MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR

(A Govt. Aided UGC Autonomous & NAAC Accredited Institute Affiliated to RGPV, Bhopal, MP)

Electrical Engineering Department

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06.03.2023

Date: 14-12-2022

Minutes of Meeting Board of Studies

The Board of Studies (BoS) meeting of Electrical Engineering department was held Online on 14th December 2022 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, 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, J.N Rai, Professor, Electrical Engineering Department, DTU Delhi, 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. Praveen Bansal**, Assistant Professor
11. **Prof. Vishal Chaudhary**, Assistant Professor
12. **Dr. Vikram**, Assistant Professor
13. **Dr. Ankit Tiwari,** Assistant Professor
14. **Prof. Nikhil Paliwal**, Assistant Professor
15. **Dr. Yashwant Sawle**, Assistant Professor
16. **Prof. Saurabh K. Rajput**, Assistant Professor
17. **Prof. Bhavna Rathore**, Assistant Professor
18. **Dr. Kaushal Pratap Sengar, Assistant Professor &**
19. **Prof. Manoj Kumar**, Assistant Professor

In addition, following student member were also present:

1. **Ikshita Trivedi**, B Tech IV Year &
2. **Aryan Sharma**, B Tech IV Year

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

Item EE 1

To confirm the minutes of previous BoS meeting held in the month of May 2022.

The minutes of the last BoS held on 28th May, 2022 were confirmed. The BoS Minutes were presented & approved in Academic Council Meeting held on 10th June, 2022.

Item EE 2

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 2019-20. (The total credits from I-VIII semester should be 170 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 2019-20 is discussed and finalized. The scheme structure is annexed as ANNEXURE -1.

Item EE 3

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 (DE) category courses (DE-5) and open category (OC4) for credit transfer in the VIII Semester under the flexible curriculum (Batch admitted in 2019-20)

The list of the course under DE-5 & OC-4 categories to be offered in online mode is finalized and is given below.

DE-5 *(SWAYAM/NPTEL/ other MOOC Platforms/Institution (MITS) MOOC)

Code	Course Name	Offered by	Duration of the course	Start date	End date	Exam date	Name of the Mentor faculty
130851	Introduction to Internet of things	IITKGP	12 Weeks	January 23, 2023	April 14, 2023	April 30, 2023	Prof. Bhavna Rathore
130855	Power System Dynamics, Control and Monitoring	IITKGP	12 Weeks	January 23, 2023	April 14, 2023	April 29, 2023	Dr. Himmat Singh
130856	Microprocessors and Interfacing	IITG	12 Weeks	January 23, 2023	April 14, 2023	April 30, 2023	Prof. Kuldeep Kumar Swarnkar
130857	Industrial Automation And Control	IITKGP	12 Weeks	January 23, 2023	April 14, 2023	April 29, 2023	Prof. Manoj Kumar

OC-4* SWAYAM/NPTEL/ other MOOC Platforms/Institution (MITS) MOOC
(For students of other branches

Code	Course Name	Offered By	Duration of the course	Start date	End date	Exam date	Name of the Mentor faculty
900607	Renewable Energy Engineering: Solar, Wind and Biomass Energy Systems	IITG	12 Weeks	January 23, 2023	April 14, 2023	April 30, 2023	Prof. Kuldeep K. Swarnkar
900608	Non-conventional energy Resources	IITM	12 Weeks	January 23, 2023	April 14, 2023	April 30, 2023	Prof. Nikhil Paliwal
900633	Smart Grid: Basics to Advanced Technologies	IITR	12 Weeks (8 weeks + 4 weeks new)	January 23, 2023	April 14, 2023	April 30, 2023	Dr.Himmat Singh

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)***

*[These will be offered through SWAYAM/NPTEL/MOOC based Platforms for the **VI semester** (for the batch admitted in 2020-21) and for **VIII semester students** for the batch admitted in 2019-20.*

The list should be additive; such that those MOOCs which were offered in previous semesters are also included provided they are being offered on the platform during Jan-June 2023 semester]

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

B. Tech. VI Semester (Honors)

(For students of the host department: Electrical Engineering)

S. No	Course Name	Duration of the course	Start date	End date	Exam date	Name of the Mentor faculty
1.	Sensors and actuators	12 Weeks	January 23, 2023	April 14, 2023	April 30, 2023	Dr Saurabh K Rajput
2.	Introduction to Internet of Things	12 Weeks	January 23, 2023	April 14, 2023	April 30, 2023	Dr Bhavna Rathore
3.	Fuzzy Sets, Logic and Systems & Applications	12 Weeks	January 23, 2023	April 14, 2023	April 29, 2023	Dr Vikram.
4.	Introduction To Soft Computing	8 Weeks	January 23, 2023	March 17, 2023	March 26, 2023	Dr Murli Manohar
5.	Introduction to Machine Learning	12 Weeks	January 23, 2023	April 14, 2023	April 30, 2023	Dr Vikram.
6.	Introduction To Industry 4.0 And Industrial Internet Of Things	12 Weeks	January 23, 2023	April 14, 2023	April 29, 2023	Prof. Praveen Bansal

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

Item EE4

B. Tech. VI Semester (Honors)

(For students of the host department: EE-IoT)

