

**Minutes of Board of Studies (BoS) Meeting**  
**Department of Electrical Engineering**  
**School of Technology**  
**Pandit Deendayal Petroleum University**

---

**Date:** 09/06/2020  
**Time:** 12:30 p.m. – 3:15 p.m.  
**Platform:** Zoom Video App

Board of Studies Meeting, Department of Electrical Engineering, Faculty of Engineering and Technology (FoET), Pandit Deendayal Petroleum University was held on 09/6/2020, Tuesday. Following BoS members were present in online meeting.

Dr. Praghmesh Bhatt	Chairman – BoS	Head of Electrical Engineering	
Dr. Amit Sant	Internal Member 1	Assistant Professor	
Dr. V.S.K.V. Harish	Internal Member 2	Assistant Professor	
Ms. Meera Karamta	Internal Member 3	Assistant Professor	
Dr. Bhinal Mehta	Invitee	Assistant Professor	
Dr. D. M. Parikh	Invitee	Dean, FoET, PDPU	
Dr. Bhim Singh	Academic Member 1	Chair Professor Electrical Engineering, IIT-Delhi	
Dr. Naran Pindoriya	Academic Member 2	Associate Professor Electrical Engineering, IIT-Gandhinagar	
Mr. B.B. Mehta	Industry Member 1	Director State Load Dispatch Center, Bhuvneshwar	
Mr. Vinod Patel	Industry Member 2	DGM (R&D) Amtech Electronics	

## Initiation:

Dr. Praghness Bhatt welcomed and introduced all the members of Board of Studies. He also briefed about the programs offered by School of Technology and Electrical Engineering Department.

## Agenda, Suggestion & Resolutions for B. Tech: Electrical Engineering

<b>Agenda</b> A.01	To review and approve the new curriculum structure with Teaching and Examination scheme, to be implemented w.e.f. ACY: 2020-2021																																																																											
	The academic architecture of B. Tech program is completely revised with the objectives to propose total credits in range of 160-164. Based on the guideline of Academic Architecture Committee, an academic architecture is revised with appropriate weightage for Humanities, Basic Science, Engineering Science, Professional Core, Core Electives, Open Electives, Industry 4.0 courses and Project/Internships. The summary of the academic architecture of B. Tech program is given below. The complete academic structure for B. Tech Electrical Engineering given in <b>Annexure I</b> .																																																																											
<table border="1"><thead><tr><th>Code</th><th>Component</th><th>Lecture</th><th>Tutorial</th><th>Practical</th><th>Hrs</th><th>Credits</th></tr></thead><tbody><tr><td>HSC</td><td>Humanities &amp; Social Science Including Management Courses</td><td>4</td><td>0</td><td>10</td><td>14</td><td>10</td></tr><tr><td>BSC</td><td>Basic Science Courses</td><td>15</td><td>3</td><td>4</td><td>22</td><td>20</td></tr><tr><td>ESC</td><td>Engineering Science Courses including Workshop, drawing, Basic of Electrical, Basic of Mechanical, Computer etc.</td><td>13</td><td>0</td><td>18</td><td>31</td><td>22</td></tr><tr><td>IND</td><td>Industry 4.0 Course</td><td>2</td><td>0</td><td>2</td><td>4</td><td>3</td></tr><tr><td>PC</td><td>Professional Core Courses</td><td>47</td><td>0</td><td>24</td><td>71</td><td>59</td></tr><tr><td>CE</td><td>Professional Elective Courses related to chosen specialization</td><td>15</td><td>0</td><td>10</td><td>25</td><td>20</td></tr><tr><td>OE</td><td>Open Elective Subjects from Other technical / emerging subjects</td><td>12</td><td>0</td><td>0</td><td>12</td><td>12</td></tr><tr><td>Project</td><td>Project work, Seminar or Internship in Industry or elsewhere</td><td>0</td><td>0</td><td>26</td><td>26</td><td>16</td></tr><tr><td colspan="2"><b>Total</b></td><td><b>108</b></td><td><b>3</b></td><td><b>94</b></td><td><b>205</b></td><td><b>162</b></td></tr></tbody></table>							Code	Component	Lecture	Tutorial	Practical	Hrs	Credits	HSC	Humanities & Social Science Including Management Courses	4	0	10	14	10	BSC	Basic Science Courses	15	3	4	22	20	ESC	Engineering Science Courses including Workshop, drawing, Basic of Electrical, Basic of Mechanical, Computer etc.	13	0	18	31	22	IND	Industry 4.0 Course	2	0	2	4	3	PC	Professional Core Courses	47	0	24	71	59	CE	Professional Elective Courses related to chosen specialization	15	0	10	25	20	OE	Open Elective Subjects from Other technical / emerging subjects	12	0	0	12	12	Project	Project work, Seminar or Internship in Industry or elsewhere	0	0	26	26	16	<b>Total</b>		<b>108</b>	<b>3</b>	<b>94</b>	<b>205</b>	<b>162</b>
Code	Component	Lecture	Tutorial	Practical	Hrs	Credits																																																																						
HSC	Humanities & Social Science Including Management Courses	4	0	10	14	10																																																																						
BSC	Basic Science Courses	15	3	4	22	20																																																																						
ESC	Engineering Science Courses including Workshop, drawing, Basic of Electrical, Basic of Mechanical, Computer etc.	13	0	18	31	22																																																																						
IND	Industry 4.0 Course	2	0	2	4	3																																																																						
PC	Professional Core Courses	47	0	24	71	59																																																																						
CE	Professional Elective Courses related to chosen specialization	15	0	10	25	20																																																																						
OE	Open Elective Subjects from Other technical / emerging subjects	12	0	0	12	12																																																																						
Project	Project work, Seminar or Internship in Industry or elsewhere	0	0	26	26	16																																																																						
<b>Total</b>		<b>108</b>	<b>3</b>	<b>94</b>	<b>205</b>	<b>162</b>																																																																						
<b>Suggestions Received:</b> <ul style="list-style-type: none"><li>• The overall academic architecture of B. Tech program is well designed with appropriate weightage to courses in different categories.</li><li>• The introduction of open electives and core electives give more choices to students to build expertise in their field of interest.</li><li>• The contact hours in the first semester are quite high and should be addressed at FoET level.</li><li>• The course on the power electronics should be addressed at second year level.</li><li>• Looking to the good experimental facility available in Department, a course on High Voltage Engineering can be grouped in Professional Core Courses.</li></ul>																																																																												


