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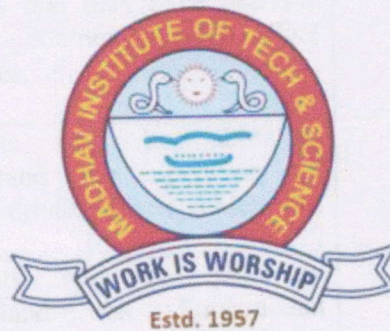# Minutes

of

Meeting

BOARD OF STUDIES

December 1st, 2023

DEPARTMENT OF ELECTRICAL ENGINEERING
MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR
(A Govt. Aided UGC Autonomous & NAAC Accredited Institute Affiliated to RGPV, Bhopal)
Race Course Road, Gola Ka Mandir, Gwalior, M.P. 474005
Website: www.mitsgwalior.in

Date: 01-12-2023

Minutes of Meeting Board of Studies

The Board of Studies (BoS) meeting of the Electrical Engineering department was held on 1st December 2023 at 4:00 PM onwards. 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, Power Training System Institute, Bangalore **(Industry Expert)**
5. **Er. 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. Ashis Patra**, 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. Vishal Chaudhary**, Assistant Professor
11. **Dr. Vikram**, Assistant Professor
12. **Dr. Ankit Tiwari**, Assistant Professor
13. **Prof. Nikhil Paliwal**, Assistant Professor
14. **Prof. Manoj Kumar**, Assistant Professor
15. **Prof. Poonam Singh**, Assistant Professor
16. **Prof. Richa Sharma**, Assistant Professor
17. **Prof. Anuj Lodhi**, Assistant Professor

In addition, following student member were also present:

1. **Kunal Jolly Saxena**, B Tech IV Year, EE
2. **Divyanshu Tiwari**, B Tech III Year, EE

To Agenda-wise summary of the BoS meeting is as follows:

Item EE 1. **To confirm the minutes of the previous BoS meeting held in the month of June, 2023**

The minutes of the last BoS held on 02nd June, 2023 were presented & approved in the Academic Council Meeting held on 30th June, 2023.

Item EE 2. **The examination committees constituted vide Dean Academics Notice no 1332 dated 20/4/2021 need to be reconstituted this year.**

Department examination committee constituted as per the guidelines received wide Ref. No. DA/MP/23/69, Dated 01/11/2023 (ANNEXURE -1)

Item EE 3. **To propose the scheme structure of VIII Semester with the provision of ONE DE & ONE OC course to be offered in online mode with credit transfer for the batch admitted in academic year 2020-21. (The total credits from I-VIII semester should not be less than 160 for this batch)**

The scheme structure of VIII Semester with the provision of ONE Departmental Electives and ONE Open Category (OC) Course, to be offered in online mode with credit transfer for the batch admitted in 2020-21 is discussed and finalized. The scheme structure is annexed as ANNEXURE -2.

Item EE 4. **To propose the list of courses which the students can opt from SWAYAM/NPTEL/ other MOOC Platforms/Institution (MITS) MOOC, to be offered in online mode under Departmental Elective category courses (DE-5) and open category (OC3) for credit transfer in the VIII Semester under the flexible curriculum (Batch admitted in 2020-21)**

List of the course under DE-5 category to be offered in online mode

Code	Course Name	Offered by	Duration of the course	Start date	End date	Exam date	Name of the Mentor faculty
130861	State space Approach to Control System Analysis and Design	IIT Mandi	12 Weeks	January 22, 2024	April 12, 2024	April 20, 2024	Dr. Vikram
130862	Smart Grid: Basics to Advanced Technologies	IITR	12 Weeks	January 22, 2024	April 12, 2024	April 27, 2024	Dr. Himmat Singh
130863	EV - Vehicle Dynamics and Electric Motor Drives	IITD	08 Weeks	January 22, 2024	March 15, 2024	March 23, 2024	Prof Vishal Chaudhary
130864	Design Of Power Electronic converters	IITG	08 Weeks	February 19, 2024	April 12, 2024	April 20, 2024	Prof Ankit Tiwari
130865	Renewable Energy Engineering: Solar, Wind And Biomass Energy Systems	IITG	12 Weeks	January 22, 2024	April 12, 2024	April 27, 2024	Prof Kuldeep Kumar Swarnkar

