Basic Electrical Engineering and Basic Electrical Lab is discussed in length about the various aspects of the syllabus. After incorporation of the changes as suggested by the members of BOS, the **Basic Electrical Engineering and Basic Electrical Lab syllabus** for I/II Semesters was approved for the academic year 2020-21.

Agenda 4: To frame, discuss and approve the Scheme for III and IV Semester under Choice Based Credit System and Outcome Based Education System for 4 Years Course in Electrical and Electronics Engineering for the academic year 2020-21.

The BOS Chairman presented the Scheme and Syllabus for the III and IV Semester under Choice Based Credit System and Outcome Based Education System for 4 Years Course in Electrical and Electronics Engineering for the academic year 2020-21 and placed before the Board Of Studies Members for their opinion and approval.

Resolution: The BOS members went through the draft Schemes thoroughly for the III to IV Semester and discussed in length about various aspects of the scheme and syllabus. BoS members were suggested to incorporate the syllabus for virtual lab, inclusion of open source/Licensed software tools for the theory/laboratory. They also suggested to change in the syllabus with the mapping of Programme specific outcomes and course outcomes, the BOS members were approved the **Scheme and syllabus** for the III and IV Semesters for the academic year 2020-21 under Outcome Based Education System and Choice Based Credit System.

Agenda 5: To frame, discuss and approve the Scheme and Syllabus for V to VIII Semester under Choice Based Credit System and Outcome Based Education System for 4 Years Course in Electrical and Electronics Engineering for the academic year 2020-21 and syllabus of the Institute electives offered to the other department students of the college. The List of subjects for the Honours degree course were also placed before the committee members and also the rules and regulations of the Honour's degree were placed



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before the committee members.

Chairman presented the Scheme and Syllabus for V to VIII Semester for 4 Years Course Electrical and Electronics Engineering for the academic year 2020-21 and the list of subjects for the Honour degree from V semester onwards were placed before the Board Of Studies Members for their opinion and approval.

Resolution: The BOS members went through the draft Schemes and Syllabus thoroughly for the V to VIII Semester applicable to 2018-2019 Batch and 2017-18 Batch respectively and discussed in length about various aspects of the syllabus of theory and laboratory. After incorporating the following subjects: Smart Grid Technology, and Electrical Vehicle subjects as suggested by the committee members of BOS. The Scheme and Syllabus for V to VIII Semesters was approved for the academic year 2020-21. The committee have also approved the syllabus of the Institute/Open electives for the academic year 2020-21. The BOS members were approved the inclusion of subjects for the Honours degree courses from V semester onwards as per the regulations laid down by the Dr AIT and VTU

Agenda 6: To prepare the panel for the Board of Examiners of the Electrical and Electronics Engineering to scrutinize the Question papers of the Semester End Examination for the AY: 2020-21

The BOS Chairman presented the list of Examiners to scrutinize the question papers for the Semester Examination for the academic year 2020-21

Resolution: The list of the Board of Examiners were approved for the AY 2020-21.

Agenda 7: To prepare the panel of Board of examiners for the evaluation and scrutinizing the Question papers in the department for the academic year 2020-21.

The Chairman of the BOS in E & EE department was presented the proposed the list panel of Examiners pertaining to UG in Electrical and Electronics Engineering department for the academic year 2020-21.

Resolution: The List of Panel of Examiners were approved based on the recommendation of internal members and the Chairman of BOS for the academic year 2020-21.

Agenda 8: To frame the list of subject equivalence for the academic year 2020-21.



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Resolution: The members of the BOS approved the subject equivalence for the students joined before the AY 2018-19, the BOS members were discussed in length about various aspects of the subject equivalence and approve the same.

Agenda 9: Inclusion of Virtual Lab for the academic year 2020-21.

The Chairman of the BOS in Electrical and Electronics Engineering presented the proposed subjects of Virtual Lab to UG in Electrical and Electronics Engineering for the academic year 2020-21.

Resolution: The members of the BOS approved the subjects of Virtual Lab for the academic year 2020-21 onwards after discussing in length about various aspects of the virtual lab. External BOS members expressed their opinion and appreciated the inclusion of the Virtual lab for UG courses

Agenda 10: Inclusion of Tools and Methods for ONLINE or Blended learning for the AY 2020-21

The External BOS members suggested to introduce, the Tools and Methods for ONLINE or Blended learning to UG in Electrical and Electronics Engineering for the academic year 2020-21.