	<ul style="list-style-type: none"> <li>• Instead of keeping any course as pre-requisite course, it is suggested to highlight important contents for pre-requisite. So, students will have more flexibility to choose any course from the core elective basket.</li> <li>• It has been suggested to include topics forecasting and scheduling of renewable sources, electricity markets, recent regulations, norms and standards, merit order scheduling and dispatch, PMU/WAMS in appropriate courses. Er. B B Mehta shared the detail list of topics which are very important for utility operation. Refer <b>Annexure II</b>.</li> <li>• Computer Aided Design is suggested to incorporate in Electrical Machine Design course.</li> </ul> <p><b>Resolution A.01:</b></p> <ul style="list-style-type: none"> <li>• The proposed academic architecture given in Annexure I is critically reviewed and approved.</li> <li>• The suggested topics by the external members will be incorporated in appropriate courses in subsequent BoS meeting.</li> </ul>
<b>Agenda A.02</b>	<p>To review and approve the syllabus of the courses for First Year (Semester I and II) as per new curriculum structure, to be implemented w.e.f. ACY: 2020-2021</p> <p>The course on Elements of Electrical Engineering offered by Electrical Engineering has been reviewed.</p> <p><b>Resolution A.02:</b></p> <p>The course on Elements of Electrical Engineering offered by Electrical Engineering has been reviewed and approved. <b>Refer Annexure III.</b></p>
<b>Agenda A.03</b>	<p>To review and approve the course structure and syllabus of the Semester – VII<sup>th</sup> and VIII<sup>th</sup>, to be implemented w.e.f. academic year 2020-2021 (2017 Batch)</p> <ul style="list-style-type: none"> <li>▪ The course structure with Teaching and Examination scheme of B.Tech. Semester-VII and VIII to be implemented w.e.f. academic year 2020-21 (2017 Batch) is reviewed.</li> <li>▪ Laboratory of 2 Hrs on “Power System Modelling and Simulation” is suggested incorporate in VII<sup>th</sup> Semester.</li> </ul> <p><b>Resolution A.03:</b></p> <ul style="list-style-type: none"> <li>▪ The modified course structure and syllabus of the Semester – VII<sup>th</sup> and VIII<sup>th</sup> with the incorporation of suggested changes have been approved and given in <b>Annexure IV</b>.</li> </ul>
<b>Agenda A.04</b>	<p>Discussion on effective implementation of Outcome Based Education (OBE) and review of vision &amp; mission of department, POs, PEOs, PSOs</p> <p>Dr Bhinal Mehta, NBA – Coordinator of Department briefed about the progress of NBA activities. The department has submitted pre-qualifier for NBA. The conveners have been appointed for different criteria and maintain the records. The framework has been decided to evaluate COs, POs, PEOs and PSO in line with Department vision and mission.</p>

Agenda A.05	To assess the quality of question papers of UG programs for December 2019 End Semester Examination
	The question papers submitted by course coordinators for End Semester Examination – December 2019 have been reviewed by internal BoS members and have found satisfactory.