List of the course under OC-3 categories to be offered in online mode

Code	Course Name	Offered By	Duration of the course	Start date	End date	Exam date	Name of the Mentor faculty
	State space Approach to Control System Analysis and Design	IIT Mandi	12 Weeks	January 22, 2024	April 12, 2024	April 20, 2024	Dr. Vikram
	Smart Grid: Basics to Advanced Technologies	IITR	12 Weeks	January 22,2024	April 12, 2024	April 27, 2024	Dr. Himmat Singh
	Industrial Automation and Control	IITKGP	12 Weeks	January 22, 2024	April 12, 2024	April 20, 2024	Dr. Ankit Tiwari

Item EE 5. To propose the list of "Additional Courses" which can be opted for getting an:
  i. *Honours (for students of the host department)*
  ii. *Minor Specialization (for students of other departments)*

List of courses to be opted for Honours specialization in B. Tech VI Semester
Course run through SWAYAM/NPTEL/ MOOC Learning Based Platform
(to be opted by students of Parent Department)

- In each semester (starting from V to VIII semester), it is required to opt for new subjects towards Honours Degree/ Minor Specialization)
- Credit for opting a particular NPTEL course will be given only once throughout the tenure of B.Tech. program

Specialization 1: Control & Instrumentation	Specialization 2: Power System & Energy	Specialization 3: Internet of Things (IoT)
(H130603) Linear Dynamical Systems (08Weeks) Mentor: Prof Ashis Patra	(H130620) Operation and Planning of Power Distribution Systems (12 Weeks) Mentor: Dr Nikhil Paliwal	(H130622) Introduction to Internet Of Things (12 Weeks) Mentor: Dr Vikram
(H130619) Sensors and Actuators (12 Weeks) Mentor: Dr Ankit Tiwari	(H130621) Power System Engineering (12Weeks) Mentor: Dr S Dixit	(H130619) Sensors and Actuators (12 Weeks) Mentor: Dr Ankit Tiwari
(H130614) Fuzzy Sets, Logic and Systems & Applications (12 Weeks) Mentor: Dr Vikram	(H130614) Fuzzy Sets, Logic and Systems & Applications (12 Weeks) Mentor: Dr Vikram	(H130614) Fuzzy Sets, Logic and Systems & Applications(12 Weeks) Mentor: Dr Vikram
(H130618) Microprocessors and Microcontrollers (12Weeks) Mentor: Prof Kuldeep Swarnkar	(H130618) Microprocessors and Microcontrollers (12Weeks) Mentor: Prof Kuldeep Swarnkar	(H130618) Microprocessors and Microcontrollers (12Weeks) Mentor: Prof Kuldeep Swarnkar

List of courses to be opted for Honours specialization in B. Tech VIII Semester
(For students of the host department: Electrical Engineering)

Course Name	Offered By	Duration	Start date	End date	Exam date	Name of the Mentor faculty
Control System Design	IISc	12 Weeks	January 22, 2024	April 12, 2024	April 27, 2024	Prof Ashis Patra
Fuzzy Sets, Logic and Systems & Applications	IITK	12 Weeks	January 22, 2024	April 12, 2024	April 20, 2024	Dr Vikram
State space Approach to Control System Analysis and Design	IIT Mandi	12 Weeks	January 22, 2024	April 12, 2024	April 20, 2024	Dr Vikram
Smart Grid: Basics to Advanced Technologies	IITR	12 Weeks	January 22, 2024	April 12, 2024	April 27, 2024	Dr. Himmat Singh
Sensors and actuators	IISc	12 Weeks	January 22, 2024	April 12, 2024	April 27, 2024	Dr Vijay Bhuria
Digital Signal Processing and its Applications	IITB	12 Weeks	January 22, 2024	April 12, 2024	April 20, 2024	Dr A. K. Wadhwani
Signal Processing Techniques and its Applications	IITKGP	12 Weeks	January 22, 2024	April 12, 2024	April 21, 2024	Dr Ankit Tiwari
Microprocessors and Microcontrollers	IITG	12 Weeks	January 22, 2024	April 12, 2024	April 20, 2024	Prof Kuldeep Swarnkar

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)**
List of courses for B. Tech. VI & VIII Semester (Minor Specialization)
(For students of other departments)
Pool of domain specialization is available at: https://nptel.ac.in/noc/Domain/discipline.html