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

S.No	Course Name	Duration of the course	Start date	End date	Exam date	Name of the Mentor faculty
1.	Sensors and actuators	12 Weeks	January 23, 2023	April 14, 2023	April 30, 2023	Dr Saurabh K Rajput
2.	Blockchain and its Applications	12 Weeks	January 23, 2023	April 14, 2023	April 29, 2023	Dr Gaurav Khare
3.	Programming, Data Structures And Algorithms Using Python	8 Weeks	January 23, 2023	March 17, 2023	March 26, 2023	Dr Yashwant Sawle
4.	Programming In Java	12 Weeks	January 23, 2023	April 14, 2023	April 30, 2023	Dr Kaushal P Sengar
5.	Evolution Of Air Interface Towards 5G	8 Weeks	20 Feb 2023	14 Apr 2023	29 Apr 2023	Dr Ankit Tiwari
6.	Digital Signal Processing and its Applications	12 Weeks	23 Jan 2023	14 Apr 2023	29 Apr 2023	Dr Vikram
7.	Control engineering	12 Weeks	January 23, 2023	April 14, 2023	April 29, 2023	Dr Nikhil Paliwal

Following courses are identified & proposed for VIII Semester for their requirement towards getting Honors (Batch admitted in 2019-20)

B. Tech. VIII Semester (Honors)

(For students of the host department)

S.No	Course Name	Duration of the course	Start date	End date	Exam date	Name of the Mentor faculty
1.	Sensors and actuators	12 Weeks	January 23, 2023	April 14, 2023	April 30, 2023	Dr Saurabh K Rajput
2.	Cloud Computing and Distributed Systems	8 Weeks	January 23, 2023	March 17, 2023	March 26, 2023	Dr Kaushal P Sengar
3.	Fuzzy Sets, Logic and Systems & Applications	12 Weeks	January 23, 2023	April 14, 2023	April 29, 2023	Dr Vikram
4.	Introduction To Soft Computing	8 Weeks	January 23, 2023	March 17, 2023	March 26, 2023	Dr Murli Manohar
5.	Embedded System Design	12 Weeks	January 23, 2023	April 14, 2023	April 29, 2023	Dr Bhavna Rathore
6.	Data Base Management System	8 Weeks	January 23, 2023	March 17, 2023	March 26, 2023	Dr Gaurav Khare

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:

B. Tech. VI & VIII Semester (Minor Specialization)

(For students of other departments)

The pool of domain specialization is available on

https://nptel.ac.in/noc/Domain/discipline.html

Domain	Course Name	Duration of the course	Start date	End date	Exam date	Name of the Mentor faculty
Track A: Power Systems and Power Electronics	Electrical Machines - II	12 Weeks	January 23, 2023	April 14, 2023	April 29, 2023	Prof Praveen Bansal
	Fundamental of Power Electronics	12 Weeks	January 23, 2023	April 14, 2023	30 Apr 2023	Dr Ankit Tiwari
	Network Analysis	12 Weeks	January 23, 2023	April 14, 2023	30 Apr 2023	Prof Vishal Chaudhary
Track B: Control and Instrumentation	Principles of Signals and Systems	12 Weeks	January 23, 2023	April 14, 2023	April 29, 2023	Dr Vikram
	Control engineering	12 Weeks	January 23, 2023	April 14, 2023	April 29, 2023	Dr Nikhil Paliwal
	Analog Electronic Circuits	12 Weeks	January 23, 2023	April 14, 2023	April 29, 2023	Prof manoj Kumar
Track A &Track B	Introduction to Research	8 Weeks	February 20, 2023	April 14, 2023	April 29, 2023	Dr Yashwant Sawle

Item EE 8

To review and finalize the courses & syllabi to be offered (for batches admitted in 2020-21) under the Open Category (OC) Courses (in traditional mode) for VI semester students of other departments along with their COs

Following is the list of Open Category (OC) courses proposed for VI Semester (Batch admitted in 2020-21), for students of other branches. The syllabuses with CO are annexed at ANNEXURE -3.

S. No	Course Name	Course code
1	Energy Conservation & Management	910104
2	Biomedical Instrumentation	910105
3	Industrial Automation	910106
4	Solar PV Systems : Design and Economics	910107

Item EE 9

To review and finalize the Experiment list/ Lab Manual for Laboratory Courses to be offered in VI semester (for batches admitted in 2020-21)

The Experiment list/ Lab manual for Laboratory Courses to be offered in VI (B Tech EE & B Tech EE-IoT) is discussed and finalized as annexed at ANNEXURE -4

Item EE 10

To review and finalize the scheme and syllabi of **B. Tech. IV Semester (for batches admitted in 2021-22)** under the flexible curriculum along with their COs

Scheme & Syllabi (along with the Course Outcomes) of IV semester of the B. Tech (EE, EE-IoT) students of 2021-22 admitted batch according to the revised structure is included in ANNEXURE -5 (scheme and syllabi of B. Tech. *IV Semester,* EE) & ANNEXURE -6 (scheme and syllabi of B. Tech. *IV Semester,* EE(IoT)

Item EE 11

To review and finalize the Experiment list/ Lab Manual for Laboratory Courses to be offered **in IV (for batch admitted in 2021-22)**

The Experiment list/ Lab manual for Laboratory Courses to be offered in IV (B Tech EE & B Tech EE-IoT) is discussed and finalized as annexed at ANNEXURE -7

Item EE 12

To review and finalize the suggestive list of projects under the 'Skill based mini-project' category in various laboratory courses to be offered in Jan - June 2023 semester during IV Semester (for the batch admitted in 2021-22).