**Agenda, Suggestion & Resolutions for M. Tech: Electrical Engineering (Power Systems)**

Agenda A.06	To review and approve the new curriculum structure with teaching and Examination scheme, to be implemented w.e.f. ACY: 2020-2021
	<p><b>Suggestions Received:</b></p> <ul style="list-style-type: none"> <li>• The overall academic architecture of M. Tech program is well designed.</li> <li>• Core and open electives more relevant with the field of specialization.</li> <li>• The title of few courses should be revisited in order to reflect proper content of the course.</li> </ul> <p><b>Resolution A.06:</b></p> <ul style="list-style-type: none"> <li>• The new curriculum structure with Teaching and Examination scheme for M. Tech, to be implemented w.e.f. ACY: 2020-2021 has been approved and given in <b>Annexure V</b>.</li> </ul>
Agenda A.07	To review and approve the syllabus of First Year (Semester I and II) as per new curriculum structure, to be implemented w.e.f. ACY: 2020-2021 (2020 Batch)
	<p><b>Resolution A.07:</b></p> <ul style="list-style-type: none"> <li>• The syllabus of M. Tech First Year (Semester I and II) as per new curriculum structure, to be implemented w.e.f. ACY: 2020-2021 (2020 Batch) is reviewed and approved. Refer <b>Annexure VI</b>.</li> </ul>
Agenda A.08	Discussions and Suggestions on starting new PG program in Electrical Engineering
	<p><b>Resolution A.08:</b></p> <ul style="list-style-type: none"> <li>• The new PG program on “Power Electronics” can be proposed.</li> </ul>
Agenda A.09	To assess the quality of question papers of PG programs for December 2019 End Semester Examination
	<p><b>Resolution A.09:</b></p> <ul style="list-style-type: none"> <li>• The question papers submitted by course coordinators for End Semester Examination – December 2019 have been reviewed by internal BoS members and have found satisfactory.</li> </ul>

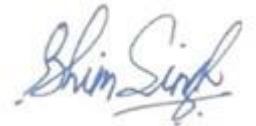
Dr. Praghness Bhatt expressed his gratitude to all BoS members for their valuable suggestions for reviewing and revising the curriculum and syllabus for B. Tech and M. Tech Program. The suggestions provided by the BoS members are be incorporated and forwarded to FoET for the further approval.



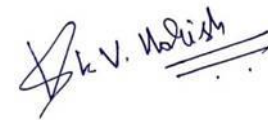
**Prof. Sunil Khanna**  
Director-SoT




**Dr Praghness Bhatt**  
Chairman - BoS



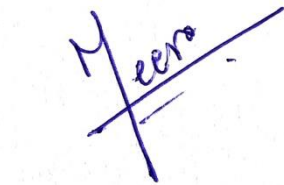
**Prof Bhim Singh**  
Chair Professor –  
EED, IIT-Delhi




**Dr VSKV Harish**  
Internal Member 2



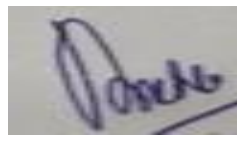
**Dr Amit Sant**  
Member – BoS




**Dr Meera Karamta**  
Internal Member 3



**Dr Naran Pindoriya**  
Associate  
Professor,  
IIT-Roorkee



**Er. B B Mehta**  
Director – SLDC,  
Bhubaneshwar



**Dr Vinod Patel**  
DGM (R&D)

- Annexure I** Teaching & Examination Scheme for B. Tech Electrical Engineering w.e.f. ACY 2020-21
- Annexure II** Recent topics for incorporation in revised B. Tech syllabus w.e.f. ACY 2020-2021
- Annexure III** B. Tech Electrical Engineering Syllabus for 2020-2024
- Annexure IV** B. Tech Electrical Engineering Teaching & Examination Scheme with Syllabus for Semester VII and VIII w.e.f ACY 2020-2021 (**2017 Batch**)
- Annexure V** Teaching & Examination Scheme for M. Tech Electrical Engineering (Power System) w.e.f. ACY 2020-21
- Annexure VI** M. Tech Electrical Engineering (Power System) w.e.f 2020-2021

## Annexure II

- characteristics and design of reversible hydro turbines and alternators
- Energy storage - LI batteries characteristics & design
- forecasting & scheduling of RE
- current regulation for RE scheduling
- wind power equation w.r. to weather data , terrain , contour
- micro grid, DC grid, multiple source small grid,, TERI delhi
- auto healing system at hv & EHV level i.e automatic trans tap oprn, reactors, cap banks
- automatic gen control ( Dadri plant operational ), nldc delhi has s/w setup
- merit order scheduling & dispatch, Reserve s/down & tech mini concepts
- Indian electricity grid code
- RE grid code of Spain & other RE rich country
- PMU, PDC , WAMS, Phasor data analysis - IITB did lot work for Guj & PGCIL
- offshore wind, DC marine cable, floating s/s design & operation
- High voltage distribution system , widely used in Guj
- distribution scada, outage management system, 24x7 call centre linked with CRM of ERP
- statcom ,fix series compensators
- big data analysis, data warehouse, data mining & business intellignece
- current practice in embedded and device interface viz, usb, T pin apple / samsung standard
- HVDC bipole, back to back
- rooftop solar while modeling discom network
- digit CT /digital s/s, hybrid switch yard, GIS switch yard - 765kv gis at powergrid vadodara
- 1200kv BINA powrgrdi / smart grid UGVCL Naroda project
- cea standard for RE project FRTC, HVRT, LVRT, Harmonics
- testing like ten delta, dcrm , furren , sfra, online dga
- 660mw power plant live simulator at adani Mundra
- 830mw super critical 5 units at tata Mundra