Domain	Course Name	Offered By	Duration	Start date	End date	Exam date	Name of the Mentor faculty
Track A: Power Systems and Power Electronics	Power System Engineering	IITKGP	12 Weeks	January 22, 2024	April 12, 2024	April 28, 2024	Dr Shishi Dixit
	Fundamentals of Power Electronics	IISc	12 Weeks	January 22, 2024	April 12, 2024	April 27, 2024	Prof Manoj Kumar
Track B: Control and Instrumentation	Principles of Signals and Systems	IITKGP	12 Weeks	January 22, 2024	April 12, 2024	April 28, 2024	Prof Kuldeep Kumar Swarnkar
	Control engineering	IITM	12 Weeks	January 22, 2024	April 12, 2024	April 20, 2024	Prof A Patra
	Sensors and Actuators	IITB	8 Weeks	January 22, 2024	April 12, 2024	April 27, 2024	Dr Ankit Tiwari
Track A and Track B	Network Analysis	IITKGP	12 Weeks	January 22, 2024	April 12, 2024	April 21, 2024	Prof Vishal Chaudhry
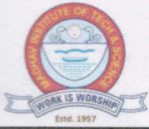
Note: Credit for opting a particular NPTEL course will be given only once throughout the tenure of B.Tech. program

Item EE 6. **To review and finalize the scheme structure of B.Tech VI Semester under the flexible curriculum (Batch admitted in 2021-22)**

The scheme structure of VI Semester for the batch admitted in 2021-22 is discussed and finalized. The scheme structure is annexed as ANNEXURE -3

Item EE 7. **To review and finalize the syllabi for all Departmental Core (DC) Courses of VI Semester (for batches admitted in 2021-22) under the flexible curriculum along with their COs**

List of Departmental Core (DC) courses proposed for VI Semester

Departmental Core (DC) (Offered to EE Students)		
S. No	Course Name	Course code
1	Switchgear & Protection	130615
2	Control System	130616

The Syllabus and course outcomes are annexed at ANNEXURE -4.

Item EE 8. **To propose the list of courses from SWAYAM/NPTEL/MOOC Platforms to be offered (for batches admitted in 2021-22) in online mode under Departmental Elective Course (DE-1) with credit transfer, in the VI Semester.**

List of Departmental Elective courses (DE-1) from SWAYAM/ NPTEL/ MOOC Platforms

Course code	Name of the course	Offered By	Duration	Start Date	End Date	Exam date	Name of the Mentor faculty
130665	Design Of Power Electronic converters	IITG	08 Weeks	February 19, 2024	April 12, 2024	April 20, 2024	Prof Manoj Kumar
130666	EV - Vehicle Dynamics and Electric Motor Drives	I ITD	08 Weeks	January 22, 2024	March 15, 2024	March 23, 2024	Prof Vishal Chaudhary
130662	Non-conventional Energy Resources	IITM	12 Weeks	January 22, 2024	April 12, 2024	April 28, 2024	Dr Nikhil Paliwal
130661	Renewable Energy Engineering: Solar, Wind And Biomass Energy Systems	IITG	12 Weeks	January 22, 2024	April 12, 2024	April 27, 2024	Prof Kuldeep Kumar Swarnkar

Item EE 9. To review and finalize the courses & syllabi to be offered (for batch admitted in 2021-22) under the Open Category (OC) Courses (in traditional mode) for VI semester students of other departments along with their COs.

List of Open Category (OC) courses proposed for VI Semester
for students of other branches

S. No	Course Name	Course code
1	Energy Conservation & Management	910104
2	Biomedical Instrumentation	910105
3	Industrial Automation	910106

The syllabus with CO is annexed at ANNEXURE -5.

Item EE 10. To review and finalize the Experiment list/ Lab manual for all the Laboratory Courses to be offered in B.Tech.VI semester *(for batch admitted in 2021-22).*

The Experiment list/ Lab manual for Laboratory Courses to be offered in VI semester is discussed and finalized as annexed at ANNEXURE -6.

Item EE 11. To review and finalize the suggestive list of projects which can be offered under the 'Skill based mini-project' category in various laboratory components based courses to be offered in B.Tech. VI Semester (for the batch admitted in 2021-22).

The suggestive list of projects which can be offered under the 'Skill based mini-project' category is annexed at ANNEXURE -7.

Item EE 12. To review and finalize the scheme and syllabi of B. Tech. IV Semester (for batch admitted in 2022-23) under the flexible curriculum along with their COs.

The scheme structure of Scheme and syllabi of B. Tech. IV Semester (for batch admitted in 2022-23 is discussed and finalized. The scheme structure is annexed as ANNEXURE -8 and Syllabi is annexed at ANNEXURE -9.

Item EE 13. To review and finalize the Experiment list/ Lab manual for all the Laboratory Courses to be offered in Batch IV semester (for batch admitted in 2022-23)

The Experiment list/ Lab manual for Laboratory Courses to be offered in IV is discussed and finalized as annexed at ANNEXURE -10.