Resolution: The members of the BOS approved the Tools for ONLINE/FLIPPED LEARNING ENVIRONMENT such as MICROSOFT TEAM, ZOOM, EDMODO, GOOGLE CLASS ROOM, EPILOGUE, CANVAS and CISCO WEBEX MEETING and also the members of BOS suggested to use the softwares like Sequel, Scilab, PSIM, Matlab, MiPower, PSCAD, Ansys, Open RTL for simulations for the academic year 2020-21 onwards. Also discussed in length about various aspects of the blended learning. External BOS members Expressed and apricated the inclusion of the blended learning for the UG courses

Finally, the meeting of Board of studies was concluded with the Chairman of the BOS in Electrical and Electronics Engineering thanking to all the members (Internal and External) of the BOS and Co-opted members for their active participation in the deliberations of the meeting and giving inputs for the progress of the department.

The following BOS members were presented for the BOS Meeting on Saturday, the 8th August 2020.

1. Dr.G.V.Jayaramaiah, Professor and HOD, Chairman of BOS
2. Dr..Sumathi, Professor and HOD, EEE, RNSIT, Bengaluru and VTU Nominee
3. Dr. Suryanarayanadoolla, Professor, Energy systems Engineering, IIT Bombay and Subject Expert
4. Dr. Pradeep Kumar Dixit, Professor and Head, Electrical Engineering, MSRIT, Bengaluru-19 and Subject Expert



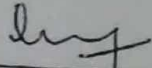
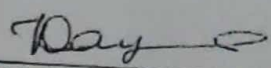
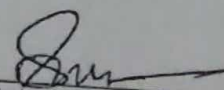
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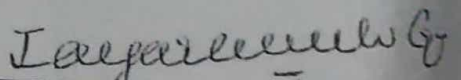
5. Dr.P.S. Puttaswamy, Professor and Head, Department of EEE, GSS, Mysore and Expert
6. Professor Dilip Kumar , HOD EEE at IET Ayodhya, UP and Subject Expert
7. Mr.Srinivas.B.T.,Software Engineer, IBM India, Bengaluru and Post Graduate Student Nominee
8. Mr. Ramachandra, Green Automation Pvt. Ltd, Bengaluru and Industry Representative
9. Mr. Arun Kumar, Electrono Solution Pvt Ltd.Bengaluru and Industry Representative
10. Dr.Eranna, Associate Professor and BOS Member
11. Dr.Jyoti P Koujalagi, Professor and BOS Member
12. Mr.T.B.Dayananda, Associate Professor and BOS Member
13. Dr.H.V.Govindaraju, Associate Professor and BOS Member
14. Dr S.Vasudevamurthy, Associate Professor and BOS Member
15. Ms.Nalini. S, Associate Professor and BOS Member
16. Dr. Shankaralingappa.C.B., Professor and BOS Member
17. Ms Arpitha Raju, Assistant Professor and BOS Member

Members Absent:

1. Mr. Guruswamy, General Manager, IE Power Technologies, Bengaluru and Industry Representative
2. Dr.Satish, Professor, IISc, Bengaluru and Subject Expert

Signature of Coordinators

1. 
Dr.Jyoti P Koujalagi
2. 
Mr.T.B.Dayananda
3. 
Harini Vaikund



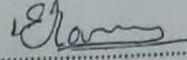
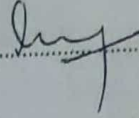
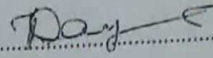
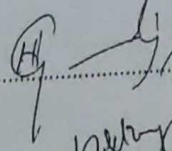
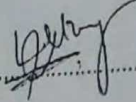
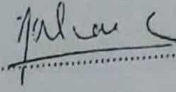
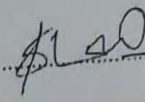
Signature of the BOS Chairman

Dr.G.V. Jayaramaiah



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Department of Electrical & Electronics Engineering

| Name of the BOS Member | Signature of the BOS Member with date |
|---|---|
| 1. Dr.Eranna, Associate Professor |  |
| 2. Dr.Jyoti P Koujalagi, Professor |  |
| 3. Mr.T.B.Dayananda |  |
| 4. Dr.H.V.Govindaraju, Associate Professor |  |
| 5. Dr.S.Vasudevamurthy, Associate Professor |  |
| 6. Ms.Nalini.S, Associate Professor |  |
| 7. Dr.Shankarlingappa.C.B., Professor |  |
| 8. Arpitha Raju | |

