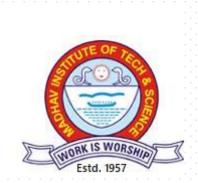


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Department of Electronics Engineering



Online Board of Studies Meeting of Electronics Engineering & Electronics and Telecommunication Engineering held on 6 December 2024







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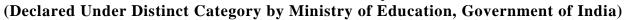
Department of Electronics Engineering

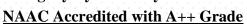
Agenda of the BoS Meeting

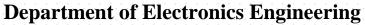
name) of of introduction revision added or replaced No. Data Communication 14241201/20241201 2022 6-12-2024 15% Item 3 7 Annexure II		Co	urses where r	evision was	carried out*			
Communication 14241201/20241201 2022 6-12-2024 15% Item 3 / Annexure II New Courses added*	 Course	Code	of	of	of content added or	Item		Link of relevant documents/minutes
(Course Course Activities/contents Agenda Page Link of relevant documents/minutes	1424120	01/20241201	2022	6-12-2024	15%	Item 3	7	Annexure II
	1		New	Courses ad	lded [*]		•	
increasing skill and No. employability		which have increasing	e a bearing on skill and	Item	Page Link (of relevant	docum	ents/minutes



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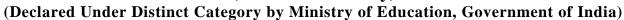
	BoS Agenda Items
Item 1	To confirm the minutes of previous BoS meeting held in the month of September 2024. The minutes of previous BOS held on 11 th Sept 2024 has been finalized.
Item 2	To review the scheme structure for the Batch admitted in 2024-25 academic session under the Madhav Institute of Technology & Science-Deemed University (MITS-DU) structure. The scheme structure of B.Tech. II nd semester for the Batch admitted in 2024-25 underthe Madhav Institute of Technology & Science-Deemed University (MITS-DU) has been discussed and finalized. Annexure I
Item 3	To review and finalize the syllabi of all courses of B. Tech. II Semester (for batch admitted in 2024-25) under the flexible curriculum along with their COs. The syllabi for all courses of B. Tech II nd Semester (for batch admitted in 2024-25) under the flexible curriculum along with their COs has been discussed and finalized. Annexure II
Item 4	To review and finalize the Experiment list/ Lab manual and Micro Project-II for all the Laboratory Courses to be offered in B. Tech. II Semester (for batch admitted in 2024-25). The Experiment list/ Lab manual for all the Laboratory Courses and Micro Project-II to be offered in B.Tech. II nd semester has been discussed and finalized. Annexure III
Item 5	To review and finalize the syllabi of II semester PG Programme under the Madhav Institute of Technology & Science-Deemed University (MITS-DU) (M.E./M.Tech./MCA/MBA/MUP) along with their Course Outcomes (COs). NA
Item 6	To review and finalize the syllabus/module of Classified Novel Engaging Course to be offered in II semester of PG programme. NA
Item 7	Any other Matter

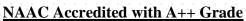
The following suggestions were provided by the external BOS members:

- 1. As per the suggestion given by external members, Communication Networks has been removed.
- 2. To increase the admissions in PG programs, name of the programs can be updated as per the current trend.



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Department of Electronics Engineering



The Board of Studies (BoS) meeting of the Electronics Engineering department was held on 6th Dec 2024 at 1:00 PM onwards. Following external and internal members have attended online meeting through google link: https://meet.google.com/ozm-ehzm-mfn

Following members of BoS Electronics Engineering department have attended the meeting

- 1. Dr. Vandana Vikas Thakare, Professor & Head(Chairperson)
- 2. Dr. Aditya Trivedi, Professor, Department of Information Technology, ABV-IIITM, Gwalior
- 3. Dr. Urmila Patil, Professor, Department of Electronics and Communication, Dr.D.Y.Patil Institute of Technology, Pune
- 4. Dr. P.KSinghal, Professor, Member
- 5. Dr. LaxmiShrivastava, Professor, Member
- 6. Dr. R. P. Narwaria, Assistant Professor, Member
- 7. Dr. Karuna Markam, Associate Professor, Member
- 8. Prof Madhav Singh, Assistant Professor, Member
- 9. Prof Pooja Sahoo, Assistant Professor, Member

Invited Members of the Department have also attended the BoS meeting

- 1. Prof D. K. Parsedia, Assistant Professor
- 2. Dr. Vikas Mahor, Assistant Professor
- 3. Dr. Rahul Dubey, Assistant Professor
- 4. Dr. Hemant Choubey, Assistant Professor
- 5. Dr. Deepak Batham, Assistant Professor
- 6. Dr. Varun Sharma, Assistant Professor
- 7. Dr.Shubhi Kansal, Assistant Professor
- 8. Dr.Himanshu Singh, Assistant Professor
- 9. Dr. Varun Mishra, Assistant Professor
- 10. Dr. Mukesh Kumar Mishra, Assistant Professor
- 11. Dr.Dablu Kumar, Assistant Professor
- 12. Prof. Prateek Bhadauria, Assistant Professor
- 13. Dr. R. Jenkin Suji, Assistant Professor
- 14. Dr. Jaydeep Parmar, Assistant Professor





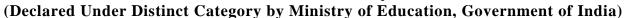
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Annexure II

Itom	To review the scheme structure for the Batch admitted in 2024-25 academic session under the
Item	To review the scheme structure for the Batch admitted in 2024-25 academic session under the Madhav Institute of Technology & Science-Deemed University (MITS-DU) structure



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Department of Electronics Engineering

Scheme of Evaluation

B. Tech. I Semester (EL/ET) (for batch admitted in academic session 2024-25)

					Ma Theory	aximum Ma Block	rks Allotte	ed Practica	l Block			tact H er wee				Mode	Duration
S. No.	Course Code	Category Code	Course Name	Cont	inuous Evalu	ation	- Major	Continuous Evaluation		Total Marks				Total Credits	Mode of	of Major	of Major
				Minor Evaluation I	Minor Evaluation II	Quiz/ Assignment	Evaluation	Lab Work & Sessional	- Major Evaluation		. L	T	P		Learning	ion.	t Evaluatio n.
1.	14241101/20241101	DC	Instrumentation & Sensors	20	20	30	30	<u>-</u>	- : - : - : - : - :	100	3			3	Face to Face	MCQ	2 Hrs
2.	14241102/20241102	ESC	Computer Programming	20	20	30	30			100	2			2	Face to Face	MCQ	2 Hrs
3.	14241103/20241103	DC	Electronic Devices	20	20	30	30	· · · · · · · · · · · · · · · · · · ·		100	2	1		3	Face to Face	PP	2 Hrs
4.	14241104/20241104	DC	Network Theory	20	20	30	30		· . · . <u>-</u> · . · .	100	2	1		3	Face to Face	PP	2 Hrs
5.	14241105/20241105	ESC	Basic Electrical & Electronics Engineering	20	20	30	30	: .	· · · · ·	100	2			2	Face to Face	MCQ	2 Hrs
6.	14241106/20241106	DLC	Computer Programming Lab	-:-:- : -::-:		· . · . · . · . · . · . · . · . · . · .	· · · · · · · · · · · · · · · · · · ·	70	30	100	. · . · .		2	1.	Experimental	AO	.
7.	14241107/20241107	DLC	Electrical & Electronics Engineering Lab			· · · · · · · · · · · · · · · · · · ·	:::: <u>=</u> ::::	70	30	100	: - : :		2	1	Experimental	AO	: : : : : : :
8.	14241108/20241108	SP	Semester Proficiency ^{\$}	-:-:- : -:-::	- : - : - : - : - : : :	· . · . · . · . · . · . · . · . · . ·	· 	50	-:-:-:-	50	: - - - :		2	1.1.	Face to Face	SO	.
9.	14241109/20241109	PBL	Micro Project-I	: : : : <u>-</u> : : : : :	.		· · · · · · · · · · · · · · · · · · ·	70	30	100	· ·		2	1	Experiential	SO	- : - : - : - : -
10.	14241110/20241110	ESC	Engineering Physics Lab		· · · · · · - · · · · · ·	· . · . · . · . · . · .		70	30	100			2	1 .	Experimental	AO	
11.	NECXXXXX	NEC	Novel Engaging Course (Activity Based Learning)		· · · · · · · ·	· · · · · · · · ·		50		50		1	-	1	Interactive	so	
		To	tal	100	100	150	150	380	120	1000	. 11 .	.03	10.	. 19	• . • . • . • . • . •	· · · · · · ·	.
12.	14241111/ 20241111 MAC	Universal (UHVPE)	Human Values & Professional Ethics	20	20	30	30			100	2			GRADE	Blended	MCQ	1.5 Hrs
13.	14241112/ 20241112 MWS	Mandato	ry Workshop on Indian Constitution and T	raditional Kno	owledge at Dep	oartment Level	(Duration: 7	Гwo Days)						GRADE	Interactive	MCQ	

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.