The Skill based mini-project' in various Laboratory Courses to be offered in IV (B Tech EE & B Tech EE-IoT) is discussed and finalized as annexed at ANNEXURE -8.

Item EE 13

To ratify the Scheme & Syllabi, list of experiments and skill based mini projects of First Semester & Second Semester B. Tech. programmes [admitted batch 2022-23 Session]

Item EE 14

To review the CO attainments, to identify gaps and to suggest corrective measures for the improvement in the CO attainment levels for Jan-June 2022.

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
16	91	5	5.5%

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 -13.

Item EE 15

To review curricula feedback from various stakeholders, its analysis and impact

[Stakeholder feedback analysis must also contain an action taken report (ATR) and the details/data of the stakeholder who have responded through GOOGLE form (such as Name, organization, mail id,phone no if available) must also be shared along with the feedback for the alumni/employer.]

Item EE 5

To review and finalize the syllabi for all Departmental Core (DC) Courses of VI Semester (for batches admitted in 2020-21) under the flexible curriculum along with their COs

Following is the list of Departmental Core (DC) courses proposed for VI Semester (Batch admitted in 2020-21). The Syllabus and course outcomes are annexed at ANNEXURE -2.

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

Departmental Core (DC) (Offered to EE-IoT Students)		
S. No	Course Name	Course code
1	Soft Computing Techniques	220601
2	Software Engineering	220602

Item EE 6

To review and finalize the courses & syllabi to be offered (for batches admitted in 2020-21) under Departmental Elective (DE) Course in the VI Semester

-NA-

Item EE 7

To propose the list of courses from SWAYAM/NPTEL/MOOC Platforms to be offered (for batches admitted in 2020-21) in online mode under Departmental Elective (DE) Course with credit transfer, in the VI Semester

Following is the list of Departmental Elective (DE) courses to be offered from SWAYAM/NPTEL/MOOC Platforms for VI Semester (Batch admitted in 2020-21).

DE-1 (Offered to EE Students)

Code	Name of the course	Duration of the course	Dates		Examination date	Mentor
			Start Date	End date		Name of the Mentor faculty
130656	Renewable Energy Engineering: Solar, Wind and Biomass Energy Systems	12 Weeks	January 23, 2023	April 14, 2023	April 30, 2023	Prof. Vishal Chaudhary
130657	Non-conventional energy Resources	12 Weeks	January 23, 2023	April 14, 2023	April 30, 2023	Prof. Nikhil Paliwal
130658	Microprocessors and Interfacing	12 Weeks	January 23, 2023	April 14, 2023	April 30, 2023	Prof. Kuldeep K. Swarnkar
130659	Industrial Automation And Control	12 Weeks	January 23, 2023	April 14, 2023	April 29, 2023	Prof. Manoj Kumar

DE-1 (Offered to EE-IoT Students)

Code	Name of the course	Duration of the course	Dates		Examination date	Mentor
			Start Date	End date		Name of the Mentor faculty
220651	Introduction To Industry 4.0 And Industrial Internet Of Things	12 Weeks	January 23, 2023	April 14, 2023	April 29, 2023	Prof Praveen Bansal
220652	Data Mining	8 Weeks	January 23, 2023	March 17, 2023	March 26, 2023	Dr Murli Manohar
220653	Foundation of Cloud IoT Edge ML	8 Weeks	February 20, 2023	April 14, 2023	April 29, 2023	Dr Bhavna Rathore
220654	Industrial Automation And Control	12 Weeks	January 23, 2023	April 14, 2023	April 29, 2023	Dr Kaushal P Sengar

	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 are already in place. On the basis of the feedback from students, the contents of the subject Computer Aided Power System Analysis, are restructured. The feedback analysis is annexed at ANNEXURE -14.
Item EE 16	To review Course Outcomes (COs) feedback of various courses, its analysis and impact **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 t ANNEXURE -15**
Item EE 17	Any other matter

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 14.12.22 | Prof. Praveen Bansal

Prof. Vishal Chaudhary | Dr. Vikram | Prof. Ankit Tiwari | Prof. Nikhil Paliwal | Dr. Yashwant Sawle

Prof. Bhavna Rathore | Prof. Saurabh K Rajput | Dr. Kaushal Pratap Sengar | Prof. Manoj Kumar

02.03.2023

DEAN (ACADEMICS)
M.I.T.S
GWALIOR

MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR

(A Govt. Aided UGC Autonomous & NAAC Accredited Institute affiliated to RGPV, Bhopal)

Department of Electrical Engineering

B.Tech. I Semester (Electrical Engineering) *(for batch admitted in academic session 2022-23)*