EEE-PG-1.2.1

| Name of the Course | Course Code | Activities/Content with direct bearing on Employability/ Entrepreneurship/ Skill development | Nature of Employment |
|---|-------------|--|----------------------------|
| DSP applications to drives | EPE423 | Employability | Embedded Software Engineer |
| Electric Vehicle Technology | EPE253 | Employability | Design Engineer |
| Power quality enhancement using custom power devices. | EPE421 | Employability | System Engineer |
| Multi-Terminal DC Grids | 20EPE253 | Employability | Service Engineer |
| Uninterruptible Power Supply | 20EPE262 | Employability | Service Engineer |

SCHEME OF TEACHING AND EXAMINATION - 2016-17
M.Tech POWER ELECTRONICS (EPE)
 (Total number of credits prescribed for the programme - 100)

III SEMESTER

| Sl. No | Subject Code | Title | Teaching Hours /Week | | Duration in hours | Examination | | | Credits |
|--------------|--------------|--|----------------------|---|-------------------|-------------|----------------------------|-------------|-----------|
| | | | Theory | Practical/ Field work/ Assignment | | I.A. Marks | Theory/ Practical Marks | Total Marks | |
| 1 | EPE31 | Seminar / Presentation on Internship. (After 8 weeks from the date of commencement) | -- | -- | -- | 25 | -- | 25 | 20 |
| 2 | EPE32 | Report on Internship | -- | -- | -- | 50 | -- | 50 | |
| 3 | EPE33 | Viva-Voce of Internship | -- | -- | -- | -- | 50 | 50 | |
| 4 | EPE34 | Project phase -1 | -- | -- | -- | 25 | -- | 25 | 2 |
| TOTAL | | | -- | -- | -- | 100 | 50 | 150 | 22 |

SCHEME OF TEACHING AND EXAMINATION - 2016-17
M.Tech POWER ELECTRONICS (EPE)
 (Total number of credits prescribed for the programme - 100)

IV SEMESTER

| Sl. No | Subject Code | Title | Teaching Hours /Week | | Duration in hours | Examination | | | Credits |
|--------------|--------------|-------------------------|----------------------|---|-------------------|-------------|----------------------------|-------------|-----------|
| | | | Theory | Practical/ Field work/ Assignment | | I.A. Marks | Theory/ Practical Marks | Total Marks | |
| 1 | EPE41 | HVDC power Transmission | 04 | -- | 03 | 30 | 70 | 100 | 4 |
| 2 | EPE42 | Elective - 3 | 04 | -- | 03 | 30 | 70 | 100 | 4 |
| 3 | EPE43 | Project phase -2 | -- | -- | -- | 100 | - | 100 | 18 |
| 4 | EPE44 | Project and Viva-Voce | -- | -- | 03 | -- | 100 + 100 | 200 | |
| TOTAL | | | 08 | -- | 09 | 160 | 340 | 500 | 26 |

Elective - 3

| Subject Code under EPE42X | Title |
|---------------------------|---|
| EPE421 | Power quality enhancement using custom power devices. |
| EPE422 | PWM converters and applications |
| EPE423 | DSP applications to drives |

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(An autonomous Institution, Aided by Govt. Of Karnataka, Affiliated to VTU, Accredited by NAAC with A Grade)

Department of Electrical and Electronics Engineering

Batch(2018-20)