Item EE 14. To review and finalize the suggestive list of projects which can be offered under the 'Skill based mini-project' category in various laboratory components based courses to be offered in B. Tech IV Semester (for the batch admitted in 2022-23).

The Skill based mini-project' in various Laboratory Courses to be offered in IV is discussed and finalized as annexed at ANNEXURE -11.

Item EE 15. To review and finalize the scheme and syllabi of B. Tech. II Semester (for batch admitted in 2023-24) under the flexible curriculum along with their COs.

The scheme structure of Scheme and syllabi of B. Tech. IV Semester (for batch admitted in 2022-23 is discussed and finalized. The scheme structure is annexed as ANNEXURE -11 and Syllabi is annexed at ANNEXURE -12

Item EE 16. **To review and finalize the Experiment list/ Lab manual for all the Laboratory Courses to be offered in Batch II semester (for batch admitted in 2023-24)**

The Experiment list/ Lab manual for Laboratory Courses to be offered in IV is discussed and finalized as annexed at ANNEXURE -13

Item EE 17. **To review and finalize the suggestive list of projects which can be offered under the 'Skill based mini-project' category in various laboratory components based courses to be offered in B. Tech IV Semester *(for the batch admitted in 2023-24).***

The Experiment list/ Lab manual for Laboratory Courses to be offered in II is discussed and finalized as annexed at ANNEXURE -14

Item EE 18. **To review the CO attainments, to identify gaps and to suggest corrective measures for the improvement in the CO attainment levels for Jan-June 2023.**

The CO attainment for each course were computed by the respective faculty. The summary of CO attained/ not attained is given below:

Total No of courses	Total No of COs	No of COs not attained	Percentage of Cos not attained
14	97	8	8.3%

The gap in attainment, if any, were identified and the corrective actions to be taken were proposed by the subject faculty. The CO attainment level of the subject in the above duration are ANNEXURE -15.

Item EE 19. **To review the PO attainment, CO-PO mapping matrix and action to be taken to improve PO attainment level.**

The CO-PO mapping is reviewed by the course committee, and no major change is proposed this time. Also, the PO attainment for the batch admitted in 2019 is completed and reviewed. The action to be taken for the next session are discussed and annexed at ANNEXURE -16

Item EE 20. **To review curricula feedback from various stakeholders, its analysis and impact.**

The Feedback on curriculum is taken from the Stakeholder (students, faculty, Alumni and Employer in online mode using Moodle & google form. The analysis is carried out in the 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 -17.

Item EE 21. **To discuss and recommend the scheme structure & syllabi of PG Programme (M.E./M.Tech./MCA/MBA) along with their Course Outcomes (COs)**

No change is proposed.

Item EE 22. **To recommend the scheme structure and Syllabus of Ph.D. Course Work (specific to Doctoral Research Scholars, if any)**

N/A

Item EE 23. **Any other matter**
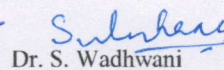
The outcome of the BoS meeting are:

- The experts appreciated the proposed scheme and were satisfied with the list of Electives, Open courses and the Core courses included in the curriculum.
- There is a proposal to add a component focused on case studies to a curriculum. This component aims to incorporate real-life scenarios or examples into the curriculum, likely related to the latest or most advanced practices in industrial applications.
- Students should be familiar with United Nations' 17 Sustainable Development Goals (SDGs)
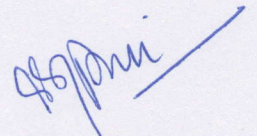
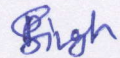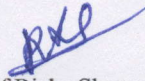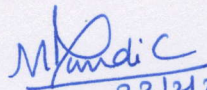|				
Dr. M. Pandit	Dr. A.K. Wadhwani	Dr. S. Wadhwani	Prof. Ashish Patra	Dr. Shishir Dixit
Prof. Rakesh Narvey	Dr. Himmat Singh	Dr. Vijay Bhuria	Prof. Kuldeep Swarnkar	Prof. Vishal Chaudhary
Dr. Vikram	Dr. Ankit Tiwari	Dr Nikhil Paliwal	Prof. Manoj Kumar	
Prof Anuj Lodhi	Prof Poonam Singh	Prof Richa Sharma		
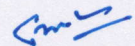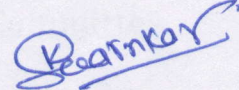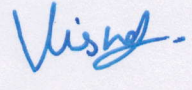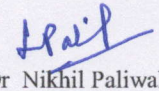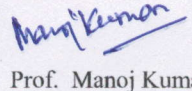
DEAN (ACADEMICS)
M.I.T.S
GWALIOR

22/2/2024