S. No.	Subject Code	Category Code	Subject Name	Maximum Marks Allotted							Total Marks	Contact Hours per week			Total Credits	Mode of Teaching	Mode of Exam.	Duration of Exam.
				Theory Slot				Practical Slot										
				End Term Evaluation		Continuous Evaluation		End Sem. Exam	Continuous Evaluation			L	T	P				
				End Sem. Exam	$Proficiency in subject /course	Mid Sem. Exam.	Quiz/ Assignment		Lab Work & Sessional	Skill Based Mini Project								
1.	2100011	BSC	Engineering Mathematics –I	50	10	20	20	-	-	-	100	3	1	-	4	Offline	PP	2 Hrs
2.	2100014	ESC	Engineering Graphics	50	10	20	20	-	-	-	100	1	2	-	3	Blended	AO	2 Hrs
3.	2100022	ESC	Basic Electrical & Electronics Engineering	50	10	20	20	60	20	20	200	2	1	2	4	Blended	MCQ	1.5 Hrs
4.	2160122	ESC	Computer Programming	50	10	20	20	60	20	20	200	2	1	2	4	Blended	AO	2 Hrs
5.	2130121	DC	Electrical Engineering Materials	50	10	20	20	-	-	-	100	3	-	-	3	Blended	PP	2 Hrs
6.	2100018	ESE	Engineering Graphics Lab	-	-	-	-	60	20	20	100	-	-	2	1	offline	SO	-
Total				**250**	**50**	**100**	**100**	**180**	**60**	**60**	**800**	**11**	**05**	**06**	**19**	-	-	-
7.	3000004	Natural Sciences & Skills	**Language**	50	10	20	20	30	10	10	150	1	-	2	GRADE	Blended	MCQ	1.5 Hrs
Induction programme of three weeks (MC): Physical activity, Creative Arts, Universal Human Values, Literary, Proficiency Modules, Lectures by Eminent People, Visits to local Areas, Familiarization to Dept./Branch & Innovations.																		

$Proficiency in course/subject – includes the weightage towards ability/ skill/ competency /knowledge level /expertise attained etc. in that particular course/subject.

Natural Sciences& Skills: Engineering Physics / Engineering Chemistry / Environmental Science/ Language.

Credits of Natural Sciences & Skills will be added in the VI Semester.

MCQ: Multiple Choice Question **AO:** Assignment + Oral **OB:** Open Book **PP:** Pen Paper **SO:** Submission + Oral

02.03.2023

DEAN (ACADEMICS)
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Department of Electrical Engineering

B.Tech. II Semester (Electrical Engineering)

(for batch admitted in academic session 2022-23)

S. No.	Subject Code	Category Code	Subject Name	Maximum Marks Allotted							Total Marks	Contact Hours per week			Total Credits	Mode of Teaching	Mode of Exam.	Duration of Exam.
				Theory Slot				Practical Slot										
				End Term Evaluation		Continuous Evaluation		End Sem. Exam	Continuous Evaluation			L	T	P				
				End Sem. Exam	[5]Proficiency in subject /course	Mid Sem. Exam.	Quiz/ Assignment		Lab Work & Sessional	Skill Based Mini Project								
1.	2100020	ESC	Basic Civil Engineering & Mechanics	50	10	20	20	-	-	-	100	3	-	-	3	Blended	PP	2 Hrs
2.	2100021	ESC	Basic Mechanical Engineering	50	10	20	20	-	-	-	100	3	-	-	3	Blended	MCQ	1.5 Hrs
3.	2130221	ESC	Python Programming	50	10	20	20	60	20	20	200	2	1	2	4	Blended	AO	2 Hrs
4.	2130222	DC	Network Analysis	50	10	20	20	-	-	-	100	3	1	-	4	Blended	PP	2 Hrs
5.	2130223	DC	Electrical & Electronics Measurement	50	10	20	20	60	20	20	200	2	1	2	4	Blended	PP	2 Hrs
6.	~~2130224~~ 2100025	DC	Manufacturing Practices	-	-	-	-	60	~~40~~ 20	20	100	-	-	2	1	Offline	SO	
Total				**250**	**50**	**100**	**100**	**180**	**~~80~~ 60**	**~~40~~ 60**	**800**	**13**	**3**	**6**	**19**	-	-	-
7.	3000003	Natural Sciences & Skills	Environmental Engineering	50	10	20	20	30	10	10	150	1	-	2	GRADE	Blended	MCQ	1.5 Hrs
Summer Internship Project – I (Institute Level) (Qualifier): Minimum two-week duration: Evaluation in III Semester.																		

[5]Proficiency in course/subject – includes the weightage towards ability/ skill/ competency /knowledge level /expertise attained etc. in that particular course/subject.

Natural Sciences& Skills: Engineering Physics / Engineering Chemistry / Environmental Science/ Language.

Credits of Natural Sciences & Skills will be added in the VI Semester.

MCQ: Multiple Choice Question **AO:** Assignment + Oral **OB:** Open Book **PP:** Pen Paper **SO:** Submission + Oral

06.03.2023

DEAN (ACADEMICS)
M.I.T.S
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MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR

(A Govt. Aided UGC Autonomous & NAAC Accredited Institute affiliated to RGPV, Bhopal)