**SCHEME OF TEACHING AND EXAMINATION (Autonomous) for the Academic year 2020-21
M.Tech. in POWER ELECTRONICS (EPE)**

II semester

| Sl. No. | Sub Code | | Subject Title | Teaching Department | Teaching hours per week | | | Maximum Marks allotted | | | Examination Credits | |
|--------------|----------|----------|--|---------------------|-------------------------|-------------------------------------|---------------------|------------------------|------------|------------|---------------------|-----------|
| | | | | | Lecture | Tutorial/ Seminar/ Assignment | Practical / Project | Duration in Hours | CIE | SEE | | Total |
| 1. | PC | 18EPE21 | AC and DC Drives | EEE | 03 | 00 | 00 | 03 | 50 | 50 | 100 | 03 |
| 2. | PC | 18EPE22 | Switched Mode Power Conversion | EEE | 03 | 00 | 00 | 03 | 50 | 50 | 100 | 03 |
| 3. | PC | 18EPE23 | Power Electronics system design using linear ICs | EEE | 03 | 00 | 00 | 03 | 50 | 50 | 100 | 03 |
| 4. | PC | 18EPE24 | FACTS Controllers | EEE | 03 | 00 | 00 | 03 | 50 | 50 | 100 | 03 |
| 5. | PE | 18EPE25X | Elective - 2 | EEE | 03 | 00 | 00 | 03 | 50 | 50 | 100 | 03 |
| 6. | PC | 18EPEM27 | Research methodologies | MBA | 02 | 00 | 00 | 03 | 50 | 50 | 100 | 02 |
| 7. | PC | 18EPEL26 | Power Electronics Laboratory - 2 | EEE | 00 | 00 | 03 | 03 | 50 | 50 | 100 | 02 |
| 8. | PC | 18EPEM28 | Mini Project / Industrial Visit /Field Work | EEE | 00 | 02 | 00 | 00 | 50 | - | 50 | 02 |
| Total | | | | | 17 | 02 | 03 | 27 | 400 | 350 | 750 | 21 |

| Professional Elective II(Credits-03) | | |
|--------------------------------------|--------------|--|
| Sl.No | Subject Code | Name of the Subject |
| 1 | 18EPE251 | Electromagnetic Compatibility in Power Electronics |
| 2 | 18EPE252 | Modelling and Analysis of Electrical Machines |
| 3 | 18EPE253 | Electric Vehicle Technology |

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(An autonomous Institution, Aided by Govt. Of Karnataka, Affiliated to VTU, Accredited by NAAC with A Grade)

Department of Electrical and Electronics Engineering

Batch(2020-22)

SCHEME OF TEACHING AND EXAMINATION (Autonomous) for the Academic year 2020-21
M.Tech. In POWER ELECTRONICS (EPE)

II semester

| Sl. No. | Sub Code | Subject Title | Teaching Department | Teaching hours per week | | | Maximum Marks allotted | | | Examination Credits | | |
|--------------|----------|---------------|---|-------------------------|-----------------------------|---------------------|------------------------|-----------|------------|---------------------|------------|-----------|
| | | | | Lecture | Tutorial/Seminar/Assignment | Practical / Project | Duration in Hours | CIE | SEE | | Total | |
| 1. | PC | 20EPE21 | AC and DC Drives | EEE | 03 | 00 | 00 | 03 | 50 | 50 | 100 | 03 |
| 2. | PC | 20EPE22 | Switched Mode Power Conversion | EEE | 03 | 00 | 00 | 03 | 50 | 50 | 100 | 03 |
| 3. | PC | 20EPE23 | Power Electronics System Design Using Linear ICs | EEE | 03 | 00 | 00 | 03 | 50 | 50 | 100 | 03 |
| 4. | PC | 20EPE24 | HVDC power Transmission | EEE | 03 | 00 | 00 | 03 | 50 | 50 | 100 | 03 |
| 5. | PE | 20EPE25X | Professional Elective - III | EEE | 03 | 00 | 00 | 03 | 50 | 50 | 100 | 03 |
| 6. | PE | 20EPE26X | Professional Elective - IV | EEE | 03 | 00 | 00 | 03 | 50 | 50 | 100 | 03 |
| 7. | PC | 20RM27 | Research Methodology | MBA | 02 | 00 | 00 | 03 | 50 | 50 | 100 | 02 |
| 8. | PC | 20EPEL28 | Power Electronics Laboratory - II | EEE | 00 | 00 | 03 | 03 | 50 | 50 | 100 | 02 |
| 9. | PC | 20EPEP29 | Project Work Phase - I (Presentation of Synopsis) | EEE | 00 | 00 | 06 | 03 | 50 | 00 | 50 | 02 |
| Total | | | | | 20 | 00 | 09 | 27 | 450 | 400 | 850 | 24 |

| Professional Elective III(Credits-03) | | | Professional Elective IV(Credits-03) | | |
|---------------------------------------|--------------|--|--------------------------------------|--------------|------------------------------|
| Sl.No | Subject Code | Name of the Subject | Sl.No | Subject Code | Name of the Subject |
| 1 | 20EPE251 | Electromagnetic Compatibility in Power Electronics | 1 | 20EPE261 | Power quality |
| 2 | 20EPE252 | FACTS Controllers | 2 | 20EPE262 | Uninterruptible Power Supply |
| 3 | 20EPE253 | Multi-Terminal DC Grids | 3 | 20EPE263 | DSP applications to drives |