Skill Internship Program (Soft Skill): Minimum 45 hours duration: To be credited in II Semester.

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

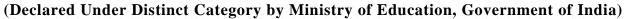
*Micro Project-I will be presented and evaluated through an interdisciplinary project evaluation committee.

			U		/ 1 3										
1	HSMC	BSC	ESC	DC	DE	SPC	OC DLC	NEC	SP	SIP	SLP	PDC	PBL	MAC	MWS
	0	0	3	3	0	0	0 2		1 1	0	0	0	1	1	1
Ī		Theory NEC		Mode of Le	arning					Mode of Exa	amination				
· [Theo	ory	NEC			Lab			Theory		NEC		Lab	To	tal Credits
	Face to Face	Online	Interactive	Face to Face	Blended	Experiential	Experimental	PP	MCQ	ОВ	so	AO	so	10	nai Creuns
- [13	0	1		0	1	3	6	7	0	1 1	3	3		39
٠	68.42%	0%	5.26%	5.26%	0%	5.26%	15.78%	31.57%	36.84 %	0%	5.26%	15.78%	15.78%		Credits %

Semester Proficiency- includes the weightage towards ability/ skill/ competency /knowledge level /expertise attained etc. in the semester courses.









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Department of Electronics Engineering

Scheme of Evaluation

B. Tech. II Semester (EL/ET)(for batch admitted in academic session 2024-25)

					N	Iaximum M	Iarks Allott	ed					: : : :				Duration of
		Categor			Theor	y Block		Practica	l Block	Total		tact H er we		Total	Mode	Mode of	Major Evaluatio n.
S. No.	Course Code	y Code	Course Name	Con	tinuous Evalu	ation		Continuous Evaluation		Marks				Credits	of Learning	Major Evaluati	
				Minor Evaluation I	Minor Evaluation II	Quiz/ Assignment	Major Evaluation	Lab Work & Sessional	Major Evaluation				P			on.	
1.	14241201/20241201	DC	Data Communication	20	20	30	30	-	- : : : : : : : :	100	- 3 -	: - : -:	- 1 - 1 -	3	Face to Face	PP	2 Hrs
2.	14241202/20241202	DC	Electronic Circuits	20	20	30	30			100	2	1		3	Face to Face	MCQ	2 Hrs
3.	14241203/20241203	DC	Signals and Systems	20	20	30	30	- : - : - <u>-</u> - : - : -		100	2	1		3	Face to Face	MCQ	2 Hrs
4.	14241204/20241204	DC	Digital Circuits and Systems	20	20	30	30			100	2	1		3	Face to Face	MCQ	2 Hrs
5.	14241205/20241205	BSC	Linear Algebra and Differential Equation	20	20	30	30	- : - : : - : - : - : - : - : - :		100	3		- 2	3	Face to Face	PP	2 Hrs
6.	14241206/20241206	DLC	Digital Logic Design Lab				· . · . · . · . · . · . · . · . · . · .	70	30	100	12.0		2	1	Experimental	, AO	.
7.	14241207/20241207	DLC	Problem Solving through Python Programming	· · · · · · · · · · · · · · · · · · ·	· . · . · . · . · . · . · . · . · . · .			70	30	. 100	1.1	200	2.	1	Experimental	AO.	· . · . · . · . ·
8.	14241208/20241208	SP.	Semester Proficiency ^{\$}			· . · . · <u>-</u> . · . · .	· . · . · . <u>-</u> . · . · .	50	. · . · . <u>-</u> . · . ·	50	. ' '		2	1	Face to Face	SO a	
9.	14241209/20241209	PBL	Micro Project-II#	.	1.1.1			70	30	100	·' .	. '- '	2.	1	Experiential	SO.	· · · · · · · · · ·
10.	14241210/20241210	ESC	Engineering Chemistry Lab			· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · ·	70	30	100	. ' '	· :	2	1	Experimental	AO	
11.	14241211/20241211	HSMC	Language Lab					70	30	100	10-20		2	1	Blended	AO	
12.	NECXXXXX	NEC	Novel Engaging Course (Activity Based Learning)	: .	· · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	: : : : : : : : : :	50		50		. 1	: : : :	1	Interactive	so	
13.	SIP1XXXX	SIP	Skill Internship Program (Soft Skill)	· · · · · · · · · · · · · · · · · · ·			: - : - : - : - : - : -	60		60				2**	Experiential	SO	- : - : - : - : -
			Total	100	100	150	150	510	150	1160	12	04	12	24	-	· .	
14.	14241212/20241212	MAC	Sustainability & Environmental Science	20	20	30	30	.	.	100	2	: . .	- 1-1-	GRADE	Blended	MCQ	1.5Hrs
15.		. MWS	Mandatory Workshop on Indian Knowledge Syst	em at Departm	ent Level (Dura	tion: Two Days)						1.1.1	GRADE	Interactive	, MCQ	· . · . - . · . ·

Semester Proficiency—includes the weightage towards ability/skill/competency/knowledge level/expertise attained etc. in the semester courses,

MCO: Multiple Choice Question AO: Assignment + Oral PP: Pen Paper SO: Submission + Oral

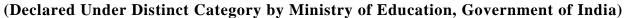
#Micro Project-II will be presented and evaluated through an interdisciplinary project evaluation committee.

**These credits will be transferred from Skill Internship Program (Soft Skill).

	HSMC	BSC	ESC	DC	DE	SPC	OC DLC	NEC	SP	SIP	SLP	PDC	PBL	MAC	MWS
L	1	1 -	- 1	4	0	0	0 2	- 1	- 1 - 1	· 1 · · · · ·	0	0	1 - 1	- 1	1
				Mode of Le	arning						Mode	of Examination	on		
	Theo	ory	NEC			Lab			Theory		NEC	I	ab	То	tal Credits
	Face to Face	Online	Interactive	Face to Face	Blended	Experiential	Experimental	PP	MCQ	ОВ	so	AO	so		tai Creuits
-	15	0	1	1	1	3	3	6	9	0	1	3	3		46
Г	62.5%	0%	4.16%	4.16%	4.16%	12.5%	12.5%	25%	37.5 %	0%	4.16%	12.5%	12.5%		Credits %



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Department of Electronics Engineering

Scheme of Evaluation

B. Tech. III Semester (EL/ET) (for batch admitted in academic session 2024-25)

						Maximum N	Iarks Allotted				Cor	ntact He	ours				
					Theor	y Block		Practic	al Block		1	oer wee	k		Mode	Mode	Duration of
S. No.	Course Code	Category Code	Course Name	Co	ontinuous Evalu	ation		Continuous Evaluation		Total Mark				Total Credits	of Learning	of Major Evaluatio	Major Evaluation
				Minor Evaluation I	Minor Evaluation II	Quiz/ Assignment	- Major Evaluation	Lab Work & Sessional	Major Evaluation		L	T	P			n.	
1.	14242101/20242101	BSC	Probability and Random Processes	20	20	30	30	· · · · · · · · ·		100	3	1	- 3- 3-	3	Face to Face	PP	2 Hrs
2.	14242102/20242102	DC	Data Structures	20	20	30	30	· · · · · · · · · · · · · · · · · · ·		100	2	1.		3	Face to Face	MCQ	2 Hrs
3.	14242103/20242103	DC	Analog Communication	20	20	30	30	· · · · · · ·		100	2	. 1.	: . . :	3	Face to Face	MCQ	2 Hrs
4.	14242104/20242104	DC	Analog Integrated Circuits	20	20	30	30		· · · · · · · · · · · · · · · · · · ·	100	2 - 2	1	- : - : -	3	Face to Face	PP	2 Hrs
5.	14242105/20242105	DC	Communication Network and Transmission Line	20	20	30	30	· · · · · · · · ·	· · · · · · · · ·	100	2	1		3	Face to Face	MCQ	2 Hrs
6.	14242106/20242106	DLC	Analog Communication Lab					70	30	100	- 2- 1-		2	1	Experimental	AO	· · · · · · · · ·
7.	14242107/20242107	DLC	Analog Integrated Circuits Lab		: : : : : : : : : :	- : - : - : - : - : -		70	30	100	- :- :-	. .	2	1	Experimental	AO	
8.	14242108/20242108	SP	Semester Proficiency ^{\$}	- : - : - : - : : :			· · · · · · · ·	50	- : - : - - - : - : -	50	: - : - :		2	-1-1	Face to Face	so	·
9.	14242109/20242109	PBL	Macro Project-I#	· . · . · . · . · · · · · · ·	: : : : : : : : :	-:-:-		70	30	100	-] -] -	1.5	2	1	Experiential	SO	· . · . · . · . ·
10.	14242110/20242110	SLP	Self-learning/Presentation ^{SSS} (SWAYAM/NPTEL/MOOC)	· · · · · · · ·	: : : : : : : : : :			40		40			2	1	Mentoring	so	· · · · · · · ·
.11.	NECXXXXX	NEC	Novel Engaging Course (Activity Based Learning)			- : - : - - : : - : -		50		50		1	: - : :	1	Interactive	so	
		To	otal	100	100	150	150	350	90	940	- [11] -	05	10	21	· · · · · · · · · · · · · · · · · · ·		
12.	14242311/20 242311 MAC	Cyber Sec	urity	20	20	30	30			100	2			GRADE	Blended	MCQ	1.5Hrs
13.	MWS	Mandator	y Workshop on Internet of Things(IoT) at Depar	tment Level (D	uration: Two Da	nys)								GRADE	Interactive	MCQ	

Semester Proficiency- includes the weightage towards ability/ skill/ competency /knowledge level /expertise attained etc. in the semester courses

MCQ: Multiple Choice Question

AO: Assignment + Oral **PP:** Pen Paper **SO:** Submission + Oral

OB: Open Book

^{\$\$\$} Compulsory registration for one online course using SWAYAM/NPTEL/ MOOC, evaluation through attendance and presentation.