Department of Electrical Engineering

B.Tech. (Electrical Engineering) IV Semester

For batch admitted in Academic Session 2021-2022

S. No.	Subject Code	Category Code	Subject Name	Maximum Marks Allotted							Total Marks	Contact Hours per week			Total Credits	Mode of Teaching (Offline/ Online)	^{55}Mode of Exam.
				Theory Slot				Practical Slot				L	T	P			
				End Sem.		Mid Sem. Exam.	Quiz/ Assignment	End Sem	Lab Work & Sessional	Skill Based Mini Project							
				End Term Evaluation	$ Proficiency in subject /course												
1.	100003	BSC	Engineering Mathematics –III	50	10	20	20	-	-	-	100	2	1	-	3	Blended	PP
2.	130412	DC	Electrical Machines-I	50	10	20	20	60	20	20	200	2	1	2	4	Blended	PP
3.	130413	DC	Power System-I	50	10	20	20	-	-	-	100	3	1	-	4	Blended	PP
4.	130416	DC	Microprocessor & Embedded Systems	50	10	20	20	60	20	20	200	2	1	2	4	Blended	PP
5.	100004	MC	Cyber Security	50	10	20	20	-	-	-	100	2	-	-	2	Blended	MCQ
6.	130414	DLC	Programming With Python	-	-	-	-	60	40	-	100	-	-	2	1	Offline	SO
7.	130415	DLC	Renewable Energy Lab	-	-	-	-	60	40	-	100	-	-	2	1	Offline	SO
8.	200xxx	CLC	Novel Engaging Course	-	-	-	-	50	-	-	50	-	-	2	1	Interactive	SO
Total				250	50	100	100	290	120	40	950	11	4	10	20		
Summer Internship Project-II (Soft skills Based) for two weeks duration: Evaluation in V Semester																	
9.	1000001	MAC	Indian Constitution & Traditional Knowledge	50	10	20	20	-	-	-	100	2	-	-	Grade	Online	MCQ

^{55}**MCQ:** Multiple Choice Question ^{55}**AO:** Assignment + Oral ^{55}**PP:** Pen Paper ^{55}**SO:** Submission + Oral

Mode of Teaching						Mode of Examination					Total Credits
Theory				Lab	NEC	Theory			Lab	NEC	
Offline	Online	Blended		Offline	Interactive	PP	AO	MCQ	SO	SO	
		Offline	Online								
3	2	7	3	4	1	13	-	2	4	1	20
15%	10%	35%	15%	20%	5%	65%	-	10%	20%	5%	Credits %

22.03.2023

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(A Govt. Aided UGC Autonomous & NAAC Accredited Institute Affiliated to RGPV, Bhopal, MP)

Electrical Engineering Department

Scheme of Evaluation

B. Tech. VI Semester (Electrical Engineering)

for batch admitted in academic session 2020-21

S. No.	Subject Code	Category Code	Subject Name	Maximum Marks Allotted									Total Marks	Contact Hours per week			Total Credits	Mode of Teaching	^{SS}Mode of Exam.
				Theory Slot				Practical Slot			MOOCs								
				End Term Evaluation		Continuous Evaluation		End Sem. Exam.	Continuous Evaluation		Assignment	Exam		L	T	P			
				End Sem. Exam.	$^{\$}$Proficiency in subject /course	Mid Sem. Exam.	Quiz/ Assignment		Lab work & Sessional	Skill Based Mini Project									
1.	130615	DC	Switchgear & Protection	50	10	20	20	60	20	20	-	-	200	3	-	2	4	Blended	PP
2.	130616	DC	Control Systems	50	10	20	20	60	20	20	-	-	200	3	-	2	4	Blended	PP
3.	130656/7/8/9	DE	Departmental Elective* (DE-1)	-	-	-	-	-	-	-	25	75	100	3	-	-	3	Blended	MCQ
4.	9101**	OC	Open Category (OC-1)	50	10	20	20	-	-	-	-	-	100	3	-	-	3	Blended	PP
5.	130617	MC	AI & ML	50	10	20	20	60	20	20	-	-	200	3	-	2	4	Blended	MCQ
6.	130618	DLC	Minor Project-II	-	-	-	-	60	40	-	-	-	100	-	-	4	2	Offline	SO
7.	200XXX	CLC	Novel Engaging Course (Informal Learning)	-	-	-	-	50	-	-	-	-	50	-	-	2	1	Blended	SO
Total				**200**	**40**	**80**	**80**	**290**	**100**	**60**	**25**	**75**	**950**	**15**	**-**	**12**	**21**	-	-
8.	1000007	MAC	Intellectual Property Rights (IPR)	50	10	20	20	-	-	-	-	-	100	2	-	-	GRADE	Online	MCQ
Summer Internship-III (On Job Training) for Four weeks duration: Evaluation in VII Semester																			
Additional Course for Honours or minor Specialization				**Permitted to opt for maximum two additional courses for the award of Honours or Minor specialization**															

$^{\$}$proficiency in course/subject-includes the weightage towards ability/skill/competence/knowledge level/ expertise attained etc. in that particular course/subject.

^{SS}MCQ: Multiple Choice Question **^{SS}AO:** Assignment + Oral **^{SS}PP:** Pen Paper **^{SS}SO:** Submission + Oral

***Course run through SWAYAM/NPTEL/ MOOC Learning Based Platform with credit transfer**

***This course run through SWAYAM/NPTEL/ MOOC platform**

DE-1 (SWAYAM/NPTEL/ MOOC platform)		****Open Category (OC-1) (For students of other branches)**	
130656	Renewable Energy Engineering: Solar, Wind and Biomass Energy Systems	**910104**	Energy Conservation & Management
130657	Non-conventional Energy Resources	**910105**	Biomedical Instrumentation
130658	Design of Power Converters (Electronic)	**910106**	Industrial Automation
130659	Microprocessors and Interfacing		
130660	Industrial Automation and Control	**910107**	Solar PV Systems : Design and Economics

02.03.2023

DEAN (ACADEMICS)
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MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR

(A Govt. Aided UGC Autonomous & NAAC Accredited Institute Affiliated to RGPV, Bhopal, MP)

Electrical Engineering Department

Scheme of Examination

B.Tech. VIII Semester (Electrical Engineering)

For batch admitted in Academic Session 2019-2020

S. No.	Subject Code	Category	Subject Name & Title	Maximum Marks Allotted					MOOC		Total Marks	Contact Hours per week			Total Credits
				Theory Slot			Practical Slot								
				End Sem.	Mid Sem. Exam	Quiz/ Assignment	End Sem.	Term Work / Lab Work & Sessional	Assignment	Exam		L	T	P	
1.	130851/55/56/57	DE	DE* (DE-5)	-	-	-	-	-	25	75	100	-	-	-	3
2.	900**	OC	OC* (OC-4)	-	-	-	-	-	25	75	100	-	-	-	2
3.	130801	DLC	Internship/ Project	-	-	-	250	150	-	-	400	-	-	12	6
4.	130802	-	Professional Development#	-	-	-	-	50	-	-	50	-	-	2	1
			Total	-	-	-	250	200	50	150	650	-	-	8	12
Additional Courses for obtaining Honours or minor Specialization by desirous students				Permitted to opt for maximum two additional courses for the award of (i) Honours in parent discipline or (ii) Honours with Minor Specialization in engineering discipline other than the parent discipline.											

*All of these courses will run through SWAYAM/ NPTEL/ MOOC

#Evaluation will be based on participation/laurels brought by the students to the institution in national/state level technical and other events during the complete tenure of the UG program (participation in professional chapter activities, club activities, cultural events, sports, personality development activities, collaborative events, MOOCs & technical events)

DE-5 *(SWAYAM/NPTEL/ MOOC)	
130851	Introduction to Internet of Things
130855	Power System Dynamics, Control and Monitoring
130556	Microprocessors and Interfacing
130857	Industrial Automation And Control
130858	Design of Power Converters

Electronic

OC-4**(SWAYAM/NPTEL/ MOOC) (For students of other branches)	
900607	Renewable Energy Engineering: Solar, Wind and Biomass Energy Systems
900608	Non-Conventional Energy Resources
900633	Smart Grid: Basics to Advanced Technologies
900605	Waste to Energy Conversion
900636	Foundation of Cloud IoT Edge ML
900637	Design of Power Converters

Electronic

02.05.2023

DEAN (ACADEMICS)
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MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR

(A Govt. Aided UGC Autonomous & NAAC Accredited Institute affiliated to RGPV, Bhopal)

Department of Electrical Engineering

B.Tech. I Semester (Internet of Things) *(for batch admitted in academic session 2022-23)*

S. No.	Subject Code	Category Code	Subject Name	Maximum Marks Allotted							Total Marks	Contact Hours per week			Total Credits	Mode of Teaching	Mode of Exam.	Duration of Exam.
				Theory Slot				Practical Slot										
				End Term Evaluation		Continuous Evaluation		End Sem. Exam	Continuous Evaluation			L	T	P				
				End Sem. Exam	[$]Proficiency in subject /course	Mid Sem. Exam.	Quiz/Assignment		Lab Work & Sessional	Skill Based Mini Project								
1.	2160122	ESC	Computer Programming	50	10	20	20	60	20	20	200	2	1	2	4	Blended	AO	2 Hrs
2.	2100022	ESC	Basic Electrical & Electronics Engineering	50	10	20	20	60	20	20	200	2	1	2	4	Blended	MCQ	1.5 Hrs
3.	2250100	BSC	Linear Algebra	50	10	20	20	-	-	-	100	3	1	-	4	Offline	PP	2 Hrs
4.	2220121	DC	Basics of Internet of Things	50	10	20	20	-	-	-	100	3	1	-	4	Blended	MCQ	1.5 Hrs
5.	2220122	DC	Digital Electronics and Logic Design	50	10	20	20	-	-	-	100	2	1	-	3	Blended	PP	2 Hrs
Total				**250**	**50**	**100**	**100**	**120**	**40**	**40**	**700**	**12**	**5**	**4**	**19**	-	-	-
7.	3000004	Natural Sciences & Skills	Language	50	10	20	20	30	10	10	150	1	-	2	GRADE	Blended	MCQ	1.5 Hrs
Induction programme of three weeks (MC): Physical activity, Creative Arts, Universal Human Values, Literary, Proficiency Modules, Lectures by Eminent People, Visits to local Areas, Familiarization to Dept./Branch & Innovations.																		

[$]Proficiency in course/subject – includes the weightage towards ability/ skill/ competency /knowledge level /expertise attained etc. in that particular course/subject

Natural Sciences& Skills: Engineering Physics / Engineering Chemistry / Environmental Science/ Language

Credits of Natural Sciences & Skills will be added in the VI Semester

MCQ: Multiple Choice Question **AO:** Assignment + Oral **OB:** Open Book **PP:** Pen Paper **SO:** Submission + Oral

02.03.2023

DEAN (ACADEMICS)
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MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR

(A Govt. Aided UGC Autonomous & NAAC Accredited Institute affiliated to RGPV, Bhopal)

Department of Electrical Engineering

B.Tech. II Semester (Internet of Things) *(for batch admitted in academic session 2022-23)*

