MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR
(A Govt. Aided UGC Autonomous & NAAC Accredited Institute Affiliated to RGPV, Bhopal, MP)
Department of Electrical Engineering

Date: 02-06-2023

Minutes of Meeting Board of Studies

Board of Studies (BoS) meeting of the Electrical Engineering department was held in hybrid mode on June 2nd, 2023 at 4:00 PM onwards. The following external members were invited in addition to the faculty members of the department:

1. **Dr. A.K. Sharma**, Principal, JEC Jabalpur **(VC, RGPV Nominee)**
2. **Dr. Manisha Dubey**, Professor, Electrical Engineering Department, MANIT, Bhopal **(Subject Expert)**
3. **Dr. J.N Rai**, Professor, Electrical Engineering Department, DTU Delhi **(Subject Expert)**
4. **Er. Sanjay D. Patil**, Director, National Power Training Institute Satanwada, Shivpuri **(Industry Expert)**
5. **Mr. Sandeep Gandhi,** Key Account Director TATA PROJECTS LIMITED, Ghaziabad**(Alumnus)**

Due to some unavoidable reasons, **Dr. Manisha Dubey**, Professor, Electrical Engineering Department, MANIT, Bhopal, could not make to attend the meeting.

Above mentioned External experts and the following Internal members attended the meeting:

1. **Dr. Manjaree Pandit**, Professor & Dean Academics
2. **Dr. A.K. Wadhwani**, Professor
3. **Dr. Sulochana Wadhwani**, Professor& Head
4. **Prof. AshisPatra**, Associate Professor
5. **Dr. Shishir Dixit**, Associate Professor
6. **Prof. Rakesh Narvey**, Assistant Professor
7. **Dr. Himmat Singh**, Assistant Professor
8. **Dr. Vijay Bhuria**, Assistant Professor
9. **Prof. Kuldeep K. Swarnkar**, Assistant Professor
10. **Prof. Praveen Bansal**, Assistant Professor
11. **Prof. Vishal Chaudhary**, Assistant Professor
12. **Dr. Vikram**, Assistant Professor
13. **Dr. Ankit Tiwari**, Assistant Professor
14. **Dr. Nikhil Paliwal**, Assistant Professor
15. **Dr. YashwantSawle**, Assistant Professor
16. **Dr. Saurabh K. Rajput**, Assistant Professor
17. **Dr. Bhavna Rathore**, Assistant Professor
18. **Dr. Kaushal P.Sengar,**Assistant Professor
19. **Prof. Manoj Kumar**, Assistant Professor

In addition, following student members were also present:

1. **NeharikaMiital**, B Tech IV Year, IoT
2. **Kunal Jolly Saxena**, B Tech IV Year, EE

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Agenda-wise Summary of BoS Meeting

Item EE1	To confirm the minutes of the previous BoS meeting held in December 2022 The minutes of the last BoS held on 14th December 2022 were confirmed. The BoS Minutes were presented & approved in Academic Council Meeting held on 28th Dec 2022
Item EE2	To prepare and finalize the scheme structure of B.Tech. VII Semester with the provision of Three Departmental Electives (DEs)(in which two Departmental Electives are to be offered in online modewith credit transfer)and one Open Category (OC) course for the batch admitted in 2020-21. The scheme structure of B. Tech. VII Semester of EE and IoT for the batch admitted in 2020-21 is prepared and is annexed at ANNEXURE-1
Item EE3	To prepare and finalize the syllabus of courses to be offered (for batch admitted in 2020-21)under Departmental Elective (DE) Course(in traditional mode) for B.Tech. VII Semester along with their COs Departmental Electives (DE2): In this session, two new DE courses are proposed to be offered to the studentsof 2020-21 admitted batch. The list of DE courses proposed for VII Semester in traditional mode is: Electrical Engineering 1. Utilization of Electrical Energy:130717 2. Electrical Drives: 130718 3. Electric Vehicle:130719 The syllabi along with the course outcomes are at ANNEXURE-2. Internet of Things 1. Smart Energy Analytics : 220701 2. Advanced IoT Applications :220702 The syllabi along with the course outcomes are at ANNEXURE-3

To propose the list of courses which the students can opt from SWAYAM/NPTEL/MOOC based Platforms, to be offered in online mode under Departmental Elective (DE)Course, with credit transfer in the B.Tech. VII Semester under the flexible curriculum (Batch admitted in 2020-21)