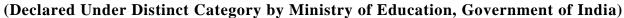
ÌГ	HSMC	BSC	ESC	DC	DE	SPC	OC .	DLC	NEC	SP	SIP	SLP	PDC	PBL	MAC	MWS
	0	1	0	4	0	0	0	2	1	1	0	0	0	1	1	1

٠ [Mode of Le	arning					Mode of E	xamination			
- [The	ory	NEC .			Lab			Theory		NEC	L	ab	Total Credits
	Face to Face	Online	Interactive	Face to Face	Blended	Experiential	Experimental	PP	MCQ	ОВ	so	AO	so	Total Credits
1	15	0	1	1		1	2	6	9	0	1	2	4	42
1	71.42%	0%	4.76%	4.76%	4.16%	4.76%	9.5%	28.57%	42.85 %	0%	4.16%	9.52%	19.04%	Credits %

^{*}Macro Project-I will be presented and evaluated through an interdisciplinary project evaluation committee.



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Department of Electronics Engineering

Scheme of Evaluation

B. Tech. IV Semester (EL/ET)(for batch admitted in academic session 2024-25)

					N	Iaximum M	arks Allot	ted			Con	itact H	Iours				
					Theory	Block		Practical	Block		r	er we	ek		Mode	Mode of	Duration of
S. No.	Course Code	Category Code	Course Name	Cont	inuous Evalı	uation	Mojan	Continuous Evaluation	Major	Total Marks				Total Credits	of Learning	Major	~=
				Minor Evaluation I	Minor Evaluation II	Quiz/ Assignment	- Major Evaluation	Lab Work & Sessional	- Major Evaluation		L	T.	P			ation.	n.
1.	14242201/20242201	DC	Linear Control Theory	20	20	30	30			100	2	1	- [-]	3	Face to Face	MCQ	2 Hrs
2.	14242202/20242202	DC	Microprocessor and Interfacing	20	20	30	30	· · · · · · · · · · · · · · · · · · ·	· · · · · · <u>-</u> · · · · ·	100	2 .	1.		3	Face to Face	MCQ	2 Hrs
3.	14242203/20242203	DC	Digital Communication	20	20	30	30	· · · · · · · · · · · · · · · · · · ·	· · · · · · ·	100	2	1		3	Face to Face	MCQ	2 Hrs
4.	14242204/20242204	DC	Electromagnetic Fields	20	20	30	30			100	2 -	4		3	Face to Face	PP	2 Hrs
5.	14242205/20242205	DC	VLSI Design	20	20		30	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	100	3		1.2	3	Face to Face	PP.	2 Hrs
6.	14242206/20242206	DLC	Microprocessor and Interfacing Lab	<u>.</u>		- : - : - : - : - : -	- : - : - : - : - : : :	70	30	100			2	1 1	Experimental	AO	· . · . · . · . · . ·
7.	14242207/20242207	DLC	Digital Communication Lab					70	30	100		. ' ' .	2	1	Experimental	AO	· . · . <u>-</u> . · . ·
8.	14242208/20242208	DLC	VLSI Design Lab	· . · . · . · . · .	· . · . · . <u>·</u> . · . · .	<u>-</u>		70	30	100	· · .		2	1	Experimental	AO "	
9.	14242209/20242209	SP	Semester Proficiency ^{\$}			- : - : - : - : - : -	- : - : - : - : - : - : : - : : : : : :	50	· · · · · · · · · · · · · · · · · · ·	50	- : - : ·		2	-1-1	Face to Face	SO	
10.	14242210/20242210	PBL	Macro Project-II#			· · · · · · · · · · · · · · · · · · ·	· . · . · <u>-</u> . · . · .	70	30	. 100	· ·	. 121.	2	1 . 1	Experiential	SO	
11.	14242211/20242211	PC	Professional Certification	· . · . · .	· . · . · · . · . · . · . · . · .	. · . · . · . · . · .		50	· . · . · . · . · .	50	· · ·		2	1	Blended	so	
12.	NECXXXXX	NEC	Novel Engaging Course (Activity Based Learning)		· · · · · · · · · · · · · · · · · · ·	· · · · · · · · ·	· · · · · · · ·	50	· · · · · · ·	50	: - - : :	1		1	Interactive	so	
13.	SIP3XXXX	SIP	Skill Internship Program		.	-:-:-		60		60	- 1 - 1 -			2**	Experiential	SO	
		To	otal	100	100	150	150	490	120	. 1110	. 11.	. 05 .	12	24		. ' . ' . ' .	
14.	14242212/20242212	MAC	Project Management, Economics & Financing	20	20	30	30			100	2			GRADE	Blended	MCQ	1.5 Hrs
15.	14242213/20242213	MWS	Mandatory Workshop on Computer Vision at I	Department Le	vel (Duration: T	wo Days)								GRADE	Interactive	MCQ	
16.		MWS	Mandatory Workshop on Life Skills at Departm	nent Level (Du	ration: Two Day	vs)								GRADE	Interactive	MCQ	
			Summer Semes	ter of six-eight	week duration	will be conducted	for makeup o	f previous semeste	r examination.				1.1.1				

Additional Course for Honours or Minor Degree: Permitted to opt for maximum two additional courses for the award of Honours or Minor Degree

^{**} These credits will be transferred from Skill Internship Program.

PC	BSC	ESC	DC	DE	SPC	OC	DLC	NEC	SP	SIP	SLP	PDC	PBL	MAC	MWS
1	0	0	5	0	0	0	3	1	1 1 1 1	1 1 1	0	0	1	1	2

OB: Open Book

				Mode of Le	arning					Mode of E	xamination			
	The	ory	NEC			Lab			Theory		NEC	· . · . · . · . L	ab	Total Credits
	ce to	Online	Interactive	Face to Face	Blended	Experiential	Experimental	PP	MCQ	OB	so	AO	so	Total Credits
	15		1	1	0		3	6	9	0	1	3	5	42
62	2.5%	0%	4.16%	4.16%	0%	4.16%	9.5%	25%	37.5 %	0%	4.16%	12.5%	20.83%	Credits %

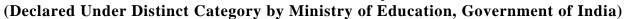
Semester Proficiency—includes the weightage towards ability/ skill/ competency /knowledge level /expertise attained etc. in the semester courses

MCQ: Multiple Choice Question AO: Assignment + Oral PP: Pen Paper SO: Submission + Oral

[#] Macro Project-II will be presented and evaluated through an interdisciplinary project evaluation committee.