S. No.	Subject Code	Category Code	Subject Name	Maximum Marks Allotted							Total Marks	Contact Hours per week			Total Credits	Mode of Teaching	Mode of Exam	Duration of Exam
				Theory Slot				Practical Slot										
				End Term Evaluation		Continuous Evaluation		End Sem. Exam	Continuous Evaluation			L	T	P				
				End Sem. Exam	[$]Proficiency in subject /course	Mid Sem. Exam.	Quiz/Assignment		Lab Work & Sessional	Skill Based Mini Project								
1.	2220221	DC	Operating System	50	10	20	20	-	-	-	100	2	1	-	3	Blended	~~PP~~ MCQ	2 Hrs
2.	2220222	DC	Sensor Technology	50	10	20	20	60	20	20	200	2	1	2	4	Blended	PP	2 Hrs
3.	2220223	DC	Data Structures	50	10	20	20	60	20	20	200	2	1	2	4	Blended	PP	2 Hrs
4.	2220224	DC	Python Programming	50	10	20	20	60	20	20	200	2	1	2	4	Blended	AO	2 Hrs
5.	2250106	BSC	Probability & Random Process	50	10	20	20	-	-	-	100	3	1	-	4	Offline	PP	2 Hrs
Total				**250**	**50**	**100**	**100**	**180**	**60**	**60**	**800**	**11**	**5**	**6**	**19**	-	-	-
6.	3000003	**Natural Sciences & Skills**	Environmental Engineering	50	10	20	20	30	10	10	150	1	-	2	GRADE	Blended	MCQ	1.5 Hrs
Summer Internship Project – I (Institute Level) (Qualifier): Minimum two-week duration: Evaluation in III Semester.																		

[$]Proficiency in course/subject – includes the weightage towards ability/ skill/ competency /knowledge level /expertise attained etc. in that particular course/subject

Natural Sciences& Skills: Engineering Physics / Engineering Chemistry / Environmental Science/ Language

Credits of Natural Sciences & Skills will be added in the VI Semester.

MCQ: Multiple Choice Question **AO:** Assignment + Oral **OB:** Open Book **PP:** Pen Paper **SO:** Submission + Oral

02.03.2023

DEAN (ACADEMICS)
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MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR

(A Govt. Aided UGC Autonomous & NAAC Accredited Institute affiliated to RGPV, Bhopal)

Department of Electrical Engineering

B.Tech. IV Semester (Internet of Things)

For batch admitted in Academic Session 2021-2022

S. No.	Subject Code	Category Code	Subject Name	Maximum Marks Allotted							Total Marks	Contact Hours per week			Total Credits	Mode of Teaching (Offline/Online)	[55]Mode of Exam
				Theory Slot				Practical Slot									
				End Sem.		Mid Sem. Exam	Quiz/ Assignment	End Sem	Lab Work & Sessional	Skill Based Mini Project		L	T	P			
				End Term Evaluation	$Proficiency in subject /course												
1.	220401	DC	Data Base Management System	50	10	20	20	60	20	20	200	2	1	2	4	Blended	MCQ
2.	220402	DC	Computer Networks & Protocols	50	10	20	20	-	-	-	100	3	1	-	4	Blended	PP
4.	220404	DC	Microprocessor & Embedded Systems	50	10	20	20	60	20	20	200	3	-	2	4	Blended	PP
5.	220405	MC	Network and Web Security	50	10	20	20	-	-	-	100	3	-	-	3	Blended	PP
6.	220407	DC	Software Engineering	50	10	20	20	60	20	20	200	3	-	2	4	Blended	PP
7.	220406	DLC	Programming with Python	-	-	-	-	60	40	-	100	-	-	2	1	Offline	SO
8.	200xxx	CLC	Novel Engaging Course	-	-	-	-	50	-	-	50	-	-	2	1	Interactive	SO
Total				**250**	**50**	**100**	**100**	**230**	**80**	**40**	**850**	**14**	**2**	**10**	**21**	-	-
9.	1000001		Indian Constitution & Traditional Knowledge	50	10	20	20	-	-	-	100	2	-	-	Grade	Online	MCQ

[55]**MCQ:** Multiple Choice Question [55]**AO:** Assignment + Oral [55]**PP:** Pen Paper [55]**SO:** Submission + Oral

Mode of Teaching						Mode of Examination					Total Credits
Theory				Lab	NEC	Theory			Lab	SIP/ SLP/ NEC	
Offline	Online	Blended		Offline	Interactive	PP	AO	MCQ	SO	SO	
		Offline	Online								
-	-	11	05	03	01	13	-	03	03	01	20
-	-	55%	25%	15%	5%	65%	-	15%	15%	5%	Credits %

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Electrical Engineering Department