DE courses taken from SWAYAM/NPTEL/MOOC Platform for VII Semester (Batch admitted in 2020-21) are:

ELECTRICAL ENGINEERING

Details of Departmental Elective (DE-3): SWAYAM/NPTEL/MOOC

Code	Course Name	Offered By	Duration of the course	Start date	End date	Exam date	Name of the Mentor faculty
130761	DC Microgrid and Control Systems	IITR	8 Weeks	July 24, 2023	September 15, 2023	September 24, 2023	Dr. Nikhil Paliwal
130762	Economic Operations and Control of Power Systems	IITK	12 Weeks	July 24, 2023	October 13, 2023	October 29, 2023	Dr. Himmat Singh
130763	Sustainable Power Generation Systems	IITG	12 Weeks	July 24, 2023	October 13, 2023	October 29, 2023	Dr. Ankit Tiwari

Details of Departmental Elective (DE-4): SWAYAM/NPTEL/MOOC

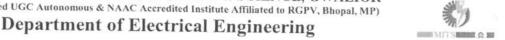| Code	Course Name	Offered By	Duration of the course	Start date	End date	Exam date	Name of the Mentor faculty
130764	Digital Switching	IITK	8 Weeks	July 24, 2023	September 15, 2023	September 24, 2023	Dr. Kaushal P. Sengar
130765	Sensor Technologies: Physics, Fabrication, and Circuits	IITM	8 Weeks	July 24, 2023	September 15, 2023	September 24, 2023	Dr.Bhavana Rathore
130766	Discrete Time Signal Processing	IITKGP	8 Weeks	July 24, 2023	September 15, 2023	September 24, 2023	Dr. Vikram

Item EE4

INTERNET OF THINGS

Details of Departmental Elective (DE-3): SWAYAM/NPTEL/MOOC

Code	Course Name	Offered By	Duration of course	Start date	End date	Exam date	Name of Mentor faculty
220751	Digital Switching	IITK	8 Weeks	July 24, 2023	September 15, 2023	September 24, 2023	Dr. Yashwant Sawle
220752	Big Data Computing	IITK	8 Weeks	August 21, 2023	October 13, 2023	October 28, 2023	Dr. Kaushal P. Sengar
220753	Deep Learning - IIT Ropar	IITM	12 Weeks	July 24, 2023	October 13, 2023	October 28, 2023	Dr. Saurabh K. Rajput

Details of Departmental Elective (DE-4): SWAYAM/NPTEL/MOOC

Code	Course Name	Offered By	Duration of course	Start date	End date	Exam date	Name of Mentor faculty
220754	Discrete Time Signal Processing	IITKGP	8 Weeks	July 24, 2023	September 15, 2023	September 24, 2023	Dr. Vikram
220755	Theory Of Computation	IITK	8 Weeks	July 24, 2023	September 15, 2023	September 24, 2023	Dr. Murli Manohar
220756	Google Cloud Computing Foundations	IITKGP	8 Weeks	August 21, 2023	October 13, 2023	October 29, 2023	Dr. Gaurav Khare

Item EE5

To prepare and finalize the syllabus of courses to be offered (for batch admitted in 2020-21) under the Open Category (OC) Courses (in traditional mode) for B.Tech. VII semester students of other departments along with their COs

Following is the list of OC courses proposed for the VII Semester (Batch admitted in 2020-21), for students of other branches

Category	Course Name	Course code
Open Category (OC2)	Applications of Electrical Equipment & Motors	910205
	Sensor Technology	910206
	Electric Vehicles	910207

The syllabi along with Course Outcomes (COs) are included in **ANNEXURE -4**

Item EE6

To prepare and finalize the Experiment list/ Lab manual for Departmental Laboratory Course (DLC) to be offered in B.Tech VII semester (for batches admitted in 2020-21)

Electrical Engineering
1. Electrical Drives Lab : 130720
2. Industrial Automation Lab :130721

Internet of Things
1. Internet of Things Lab Advanced: 220703
2. Industrial Automation Lab : 220704

The name of the Departmental Laboratory Course DLC along with the list of experimentsand course outcomes is annexed at **ANNEXURE-5**