NAAC Accredited with A++ Grade

Department of Electronics Engineering

Scheme of Evaluation

B. Tech. V Semester (EL)(for batch admitted in academic session 2024-25)

						M	laximum N	Aarks Allot	ted				Con	tact H	ours				
					Theory	Block		Practical	Block	МО	OCs		p	er wee	k			Mode	Duration
S. No.	Course Code	Category Code	Course Name	Conti	nuous Eval	uation	Major	Continuous Evaluation	Major			Total Marks				Total Credits	Mode of Learning	Major Evalu	Major Evaluatio
				Minor Evaluation I	Minor Evaluation II	Quiz/ Assignment	Evaluation	Lab Work & Sessional	Evaluation	Assignment	Exam		L	Т	P			ation.	n.
1.	14243101	DC DC	Digital Signal Processing	20	20	30	30				:::: : ::::	100	2	1		3	Face to Face	PP	2 Hrs
2.	14243102	DC	Embedded Systems	20	20	30	30		· · · · · · · · · · · ·		- : - : - : - : - :	100	2	1 -1		3	Face to Face	PP	2 Hrs
3.	14243103	DC	Data Science	20	20	30	30	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · ·	: · : · : · : · :	100	2	1	: - <u>-</u> - :	3	Face to Face	MCQ	2 Hrs
4.	142431XX	DE	Departmental Elective* (DE-1)				· . · . · . · . · .			25	75	100	3	:	- :- :	3	Online	MCQ	3 Hrs
5.	14243104	SPC	Specialization Course (SPC-1)	20	20	30	30		· : • : • : • : • : •		-:-:-	100	2	-1 -	- : - : -	3	Face to Face	MCQ	2 Hrs
6.	14243105	DLC	Digital Signal Processing Lab			· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	70	30	· · · · · · · · · · · ·	: · · · : · · · ·	100	- : - : -	- 1	2	1	Experimental	AO	
7.	14243106	DLC	Data Science Lab		· · · · · · · · · · · · · · · · · · ·		· · · · · · ·	70	30		-:-: - :-:-	100	· - · ·		2	1	Experimental	AO	
8.	14243107	SP	Semester Proficiency ^{\$}		· · · · · <u>-</u> · · · ·			50	· · · · · <u>-</u> · · · · ·		<u> </u>	50	· ·		2	1	Face to Face	. SO	
9.	14243108	PBL	Cornerstone Project			· · · · · -	· · · · · · · · · · · · · · · · · · ·	70	30	· · · · · · -	: : : : <u>-</u> : : : :	100			4	2	Experiential	SO	
		· i · i · i · i · i · i	`otal	80	80	120	120	260	90	25	75	850	11	04	10	20	· . · . · . · . · . · . · . · . · . ·	<u>.</u>	.
10.	14243109	MAC	Supply Chain Management	20	20	30	30		· · · · · · <u>-</u> · · · · ·			100	2	- [-]		GRADE	Blended	MCQ	1.5Hrs
11.		MWS	Mandatory Workshop on Blocke	hain at Depa	rtment Leve	l (Duration:	Two Days)									GRADE	Interactive	MCQ	
			Additional Course for Hor	nours or Mi	nor Degree	: Permitted	l to opt for	maximum tw	o additiona	l courses fo	r the awar	d of Hor	iours	or M	inor l	Degree			

Semester Proficiency—includes the Weightage towards ability/ skill/ competency /knowledge level /expertise attained etc. in the semester courses

MCQ: Multiple Choice Question **AO:** Assignment + Oral

PP: Pen Paper **SO:** Submission + Oral

OB: Open Book

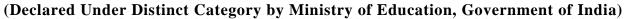
* Course run through SWAYAM/NPTEL/ MOOC Learning Based Platform

SMC	BSC	ESC	DC	DE	SPC	oc	DLC	NEC	SP	SIP	SLP	PDC	PBL	MAC	MWS
 0		0	3	1	1		2	0	1	0	0, , ,		1	1	1

				Mode of Le	earning					Mode of E	xamination			
	The	ory	NEC			Lab			Theory		NEC		ab	Total Credits
	ce to ace	Online	Interactive	Face to Face	Blended	Experiential	Experimental	PP	MCQ	OB	so	AO	so	Total Credits
	2	3	0	1	0	2	2	6	9	0	0	2	3	40
60)%	15%	0%	5%	0%	10%	10%	30%	45 %	0%	4.16%	10%	15%	Credits %









NAAC Accredited with A++ Grade

Department of Electronics Engineering

Scheme of Evaluation

B. Tech. V Semester (ET) (for batch admitted in academic session 2024-25)

						Ma	ximum M	arks Allotte	d				Con	tact H	ours				
		Catago			Theory	Block		Practical	Block	MOO	Cs		p	er wee	k			Mode	Duration
S. No.	Course Code	Catego ry Code	Course Name	Conti	nuous Eval	uation	Major	Continuous Evaluation	Major			Total Marks				Total Credits		of Major Evaluati	
				Minor Evaluation I	Minor Evaluation II	Quiz/ Assignment	Evaluation	Lab Work & Sessional	Evaluation	Assignment	Exam		L	Т	P			on.	n.
1.	20243101	DC	Digital Signal Processing	20	20	30	30	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · ·		· · · · · · · · ·	100	2	1.	- :- :	3	Face to Face	PP	2 Hrs
2.	20243102	DC	Antenna and Wave Propagation	20	20	30	30		- : · : - : · : ·	· · · · · · · · · · ·	· . · . - . · . ·	100	2	1	: - : -:	3	Face to Face	PP	2 Hrs
3.	20243103	DC	Data Science	20	20	30	30	- : - : - : - : - : - : - : - : - : - :	· . · . · . · . · . ·		: : : : : : :	100	2	1		3	Face to Face	MCQ	2 Hrs
4.	202431XX	DE	Departmental Elective* (DE-1)		- : : : <u>-</u> : : : :	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·		- : · : <u>-</u> : · : ·	25	75	. 100	. 3.			3	Online	MCQ	3 Hrs
5.	20243104	SPC	Specialization Course (SPC-1)	20	20	30	30	· · · · · · · · · · · · · · · · · · ·			· · · · - · · · ·	100	2	1		3	Face to Face	MCQ	2 Hrs
6.	20243105	DLC	Digital Signal Processing Lab					70	30		· · · · · ·	100	- <u>-</u> - :		2	1	Experimental	AO	
7.	20243106	DLC	Data Science Lab	: : : ; : : :	<u>-</u>	· . · . · <u>-</u> · . · .	· · · · · · · · · · · · · · · · · · ·	70	30		· . · . · <u>-</u> . · . ·	100	· : <u>-</u> : ·		2	1.	Experimental	AO	
8.	20243107	SP	Semester Proficiency ^{\$}	-1-1-1-1			· . · . <u>-</u> . · . · .	50		· · · · · <u>-</u> · · · · ·		50			2	1.	Face to Face	SO	
9.	20243108	PBL	Cornerstone Project		- : - : : : : : : : : : : : : : : :	:		70	30			100	:		4	2	Experiential	SO	
		To	otal	80	80	120	120	260	90	25	75	850	11	04	10	20	• . • . • . • . • . • . • . • . • . • .		· : · : <u>-</u> : · :
10.	20243109	MAC	Supply Chain Management	20	20	30	30	· . · . · . · . · . · . · . · . · . · .	· · · · · · · · · · · · · · · · · · ·			100	2		- :- :	GRADE	Blended	MCQ	1.5 Hrs
11.		MWS	Mandatory Workshop on Blocke													GRADE	Interactive	MCQ	· · · · · · ·

Additional Course for Honours or Minor Degree: Permitted to opt for maximum two additional courses for the award of Honors or Minor Degree

Semester Proficiency—includes the Weightage towards ability/ skill/ competency /knowledge level /expertise attained etc. in the semester courses MCQ: Multiple Choice Question AO: Assignment + Oral PP: Pen Paper SO: Submission + Oral OB: Open Book

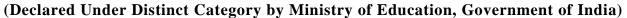
* Course run through SWAYAM/NPTEL/ MOOC Learning Based Platform

SMC	BSC	ESC	DC	DE	SPC	OC	DLC	NEC	SP	SIP	SLP	PDC	PBL	MAC	MWS	
 0		0	3	1	1	0	2	0			0		1	1	1	

			Mode of Lo	earning					Mode of E	xamination			
TI	eory	NEC			Lab			Theory		NEC	L	ab	Total Credits
Face to Face	Online	Interactive	Face to Face	Blended	Experiential	Experimental	PP	MCQ	OB	so	AO	so	Total Credits
12	3	0		0	2	2	6	9	0	0	2	3	40
60%	15%	0%	5%	0%	10%	10%	30%	45 %	0%	4.16%	10%	15%	Credits %



(Deemed University)