Scheme of Evaluation

B. Tech. VI Semester (Internet of Things)

For batch admitted in academic session 2020-21

S. No.	Subject Code	Category Code	Subject Name	Maximum Marks Allotted									Total Marks	Contact Hours per week			Total Credits	Mode of Teaching	^{SS}Mode of Exam
				Theory Slot				Practical Slot			MOOCs			L	T	P			
				End Term Evaluation		Continuous Evaluation		End Sem. Exam.	Continuous Evaluation		Assignment	Exam							
				End Sem. Exam.	$^{\$}$Proficiency in subject /course	Mid Sem. Exam.	Quiz/ Assignment		Lab work & Sessional	Skill Based Mini Project									
1.	220601	DC	Soft Computing Techniques	50	10	20	20	60	20	20	-	-	200	3	-	2	4	Blended	PP
2.	220602	DC	Software Engineering	50	10	20	20	60	20	20	-	-	200	3	-	2	4	Blended	PP
3.	220651/2/3/4	DE	Departmental Elective* (DE-1)	-	-	-	-	-	-	-	25	75	100	3	-	-	3	Blended	MCQ
4.	9101**	OC	Open Category (OC-1)	50	10	20	20	-	-	-	-	-	100	3	-	-	3	Blended	PP
5.	220603	MC	AI & ML	50	10	20	20	60	20	20	-	-	200	3	-	2	4	Blended	MCQ
6.	220604	DLC	Minor Project-II	-	-	-	-	60	40	-	-	-	100	-	-	4	2	Offline	SO
7.	200XXX	CLC	Novel Engaging Course (Informal Learning)	-	-	-	-	50	-	-	-	-	50	-	-	2	1	Blended	SO
Total				**200**	**40**	**80**	**80**	**230**	**80**	**40**	**25**	**75**	**850**	**15**	**-**	**12**	**21**	-	-
8.		MAC	Intellectual Property Rights (IPR)	50	10	20	20	-	-	-	-	-	100	2	-	-	GRADE	Online	MCQ

Summer Internship-III (On Job Training) for Four weeks duration: Evaluation in VII Semester

Additional Course for Honours or minor Specialization	Permitted to opt for maximum two additional courses for the award of Honours or Minor specialization

$^{\$}$proficiency in course/subject-includes the weightage towards ability/skill/competence/knowledge level/ expertise attained etc. in that particular course/subject.

^{SS}MCQ: Multiple Choice Question ^{SS}AO: Assignment + Oral ^{SS}PP: Pen Paper ^{SS}SO: Submission + Oral

*Course run through SWAYAM/NPTEL/ MOOC Learning Based Platform with credit transfer

*This course run through SWAYAM/NPTEL/ MOOC platform

DE-1 (SWAYAM/NPTEL/ MOOC platform)		Open Category (OC-1)	
220651	Introduction To Industry 4.0 and Industrial Internet of Things	910104	Energy Conservation & Management
220652	Data Mining	910105	Biomedical Instrumentation
220653	Foundation of Cloud IoT Edge ML	910106	Industrial Automation
220654	Industrial Automation and Control	910107	Solar PV Systems : Design and Economics

02-03-2023

DEAN (ACADEMICS)
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Electrical Engineering Department

Summary of BoS Meeting held on 14.12.2022

Table 1: List of Courses where syllabus revision was carried out during

Course code	Course name	Year of Introduction	Year of revision	Percentage of Syllabus content added or replaced	Agenda Item No	Page No	Link
-	-	-	-	-	-	-	-

Table 2: List of courses having Focus on Employability/ entrepreneurship/ skill development

Name of the Course	Course Code	Name of the Programme (UG/PG)	Activities with direct bearing on Employability/ Entrepreneurship/ Skill development	Year of introduction
Artificial Intelligence & Machine Learning	130605/ 220603	UG	Artificial Intelligence and Machine Learning is poised to impact every industry, and may eventually need such experts. While machine learning jobs present great opportunities, gaining the required skills can be challenging. So, the objective of the course is to provide the fundamental knowledge of Artificial Intelligence, and Machine Learning.	2023
Programming with Python	130414/ 220406	UG	Develop skills required for data-centric careers, pursuing jobs like data analyst, database developer, or data scientist	2022
Renewable Energy Lab	130415	UG	Understand the perspective of smart and renewable techniques for power system, fulfill job requirements	2022

Vishal

14.12.22

Table 3: New courses introduced for Programmes Offered by Department

Name of the Course	Course code	Name of the Programme (UG/ PG)	Activities with direct bearing on Employability/ Entrepreneurship/ Skill development	Year of introduction
Artificial Intelligence & Machine Learning	130605/ 220603	UG (EE, EE-IoT)	Artificial Intelligence and Machine Learning is poised to impact every industry, and may eventually need such experts. While machine learning jobs present great opportunities, gaining the required skills can be challenging. So, the objective of the course is to provide fundamental knowledge of Artificial Intelligence, and Machine Learning.	2023
Soft Computing Techniques	220601	UG (EE-IoT)	Soft computing is an important branch of computational intelligence, where fuzzy logic, probability theory, neural networks, and genetic algorithms are synergistically used to mimic the reasoning and decision-making of a human.	2023
Software Engineering	220602/ 220407	UG (EE-IoT)	Software engineering is the branch of computer science that deals with the design, development, testing, and maintenance of software applications. Software engineers apply engineering principles and knowledge of programming languages to build software solutions for end users	2023
Data Mining	220652 (DE1)	UG (EE-IoT)	Data mining is most useful in identifying data patterns and deriving useful business insights from those patterns. To accomplish these tasks, data miners use a variety of techniques to generate different results.	2023
Foundation of Cloud IoT Edge ML	220652 (DE1)	UG (EE-IoT)	Edge Computing is a distributed computing framework that brings enterprise applications closer to data sources such as IoT devices or local edge servers.	2023
Industrial Automation & Control	220654/1 30659 (DE1)	UG (EE, EE-IoT	Almost every industry uses automation and there is a great demand for it.	2023

14.12.22