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To propose the list of "Additional Courses" which can be opted for getting an Honours (for students of the host department)Minor Specialization (for students of other departments)

[These will be offered through SWAYAM/NPTEL/MOOC for the B.Tech. VII semester students (for the batch admitted in 2020-21)] and for B.Tech. V-semester (for the batch admitted in 2020-21)]

(i) Following courses are identified & proposed for V Semester for their requirement towards getting Honors (Batch admitted in 2020-21)

B. Tech. V and VII Semester (Honors)
(For students of the host department: Electrical Engineering)

S. No	Tracks	Course Name	Offered By	Duration of Course	Start Date	End Date	Exam Date	Name of Mentor faculty
1.	Power Systems	Electrical Distribution System Analysis	IITR	8 Weeks	July 24, 2023	September 15, 2023	September 24, 2023	Dr. Vijay Bhuria
2.		Power System Protection	IITKGP	12 Weeks	July 24, 2023	October 13, 2023	October 29, 2023	Prof. Rakesh Narvey
3.		Power System Protection And Switchgear	IITR	8 Weeks	July 24, 2023	September 15, 2023	September 24, 2023	Dr. Nikhil Paliwal
1.	Control and Instrumentation	Semiconductor Devices And Circuits	IISc	12 Weeks	July 24, 2023	October 13, 2023	October 28, 2023	Prof.Praveen Bansal
2.		Microelectronics: Devices to Circuits	IITR	12 Weeks	July 24, 2023	October 13, 2023	October 29, 2023	Prof. Manoj
3.		Linear System Theory	IITM	12 Weeks	July 24, 2023	October 13, 2023	October 28, 2023	Prof. Vikram
4.		Transducers For Instrumentation	IITD	12 Weeks	July 24, 2023	October 13, 2023	October 29, 2023	Prof. Kuldeep K Swarnkar

Note: Credit for opting a particular NPTEL course will be given only once throughout the tenure of B.Tech. program

B. Tech. V&VII Semester (Honors)
(For students of the host department: IoT)

S. No	Track	Course Name	Offered By	Duration of course	Start date	End Date	Exam date	Name of Mentor faculty
1.	Programming	Programming In Modern C++	IITKGP	12 Weeks	July 24, 2023	October 13, 2023	October 28, 2023	Dr. Murli Manohar
2.		Data Structure And Algorithms Using Java	IITKGP	12 Weeks	July 24, 2023	October 13, 2023	October 29, 2023	Dr. Vikram
3.		Introduction To Haskell Programming	IITM	8 Weeks	July 24, 2023	September 15, 2023	September 24, 2023	Dr. Bhavna Rathore
4.		Programming, Data Structures And Algorithms Using Python	IITM	8 Weeks	July 24, 2023	September 15, 2023	September 24, 2023	Dr. Saurabh K. Rajput
5.		Programming in Java	IITKGP	12 Weeks	July 24, 2023	October 13, 2023	October 29, 2023	Dr.Gaurav
6.		Natural Language Processing	IITKGP	12 Weeks	July 24, 2023	October 13, 2023	October 28, 2023	Dr. Kaushal P Sengar

Note: *Credit for opting a particular NPTEL course will be given only once throughout the tenure of B.Tech. program*

(ii) Minor Specialization (for students of other departments)

Following courses are identified & proposed for their requirement towards getting Minor Speciation in Electrical Engineering:

The pool of domain specialization is available on
https://nptel.ac.in/noc/Domain/discipline.html

NPTEL Domain	Course Name	Offered By	Duration of course	Start date	End date	Exam date	Name of Mentor Faculty
Track A: Power Systems and Power Electronics	Basic Electrical Circuits	IITM	12 Weeks	October 13, 2023	October 28, 2023	July 31, 2023	Prof. Vishal Chaudhary
	Control Engineering	IITM	12 Weeks	July 24, 2023	October 13, 2023	October 28, 2023	Prof. Asish Patra
	Electrical Machines - I	IITKGP	12 Weeks	July 24, 2023	October 13, 2023	October 28, 2023	Prof. Praveen Bansal
	Electrical Measurement and Electronic Instruments	IITKGP	12 Weeks	July 24, 2023	October 13, 2023	October 28, 2023	Dr. Ankit Tiwari
Track B: Control and Instrumentation	Basic Electrical Circuits	IITM	12 Weeks	October 13, 2023	October 28, 2023	July 31, 2023	Prof. Vishal Chaudhary
	Control Engineering	IITM	12 Weeks	July 24, 2023	October 13, 2023	October 28, 2023	Prof. Asish Patra
	Electrical Measurement and Electronic Instruments	IITKGP	12 Weeks	July 24, 2023	October 13, 2023	October 28, 2023	Prof. Praveen Bansal
	Linear Systems Theory	IITM	12 Weeks	July 24, 2023	October 13, 2023	October 28, 2023	Dr. Vikram