NAAC Accredited with A++ Grade

Department of Electronics Engineering

Scheme of Evaluation

B. Tech. VI Semester (EL/ET)(for batch admitted in academic session 2024-25)

						```` <b>`</b>	laximum 1	Marks Allot	ted					ntact I					
					Theory	Block		Practical	Block	MO	OCs		1	er we	ek			Mode	Duration
S. No.	Course Code	Categ ory	Course Name	Contin	uous Eva	luation		Continuous Evaluation				Total Marks				Total Credits	Mode of	of Major	of Major
110.		Code		Minor Evaluation I	Minor Evaluatio n II	Quiz/ Assignment	Major Evaluation	Lab Work & Sessional	Major Evaluation	Assignment	Exam	Walks	L	Т	P	Credits	Learning	Evaluat ion.	Evaluatio n.
1.	14243201/20243201	DC	Mobile Communication and 5G Networks	20	20	30	30				:::: <u>-</u> ::::	100	2	1	: <del>:</del> :	3	Face to Face	MCQ	2 Hrs
2.	14243202/20243202	DC	Artificial Intelligence & Machine Learning	20	20	30	30	-		· · · · · · ·	· · · · · · · · · · · · · · · · · · ·	100	2	1	: <del>:</del> :	3	Face to Face	MCQ	2 Hrs
3.	142432XX/202432X X	DE	Departmental Elective* (DE-2)	· · · · · · ·	· · · · ·		· · · · · · · ·		· · · · · · ·	25	75	100	- 3	: :		3	Online	MCQ	3 Hrs
4.	142432XX/202432X X	ОС	Open Category Course (OC-1)	20	20	30	30	· · · · · · · · · · · · · · · · · · ·	· · · · · · · ·	· · · · · - · · · · ·	· : · : · <del>:</del> · : · :	100	2	1	· : - : ·	3	Face to Face	PP	2 Hrs
5.	14243203/20243203	SPC	Specialization Course (SPC-2)	20	20	30	30				· · · · · · · · · · · · · · · · · · ·	100	3			3	Face to Face	PP	2 Hrs
6.	14243204/20243204	DLC	Embedded System Lab		- : - : - : - : - :	: : : <del>:</del> : : : :	: : : : <u>-</u> : : : :	70	30		: : : <u>-</u> : : : :	100	<u> </u>	- [-]	2	1.1	Experimental	AO	
7.	14243205/20243205	DLC	Artificial Intelligence & Machine Learning Lab		· · · · ·			70	30		: : : : : : : : : : : : : : : : : : :	100	: - <u>-</u> : -	- :- :	2	1.	Experimental	AO	
8.	14243206/20243206	SP	Semester Proficiency ^{\$}		· · · · - · · · ·	· · · · · · ·		50			· · · · · · · ·	50	· ·		2	1	Face to Face	SO	<u></u>
9.	14243207/20243207	PBL	Capstone Project	· . · . · <del>.</del> · · . · .		- : - : - : - : :	· . · . · . · . · . · . ·	70	30	- : - : - : - : : :	· : · : <del>:</del> · : · :	100	- :- :	1	4	2	Experiential	SO	- : - : - : - : -
		Tota	al	80	80	120	120	260	90	25	75	850	12	03	10	20		• • • • • •	
10.	14243208 <b>MA</b>	C Dis	saster Management	20	20	30	30	- : - : - : - : : : : : : : : : : : : :	- : : : <del>-</del> : : : :		· · · · · · · · · · · ·	100	2		· · ·	GRADE	Blended	MCQ	1.5 Hrs
11.	MW	S Ma	ndatory Workshop on Intellectual I	Property Righ	ts at Depart	ment Level (1	Duration: Tw	o Days)								GRADE	Interactive	MCQ	· . · . · . · ·

Skill Enhancement Program/Research Internship/On Job Training for Four weeks duration

Summer Semester of six-eight week duration will be conducted for makeup of V & VI semester examination.

Additional Course for Honours or Minor Degree: Permitted to opt for maximum two additional courses for the award of Honours or Minor Degree

Semester Proficiency—includes the weightage towards ability/ skill/ competency /knowledge level /expertise attained etc. in the semester courses

**MCQ:** Multiple Choice Question **AO:** Assignment + Oral

**PP:** Pen Paper **SO:** Submission + Oral

OB: Open Book

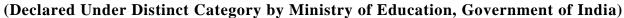
* Course run through SWAYAM/NPTEL/ MOOC Learning Based Platform.

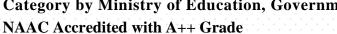
 HSMC	BSC	ESC	DC	DE	SPC	OC	DLC	NEC	SP	SIP	SLP	PDC	PBL	MAC	MWS
 0	0	0	2	1	1	1	2	0	1	0	0	0	1	1	4

٠.															
. '				Mode of Le	arning					Mode of I	Examination				
. '	The	ory	NEC			Lab			Theory		NEC	L	ab	Total Credits	-
	Face to Face	Online	Interactive	Face to Face	Blended	Experiential	Experimental	PP	MCQ	ОВ	so	AO	so	Total Credits	
. '	12	3	0	1	0	2	2	6	9	0	0	2	3	40	-
. '	60%	15%	0%	5%	0%	10%	10%	30%	45 %	0%	4.16%	10%	15%	Credits %	-



#### (Deemed University)





# **Department of Electronics Engineering**

**Scheme of Evaluation** 

B. Tech. VII Semester (EL/ET) (for batch admitted in academic session 2024-25)

						Ma	ximum Ma	rks Allotted					Con	tact H	ours				
					Theory	Block		Practical	Block	MOC	)Cs		p	er wee	ek			Mode	Duration
S. No.	Course Code	Category Code	Course Name	Cont	inuous Evalı	ıation	Martin	Continuous Evaluation	Metas			Total Marks				Total Credits	Mode of	of Major Evoluet	of Major Evaluatio
				Minor Evaluation I	Minor Evaluation II	Quiz/ Assignment	Major Evaluation	Lab Work & Sessional	Major Evaluation	Assignment	Exam		. L	<b>T</b>	P		Learning	ion.	n.
1.	142441XX/ 202441XX	DE	Departmental Elective [#] (DE-3)	20	20	30	30					100	3	: : :	-	3	Blended	PP	2 Hrs
2.	142441XX/ 202441XX	DE	Departmental Elective* (DE-4)	· · · · · · · ·	· · · · · · · ·		· · · · · · · · · · · · · · · · · · ·	· · · · · · · · ·	· · · · · · ·	25	75	100	3	-:-		3	Online	MCQ	3 Hrs
3.	142441XX/ 202441XX	ос	Open Category Course* (OC-2)	20	20	30	30	· · · · · · · · · · · · · · · · · · ·	: :::	25	75	100	2	1.		3	Online	MCQ	3 Hrs
4.	14244101/ 20244101	SPC	Specialization Course [#] (SPC-3)	20	20	30	30			: ::::::::::::::::::::::::::::::::::::		100	2	1		3	Blended	MCQ	2 Hrs
5.	14244102/ 20244102	SEP	Skill Enhancement Program/Research Internship/ On Job Training						50			50		: : :	2	1**	Experiential	so	- · · · · · · · · · · · · · · · · · · ·
6.	14244103/ 20244103	DLC	Creative Problem Solving	-		-			50		-	50		: = :	2	1	Experiential	AO	
			Total	60	60	90	90	120	100	50	150	500	10	02	04	14	· · · · · · · · · · · · · · · · · · ·	· . · <u>-</u> · . ·	

Additional Course for Honours or Minor Degree: Permitted to opt for maximum two additional courses for the award of Honours or Minor Degree

**PP:** Pen Paper **SO:** Submission + Oral

OB: Open Book

^{*}Course run through MITS-DU MOOCs

	HSMC	BSC	ESC	DC	DE	SPC	OC .	DLC	NEC	SP	SIP	SLP	PDC	PBL	MAC	MWS
·I	0	0	0	0	2	1	1 1 1	1	0	1	0	0	0	0	0	1

			Mode of Lo	earning					Mode of E	xamination			
T	heory	NEC			Lab			Theory		NEC	L	ab	Total Credits
Face to	Online	Interactive	Face to Face	Blended	Experiential	Experimental	PP	MCQ	ОВ	so	AO	so	Total Credits
12		0, , , ,	1	0	1	0	6	6	0	0	1	1	31
85.17%	21.42%	0%	7.14%	0%	7.14%	0%	42.85%	42.85 %	0%	0%	7.14%	7.14%	Credits %

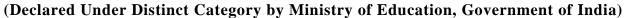
MCQ: Multiple Choice Question AO: Assignment + Oral

^{*} Course run through SWAYAM/NPTEL/ MOOC Learning Based Platform.

^{**} These credits will be transferred from Skill Enhancement Program/Research Internship/On Job Training









**NAAC Accredited with A++ Grade** 

# **Department of Electronics Engineering**

**Scheme of Evaluation** 

B. Tech. VIII Semester (EL/ET)(for batch admitted in academic session 2024-25)

						Max	imum Ma	rks Allotte	ed					ntact E	Iours				
					Theory	Block		Practica	l Block	MOO	Cs		I	er we	ek		Mode	Mode of	Duration of
No.	Course Code	Category Code	Course Name	Conti	nuous Eval	uation						Total Marks				Total Credits	of	Major	
				Minor Evaluation I	Minor Evaluation II	Quiz/ Assignment	Major Evaluation	Continuous Evaluation		Assignment	Exam		L	Т	P		Learning	Evaluat ion.	Evaluatio n.
1.	142442XX/ 202442XX	DE	Departmental Elective* (DE-5)	: : : : <del>:</del> : : : :	: : : <del>-</del> : : : :	· · · · · <del>·</del> · · · · · ·		:::: <del>:</del> :::::	: : : : <del>:</del> : : : :	25	75	100	.3	: = :	: : :	3	Online	MCQ	3 Hrs
2.	142442XX/ 202442XX	ос	Open Category Course* (OC-3)	· · · · · · ·						25	75	100	3			3	Online	MCQ	3 Hrs
3.	14244201/ 202442XX	PBL	Industry Internship/Research Internship/ Innovation & Start-up	: <del>.</del>				280	120		1	400			20	10	Experiential	SO	- · · · · - · · · ·
4.	14244202/ 20244202	PDC	Professional Development##	· · · · · <del>·</del> · · · · ·		: <del>.</del>	· · · · · · · · · · · · · · · · · · ·		50	· · · · · · · · · · · · · · · · · · ·		50	: = :		4	2	Interactive	so	· · · · <u>-</u> · · · ·
			Total		· · · · · · · ·	: : : : <del>:</del> : : : :		280	170	50	150	650	06		24	18		· · · · · · · ·	

Summer Semester of six-eight week duration will be conducted to complete any backlog courses.