Note: Credit for opting a particular NPTEL course will be given only once throughout the tenure of B.Tech. program

Item EE8	To prepare and recommend the scheme structure of B.Tech. V Semester under the flexible curriculum (for the Batch admitted in 2021-22)
	The Scheme structure of V semester of the B.Tech V Semester EE and B.Tech V Semester EE-IoT of 2021-22 admitted batches under the flexible curriculum is at **ANNEXURE -6**
Item EE9	To prepare and recommend the syllabi for all Departmental Core (DC) Courses of B.Tech. V Semester (for batch admitted in 2021-22) under the flexible curriculum along with their COs.

	The Syllabi along with the Course Outcomes of V semester of the B.Tech (EE, EE-IoT) students of 2020-21 admitted batch under the flexible curriculum is included at **ANNEXURE-7**	
Item EE10	To prepare and recommend the suggestive list of projects which can be assigned under the 'Skill based mini-project' category in various laboratory components based courses to be offered in B.Tech. V Semester (for the batch admitted in 2021-22). List of projects which can be assigned under the 'Skill based mini-project' category in various laboratory components based courses to be offered in B.Tech. V Semester(EE, EE-IoT) students of 2020-21 admitted batch under the flexible curriculum is included at **ANNEXURE-8**	

Item EE11

To propose the list of courses from SWAYAM/NPTEL/MOOC Platforms to be offered (for the batch admitted in 2021-22) in online mode under Self-Learning/ Presentation, in the B. Tech. VSemester

Course Name	Offered By	Duration of the course	Start date	End date
Business And Sustainable Development	IITB	4 Weeks	August 21, 2023	September 15, 2023
C Programming And Assembly Language	IITM	4 Weeks	August 21, 2023	September 15, 2023
Demystifying Networking	IITB	4 Weeks	July 24, 2023	August 18, 2023
Electrophysiology Of Heart	IITKGP	4 Weeks	August 21, 2023	September 15, 2023
Fundamentals Of Electronic Device Fabrication	IITM	4 Weeks	July 24, 2023	August 18, 2023
Laplace Transform	IMSc	4 Weeks	July 24, 2023	August 18, 2023
Moral Thinking: An Introduction To Values And Ethics	IITK	4 Weeks	August 21, 2023	September 15, 2023
Patent Drafting For Beginners	IITM	4 Weeks	July 24, 2023	August 18, 2023
Sociology And Resource Management	IITKGP	4 Weeks	August 21, 2023	September 15, 2023
Water, Society And Sustainability	IITKGP	4 Weeks	August 21, 2023	September 15, 2023

Item EE12	To review, prepare, finalize and recommend the Scheme & Syllabi (along with the Course Outcomes) of III semester B. Tech. programmes (for the batch admitted 2022-23 Session)

	The Scheme *& Syllabi (along with the Course Outcomes)* of the B.Tech III Semester EE and B.Tech III Semester EE-IoT of 2022-23 admitted batch under the flexible curriculumis at **ANNEXURE -9.**					
Item EE13	**To review, prepare, finalize and recommend the list of experiments/ Lab manual and skill based mini projects for various laboratory courses to be offered in III Semester (for the batch admitted in 2022-23).** The Experiment list/ Lab manual and skill based mini projects for various laboratory courses to be offered in along with the Course Outcomes of III semester of the B.Tech (EE, EE-IoT) students of 2022-23 admitted batch under the flexible curriculum is included at **ANNEXURE-10.**					
Item EE14	**To propose the list of courses from SWAYAM/NPTEL/MOOC Platforms to be offered (for the batch admitted in 2022-23) in online mode under Self-Learning/ Presentation, in the III Semester**					

S. No.	Course Name	Offered By	Duration of course	Start date	End date
1.	Business And Sustainable Development	IITB	4 Weeks	August 21, 2023	September 15, 2023
2.	C Programming And Assembly Language	IITM	4 Weeks	August 21, 2023	September 15, 2023
3.	Laplace Transform	IMSc	4 Weeks	July 24, 2023	August 18, 2023
4.	Moral Thinking: An Introduction To Values And Ethics	IITK	4 Weeks	August 21, 2023	September 15, 2023
5.	Sociology And Resource Management	IITKGP	4 Weeks	August 21, 2023	September 15, 2023
6.	Water, Society And Sustainability	IITKGP	4 Weeks	August 21, 2023	September 15, 2023

Item EE15	To Review, prepare and recommend the scheme structure, Syllabi (along with the Course Outcomes), list of experiments/ Lab manual and skill based mini projects for various laboratory courses of I semester B. Tech. programmes (for the batch admitted in 2023-24 Session) The Scheme & Syllabi, Experiment list/ Lab manual skill-based mini projects for various laboratory courses to be offered along with the Course Outcomes of I semester of the B.Tech. (EE, EE-IoT) students of the 2022-23 admitted batch under the flexible curriculum is included at **ANNEXURE-11.**
Item EE16	To review the CO attainments, to identify gaps and to suggest corrective measures for the improvement in the CO attainment levels for July-Dec 2022. The CO attainments for each course was computed by the respective faculty are compiled for the November. The gap in attainment, if any, was identified and the corrective actions to be taken were proposed by the subject faculty is reviewed. The CO attainment level of the subject in the above duration is annexed at **ANNEXURE -18.**
Item EE17	To review PO attainment of the 2018-2022 batch, CO-PO mapping matrix with attainments and gap analysis **ANNEXURE -19**
Item EE18	To prepare and recommend the syllabi of Mandatory Audit Course: Universal Human Values & Professional Ethics (UHVPE). (At Institute Level) N/A
Item EE19	To review curricula feedback from various stakeholders, its analysis, and impact The Feedback on the curriculum is taken from the Stakeholder (Students, Faculty, Alumni, and Employer) in online mode using Moodle &Google Forms. The analysis is carried out ona scale of 1-5. Few suggestions were received from the alumni & employer. Some of them are already in place. The feedback analysis is annexed at **ANNEXURE -14.**
Item EE20	To review the Course Outcomes (COs) feedback of various courses, its analysis, and ATR (for July –Dec. 2022 semester) The CO feedback on various courses was taken from the students as a part of indirect assessment. The subject faculty reviewed and analyzed the feedback. The actions to be taken to improve. EE

EE

Total No of courses	Total No of COs	No of COs not attained	Percentage of Cos not attained
15	97	7	7.21 %

EE-IoT

Total No of courses	Total No of COs	No of COs not attained	Percentage of Cos not attained
9	49	3	6.12 %

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Item EE21	To discuss and recommend the scheme structure & syllabi of PG Programme (M.E./M.Tech./MCA/MBA) along with their Course Outcomes (COs)
	N/A
Item EE22	To recommend the scheme structure and Syllabus of Ph.D. Course Work (specific to Doctoral Research Scholars, if any)
	N/A

Any other matter:

The syllabus of the course Smart Energy Analytics is discussed in detail in the BoS meeting and the suggestions are implemented as follows:

Item EE23	S N	Suggestions in BoS meeting (02.06.2023)	Implementation of suggestions
	1	• Reduce the construction part of hybrid energy system. • Emphasis the operation and maintenance of hybrid energy system.	The suggestions are included in unit 3 and unit 4 of the syllabus. Unit 3 is now covering- Conventional and renewable energy resources basics andunit 4 iscovering hybrid energy system operation and maintenance.
	2	• Reduce the heavy part related to analytics of energy system, as it is mostly required during post-graduation courses.	The unit 1 and 2 is restructured considering the basics of Data science and machine learning using Python.
	3	• Syllabus should meet the need of industry and entrepreneurship/ start-ups.	In this regard, inputs are also taken from T&P Cell of Institute. The unit 5 is designed to cover the real time data based case studies. As per institute's norms, an industry expert may also be called for expert lectures

The meetings ended with the vote of thanks by BoS Coordinator.

03/08/2023

DEAN (ACADEMICS)
M.I.T.S
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