Additional Course for Honours or Minor Degree: Permitted to opt for maximum two additional courses for the award of Honours or Minor Degree

**MCQ:** Multiple Choice Question **AO:** Assignment + Oral

PP: Pen Paper

**SO:** Submission + Oral

OB: Open Book

*Course run through SWAYAM/NPTEL/ MOOC Learning Based Platform

## 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 programme (participation in professional chapter activities, club activities, cultural events, sports, personality development activities, collaborative events, MOOCs, technical events, institute/department committees, etc.)

-	HSMC	BSC	ESC	DC	DE	SPC	OC	DLC	NEC	SP	SIP	SLP	PDC	PBL	MAC	MWS
	0	0	0	0	1	0	1	0	0	0	0	0	1	1	0	0

 			Mode	of Learning					Mode of	Examination			
 The	ory	NEC			Lab		- : - : - : - : : :		Theory	NEC	L	ab	Total Credits
Face to Face	Online	Interactiv e	Face to Face	Blended	Experientia l	Experimenta l	Interact ive	PP	MCQ OB	so	AO	so	Total Credits
0	6	0	0	0	10	0	2	0	6 0	0	0	12	36
 0%	33.33%	0%	0%	0%	55.55%	0%	11.11%	0%	33.33 % 0%	0%	0%	7.14%	Credits %





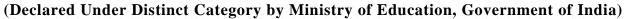
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#### **Annexure III**

Itom 3	To review and finalize the syllabi of all courses of B. Tech. II Semester (for batch admitted in 2024-25) u	ınder the flexible	e
Item 3	curriculum along with their COs		



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# **Department of Electronics Engineering**

**B.Tech. II Semester (Electronics Engineering/Electronics & Telecommunication Engineering)** 

#### **Data Communication (14241201/20241201)**

				Theory Slo	ot		Prac	etical Slot			ntact week	
 Subject Code	Category Code	Subject Name	Minor Evaluation	Minor Evaluation	Quiz/ Assign ment Marks	Major Evaluation	Continuous Evaluation/ Lab work & Sessional	Major Evaluation	Total Marks	L	ТР	Total Credits
 14241201/ 20241201	DC	Data Communication	20	20	30	30	:	:::::: <u>:</u> ::::::	100	3	- : : -	3

**Data Communication (14241201/20241201)** 

**Course objectives:** To provide an introduction to fundamental computer network architecture concepts and their applications.

**Unit I Introduction to Switching Techniques:** Circuit switching, Message switching, Packet switching, Protocols, Layered network architecture and architecture OSI & TCP/IP reference model, Physical layer transmission medium, RS 232 C, Modem, Topologies.

Unit II Data Link Layer: Framing BSC, HDLC. ARQ: Stop and wait, Sliding window, Efficiency, Error detection and Error correction, Hamming codes, Parity checks – CRC, Checksum, HARQ.

**Unit III MAC Layer:** MAC sub layer – LAN protocols, ALOHA, Slotted and pure ALOHA, CSMA, CSMA/CD, Token bus, Token Ring, TDMA, CDMA, FDMA, Ethernet, Bridge, Router, Gateway, Switch.

**Unit IV Network Layer:** Routing – Data gram and Virtual Circuit, Distance vector and Link state Routing, Dijkstra's Algorithms, Congestion Control: Leaky bucket algorithm, Slow start, ATM model and ATM traffic management – AAL, X.25, IP layer, IP addressing.

**Unit V Transport Layer:** Connection oriented transport protocol mechanism, TCP, Transport flow regulation, UDP Segmentation & Reassemble, Session and Transport Interaction, Synchronization, Session protocols, FTP, Remote login.

#### **Text Books:**

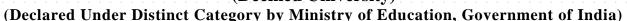
- 1. Data Communication & Networking B.A. Forouzan, Tata Mc-Graw Hill
- 2. Data and Computer Communication W. Stallings, Pearson

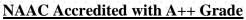
#### **Reference Books:**

- 1. LANs Keiser, Tata Mc-Graw Hill
- 2. Internetworking with TCP/IP VOL-I D.E. Comer, PHI
- 3. ISDN and Broad band ISDN with Frame Relay & ATM W. Stalling, Pearson



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#### **Course Outcome:**

After successful completion of the course, students will be able to:

**CO1: Apply** various switching techniques in a layered network architecture.

CO2: Analyze protocols and techniques related to the Dynamic Link Layer.

CO3: Explain MAC sub-layer protocols to design and manage efficient LAN.

CO4: Analyze routing algorithms, congestion control mechanisms, and IP addressing techniques.

**CO5: Explore** transport-layer protocols for flow and error control.

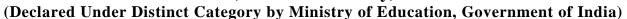
#### **Course Articulation Matrix**

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	2	3	2	0	2	. 1	.1	1	3	1	3	3	2
CO2	3	3	2	2	0	.1	1	1	2	1	2	3	3	.1
CO3	3	1	-1	1	0	2	1	1	.1	2	.1	3	3	2
CO4	3	3	2	2	0	1	2	.1	2	. 1	2	2	3	1
CO5	3	3	1	1	0	1	2	1	2	1	2	2	3	1

1 - Slightly; 2 - Moderately; 3 – Substantially



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# **Department of Electronics Engineering**

**B.Tech. II Semester (Electronics Engineering/Electronics & Telecommunication Engineering)** 

#### **Electronic Circuits (14241202/20241202)**

				Theory Slo	ot		Prac	tical Slot		Con Hr./v		
Subject Code	Category Code	Subject Name	Minor Evaluation	Minor Evaluation	Quiz/ Assign ment Marks	Major Evaluation	Continuous Evaluation/ Lab work & Sessional	Major Evaluation	Total Marks	L	P	Total Credits
14241202 20241202		Electronic Circuits	20	20	30	30		· · · · · · · · · · · · · · · · · · ·	100	2 1	-	3

Course Objective: To understand different semiconductor circuits and grab the way to design circuits and perform measurements of circuit parameters.

**Unit I: Diode Circuits**: Review of P-N Junction Diodes, Power supply parameters, SMPS, Zener and Avalanche Breakdown, Zener voltage regulator, series pass regulator (with feedback) and shunt voltage regulators, Short circuit protection.

Unit II: Introduction to BJT Biasing and Stability: Review of BJTs, Transistor biasing and bias stabilization, the operating point, stability factor, analysis of fixed base bias, Voltage divider bias, collector to base bias, Emitter resistance bias circuit and Bias compensation techniques.

Unit III: BJT as an Amplifier: Low frequency BJT amplifiers, equivalent circuit of BJT using h parameter for CB, CE, CC configurations, calculation of transistor parameter for CB, CE, CC using h parameters. High frequency BJT amplifier: Hybrid-pi ( $\pi$ ) common emitter transistor model, hybrid –  $\pi$  conductance and capacitance, gain-bandwidth product.

Unit IV: Feedback amplifiers: Introduction to Feedback Amplifiers & their design parameters, comparison of different feedback amplifier configuration viz (gain, input impedance, output impedance, current gain, voltage gain), cascading of BJT amplifier, Darlington Pair.

Unit V: Oscillators and Tuned Amplifiers: Barkhausen criterion, Sinusoidal oscillators, L-C (Hartley- Colpitts) oscillators, RC phase shift, resonant oscillator, Wien Bridge and crystal oscillators, Clapp oscillator, Tuned

#### **Text Books:**

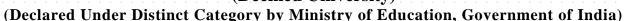
- 1. Microelectronic Circuits: Theory and Application: Sedra& Smith,7th Edition, Oxford University Press.
- 2. Electronics Devices and Circuits: Boylested&Nashelsky,11th Edition, Pearson Education India

#### **Reference Books:**

1. Electrical Engineering material: A.J Dekker, 1st Edition, Prentice Hall of India.



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# **Department of Electronics Engineering**

- 2. Micro Electronics: Millman, & Grabel, 2nd Edition, McGraw Hill Education
- 3. Integrated Electronics: Millman & Halkias, McGraw Hill Education.

#### **Course Outcomes**

After the completion of this course students will be able to:

- CO 1. Design different diode circuits.
- **CO 2. Design** the biasing circuits for BJTs.
- **CO 3. Examine** the working of BJT amplifiers.
- **CO 4. Analyze** the different parameters of feedback amplifiers.
- CO 5. Design the Oscillator and Tuned amplifier circuits.

#### **Course Articulation Matrix**

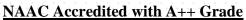
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3	2	2	2	1	2	3	2	: : : <u>-</u> : : :	1.	2	2
CO2	3	3	3	1:	2	2	1	2	3	2	- : : <del>-</del> : : :	2	3	3
CO ₃	3	3	2	2	2	2	1.1.1.	2	3	1:1:::	111	2	3	2
CO4	3	3	2	2	2	2	1.	1:	3	2	1	2	3	3
CO5	3	3	3.	2	2	2	1	2	3	2	1::	3	3	3

1 - Slightly; 2 - Moderately; 3 – Substantially

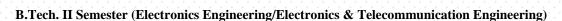


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# **Department of Electronics Engineering**



#### Signals & Systems (14241203/20241203)

				Theory Slo	t · · · · · ·		Prac	tical Slot			ntact /week		
Subject Code	Category Code	Subject Name	Minor Evaluation	Minor Evaluation II	Quiz/ Assign ment Marks	Major Evaluation	Continuous Evaluation/ Lab work & Sessional	Major Evaluation	Total Marks	L	T P	Total Credits	
14241203/ 20241203	DC	Signals & Systems	20	20	30	30			100	2	1 -	3	

Course objective: Coverage of continuous and discrete-time signals and systems, their properties and representations and methods that is necessary for the analysis of continuous and discrete-time signals and systems.

**Unit-1 Introduction**: Mathematical Description of Continuous& Discrete—Time Signals Definition, Classification of signals, Complex Exponential and Sinusoidal Function; Unit Step, Signum, Unit Ramp, Unit Impulse, Periodic Impulse or Impulse Train, Rectangle, Triangle, Sinc and Gaussian pulse functions, Even and Odd Functions, Periodic and non periodic Functions, Signal Energy and Power, Scaling and Shifting, Amplitude Scaling, Time Shifting, Differential and Integration.

**Unit 2 Fourier series and Fourier transform:** Fourier Transform: Exponential Fourier series, and Trigonometric Fourier series, properties of Fourier series, Introduction to Fourier transform, Fourier Transforms of elementary functions. Properties of Fourier Transform.

**Unit 3: Z transforms**: Introduction to Z-transform, relation between Laplace and Z-transform, relation between Fourier transform and Z-transform, ROC, properties of ROC, Properties of Z-transform, Inverse Z-transform, Unilateral Z-transform.

Unit-4 Properties of Continuous and Discrete Time Systems: System Modeling, System Properties, Homogeneity, Time Invariance, Additivity, Linearity & Superposition, Stability, Incremental Linearity, Causality, Memory, Static, Nonlinearity, Inevitability, continuous & Systems.

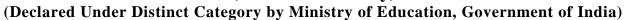
**Unit-5 Continuous and Discrete system analysis**: The Convolution Integral, and Convolution Sum, Impulse Response, Convolution & Systems Interconnections, Stability and Impulse Response, Response of Systems to Standard Systems, Realization of Differential Equations, Analysis of discrete time LTI system using Z-transform, Analysis of continuous time LTI system using Laplace transform.

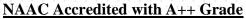
#### Text Books:

- 1. Digital Signals and Systems, 2nd Edition: Simon Haykin, Barry Van Veen, 2nd Edition, Wiley India Pvt. Ltd.
- 2. Signals and Systems: Hwei. P. Hsu, Schaum's outlines, 2 nd Edition, Tata Mcgraw Hill Education.



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#### **Reference Books:**

- 1. Fundamentals of Signals & Systems: Michael J Roberts, 2 nd Edition, Mc Graw Hill Education.
- 2. Signal and Systems: Alan V. Oppenheim, Alan S. Willsky and S. Hamid Nawab, 2nd Edition, Pearson Education India.

#### **Course Outcomes**

After the completion of this course students will be able to:

- CO1. Describe continuous and discrete time signals mathematically.
- **CO2. Determine** the spectral characteristics of signals using Fourier series and Fourier transform.
- **CO3. Apply** z-transform for analysis of discrete time signals.
- **CO4.** Evaluate the performance parameters of LTI systems.
- CO5. Analyze continuous and discrete time systems.

#### **Course Articulation Matrix**

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	2	1.	2	1.	1:::::	2	2	1::::	2		3	2	2
CO2	3	3	3	3	2	2	2	2	2	2	2	3	3	3
CO3	3	3	2	3	3	3	2	1	2	2	3	3	3	3
CO4	3	3	3	3	3	3	2	1:-:-:	2	2	3	3	3	3
CO5	3	3	2	1.	2	3-1-1	2	1-1-1-1-	2	2	1:::::	3	2	2

1 - Slightly; 2 - Moderately; 3 – Substantially



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# **Department of Electronics Engineering**

B.Tech. II Semester (Electronics Engineering/Electronics & Telecommunication Engineering)

#### **Digital Circuits and Systems (14241204/20241204)**

				Theory Slo	ot .		Prac	tical Slot		Cont Hr./w		
Subject Code	Category Code	Subject Name	Minor Evaluation	Minor Evaluation	Quiz/ Assign ment Marks	Major Evaluation	Continuous Evaluation/ Lab work & Sessional	Major Evaluation	Total Marks	L T	P	Total Credits
14241204/ 20241204	DC	Digital Circuits and Systems	20	20	30	30	· · · · · · · · · · · · · · · · · · ·	<u>.</u>	100	2 1		3

Course Objective: To understand the concept of digital systems, design& analyze the combinational and sequential logic circuits.

**Unit I: Boolean algebra and switching functions:** Minimization of Boolean functions, Canonical & standard form, concept of prime implicant etc. Karnaugh's map method, Quine-McCluskey's method, Universal gates, NAND/NOR realization of Boolean functions.

Unit II: Combinational Logic circuits: Half adder, Half subtractor, Full adder, Full subtractor circuits. Serial and parallel adder, BCD adders, look-ahead carry generator, Code Converters, Decoders, Encoders, Multiplexers & demultiplexers.

**Unit III: Sequential Circuits:** Latches, Flip-flops - SR, JK, D, T, and Master-Slave, Characteristic table and equation, Application table, Edge triggering, Level Triggering, Realization of one flip flopusing other flip flops, Multivibrators: Monostable, Astable, Bistable (transistorized).

**Unit IV: Registers and Counters:** Asynchronous Ripple or serial counter, Asynchronous Up/Down counter, Synchronous counters, Synchronous Up/Downcounters, Programmable counters, Design of Synchronous counters: State diagram, State table, State minimization, State assignment, Excitation table and Maps Circuit, Implementation: Modulo-n-counter, Registers:Shift registers, Universal shift registers, Shift register counters, Ring counter, Shift counters, Sequence generators.

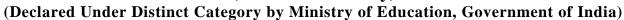
**Unit V: Logic Families:** RTL, DTL, all types of TTL circuits, ECL, HTL and PMOS, NMOS & CMOS logic etc. Comparison of various logic families, ROM organization- PROM, EPROM, EPROM, EAPROM, RAM organization- Static RAM, Dynamic RAM.

#### **Text Books:**

- 1. Digital Design: M. Mano,4th Edition, Prentice Hall of India.
- $2.\ Logic\ \&\ Computer\ Design\ Fundamental:\ M. Mano,\ 5th\ Edition,\ Pearson\ Education\ India.$
- 3. Digital Circuits and Design: S. Salivahanan,5th Edition, Oxford University Press.



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#### **Reference Books:**

- 1. Digital Electronics: W.H. Gothman, Prentice Hall of India.
- 2. Digital System Principles & Applications: R.J. Tocci, 11th Edition, Pearson Education India.
- 3. Pulse, Digital & Switching Waveforms: Millman&Taub, McGraw Hill Education.

#### **Course Outcomes**

#### After the completion of this course students will be able to:

**CO1.** Develop/implement the Boolean expression using logic gates.

CO2. Design different combinational logic circuits such as adder, subtractor, decoder etc.

CO3. Analyze sequential circuits such as flip-flops, latches etc.

CO4. Design shift registers and counters using flip-flops.

**CO5.** Compare logic families, semiconductor memories, & multivibrators.

#### **Course Articulation Matrix**

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	1	2	1	1	2	1	2	1	2	2	3	3	3
CO2	3	3	3	3	2	3	1	2	2	1	3	3	2	2
CO3	3	3	3-	3	2	2	-1-:		1:	2	1	2	3	3
CO4	3	3	2	2	2	2	2		2	1:::::	1	2	3	3
CO5	3-1	3	3.	2	3-1-1-	3	1.	1:::::	1.	1.	2	3	2	3

1 - Slightly; 2 - Moderately; 3 – Substantially





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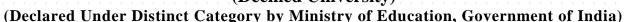
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# **Department of Electronics Engineering Annexure IV**

Item 4	To review and finalize the Experiment list/ Lab manual and Micro Project-II for all the Laboratory	Courses to be
Item 4	offered in B. Tech. II Semester (for batch admitted in 2024-25)	



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# **Department of Electronics Engineering**

**B.Tech. II Semester (Electronics Engineering/Electronics & Telecommunication Engineering)** 

#### **Digital Logic Design Lab (14241206/20241206)**

				Theory Slo	ot		Prac	tical Slot		Con Hr./v		
Subject Code	Category Code	Subject Name	Minor Evaluation	Minor Evaluation	Quiz/ Assign ment Marks	Major Evaluation	Continuous Evaluation/ Lab work & Sessional	Major Evaluation	Total Marks	LT	P	Total Credits
14241206/ 20241206	DLC	Digital Logic Design Lab					70	30	100		2	1

Course Objective: Develop skills in designing and testing electrical and electronic circuits.

#### **List of Experiment**

- 1. To verify the truth tables for logic gates AND, OR, NOT, EX-OR, EX- NOR, NAND, NOR
- 2. To realize basic logic gates using universal gates
- $\mathbf{3.}$  To verify the truth table of half adder and full adder
- **4.** To verify the truth table of half subtractor and full subtractor
- 5. To design R-S Flip-Flop
- **6.** To design J-K Flip-Flop
- 7. To examine parity generator/checker
- **8.** To design ripple counter using J-K Flip-Flop.

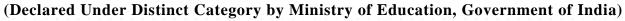
#### **Course Outcomes:**

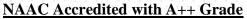
#### After completing the lab, students will be able to

- CO1. Verify the De Morgan's theorem.
- CO2. Design the basic and universal gates.
- CO3. Design adder & subtractor circuits.
- CO4. Verify the truth table of flip-flops.
- CO5. Design Counters and Registers



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# **Department of Electronics Engineering**



#### **Problem Solving through Python Programming (14241207/20241207)**

				Theory Slo	ot · · · ·		Prac	tical Slot		Con Hr./v		
Subject Code	Category Code	Subject Name	Minor Evaluation	Minor Evaluation	Quiz/ Assign	Major	Continuous Evaluation/ Lab work	Major	Total Marks	1. 7	P	Total Credits
			· · · · · · · · · · · · · · · · · · ·	<b>II</b>	ment Marks	Evaluation	& Sessional	Evaluation				
14241207 /20241207	DLC	Problem Solving through Python Programming					70	30	100		2	1

Course Objectives: Develop skills in modular programming by writing reusable functions and dividing the code into logical modules.

#### **List of Experiments**

- 1. Write python programming to declare various data type and display its data type.
- 2. Write python programming to declare sequential data types and display its data type.
- 3. Write python programming to perform addition and subtraction and display the result.
- 4. Write python programming to perform multiplication and division and display the result.
- 5. Write a python programming to perform Boolean operation and display the result.
- 6. Write a python programming to perform logical operations and display the result.
- 7. Write a python programming to declare a string, display its different index position and also change the letter of string with some other letter.
- 8. Write python programming to declare array and display its different index position.
- 9. Write python programming to declare a string then (a) Capitalize it, (b) convert into title format, (c) Swap the case of string.
- 10. Write a python programming to declare a string use slice object to slice the given sequence to perform addition, subtraction, multiplication and division of integer and floating values.

#### **Course Outcomes**

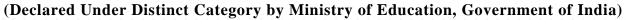
After completing the lab, students will be able to:

**CO1.** Write basic programs in Python.

CO2. Visualize data using Python packages.



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#### **Micro Project-II**

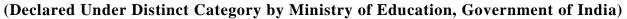
#### Course Objectives: To design an application-based project.

- 1. LED Blinking Circuit Blink an LED using a 555 timer or microcontroller.
- 2. Light-Activated Switch Use an LDR to turn devices on/off based on light intensity.
- 3. Water Level Indicator Monitor and display water levels using LEDs and float sensors.
- 4. Automatic Night Lamp Automatically turn on a lamp in low light using an LDR.
- 5. Battery Level Indicator Indicate battery levels using LEDs and voltage dividers.
- 6. Clap-Activated Switch Control devices with a clap using a sound sensor.
- 7. Temperature-Controlled Fan Adjust fan speed based on temperature using a thermistor.
- 8. Rain Detector Detect rainfall using a rain sensor and trigger an alert.
- 9. Traffic Light Controller Simulate traffic signals using LEDs and timers.
- 10. Digital Thermometer Measure temperature using a thermistor and display it on an LCD.
- 11. Burglar Alarm System Trigger an alarm when motion is detected using a PIR sensor.
- 12. IR Obstacle Detection System Detect obstacles using IR sensors and LEDs.
- 13. Soil Moisture Sensor Circuit Monitor soil moisture to automate irrigation systems.
- 14. Electronic Dice Create an electronic dice using LEDs and a random generator circuit.
- 15. Heartbeat Monitor Measure and display heart rate using a pulse sensor.
- 16. DC Motor Speed Controller Control motor speed using a potentiometer and PWM.
- 17. Power Supply Regulator Circuit Design a stable voltage supply using regulators.
- 18. Solar Mobile Charger Use solar panels to charge mobile devices.
- 19. Line Follower Robot Build a robot that follows a black line using IR sensors.
- 20. Metal Detector Detect metallic objects using an inductive sensor circuit.
- 21. To-Do List Application Create a task management system for adding, viewing, and deleting tasks.
- 22. Temperature Converter Convert temperatures between Celsius, Fahrenheit, and Kelvin.
- 23. Quiz Application Develop a multiple-choice quiz with scoring and result display.
- 24. Random Password Generator Generate secure random passwords using Python's random module.
- 25. Dice Rolling Simulator Simulate the rolling of dice with random number generation.
- 26. Currency Converter Convert between different currencies using an API.
- 27. Simple Chatbot Build a rule-based chatbot for basic conversation using conditionals.





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- 28. Age Calculator Calculate age from the user's date of birth.
- 29. File Renaming Tool Automate renaming multiple files in a directory.
- 30. Basic Alarm Clock Set a timer to trigger an alarm using time and sound libraries.
- 31. Temperature and Humidity Monitor Use a DHT11 sensor to display real-time temperature and humidity.
- 32. Obstacle Avoiding Robot Employ an ultrasonic sensor to detect and avoid obstacles.
- 33. Light-Activated LED Use an LDR to turn an LED on/off based on light intensity.
- 34. Soil Moisture Detection System Monitor soil moisture levels and trigger a water pump when dry.
- 35. Motion-Activated Security Alarm Use a PIR sensor to detect motion and trigger an alarm.
- 36. Fire Detection System Detect fire using a flame sensor and sound an alert.
- 37. Smart Dustbin Open a dustbin lid automatically using an ultrasonic sensor.
- 38. Gas Leakage Detection System Use an MQ-2 sensor to detect gas leaks and trigger a buzzer.
- 39. Heartbeat Monitoring System Measure heart rate using a pulse sensor and display the results.
- 40. Simple Calculator Perform basic arithmetic operations to understand input/output and operators.
- 41. Number Guessing Game Implement a random number guessing game using loops and conditionals.
- 42. Student Grade Calculator Calculate grades based on input marks using decision-making statements.
- 43. Library Management System Manage book records using file handling and structures.
- 44. Tic-Tac-Toe Game Build a two-player game to practice arrays and game logic.
- 45. Bank Account Management System Simulate banking operations using classes and OOP concepts.
- 46. Prime Number Finder Identify prime numbers in a range using loops and mathematical logic.
- 47. Contact Management System Store and manage contacts using structures and file handling.
- 48. Simple Voting System Create a voting system with counters and conditional statements.
- 49. Rock, Paper, Scissors Game Develop a game using random number generation and control flow.

#### **Course Outcomes:**

- CO1: Analyze the electronic components, measuring instruments, and tools.
- CO2. Design and simulate the schematic, layout using CAD software.
- CO3. Design and fabricate PCBs for various electronic circuits individually and in a team.
- CO4. Troubleshoot the program or circuit individually and in a team.
- CO5. Implementation of e mini project that benefits society.







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# Department of Electronics Engineering Annexure V

	To review and finalize the syllabi of II semester PG Programme under the Madhav Institute of Technology &	
Item 5	Science-Deemed University (MITS-DU) (M.E./M.Tech./MCA/MBA/MUP) along with their Course Outcomes	
	(COs)	

# **Not Applicable**

#### **Annexure VI**

Item6	To review and finalize the syllabus/module of Classified Novel Engaging Course to be offered in I	II
Itemo	semester of PG programme	

# **Not Applicable**

# **Annexure VII**

1144	em 7	Any other matter.	
		This other matter.	