



Program Structure

**Bachelor of Technology
(Electronics Engineering)
VLSI Design and Technology
(Powered by L&T EduTech)**

Duration: 04 years

Batch: 2026-30

School of Engineering and Applied Sciences

Department of Electronics and Communication Engineering

B. Tech (Electronics Engineering) VLSI Design and Technology Powered by L&T EduTech (2026-2030)

Proposed Outline of Course Curriculum and Credit Framework for UG Programmes in-line with NEP 2020 & NCrF/NHEQF/FYUP etc with Multiple Entry and Multiple Exit (MEME) options

ENTRY-1	Semester-I										Levels as per NCrF
	S.No	Type of Course	Subject	Course Code	L	T	P	E	Credits	Course Offered By	
1	DSC	Engineering Calculus	2026MATHXXX	3	1	0	0	4	SCSET	4.5	
2	DSC	Fundamentals of Electrical and Electronics Engineering	2026EECE100	2	1	2	0	4	ECE		
3	DSC	Computational Thinking and Programing	2026CSETXXX	3	0	2	0	4	SCSET		
4	DSE	Elements of Classical and Quantum Waves	2026PHYS156	3	0	2	0	4	EP		
		Electromagnetism and Mechanics	2026PHYS157						EP		
5	VAC	TREP-I	2026TREP101	1	0	0	3	2	University		
6	SEC	Introduction to Engineering	2026ENGG101	1	0	2	0	2	SEAS		
7	MDC	Product Design Thinking Framework	2026EECE102	2	0	2	0	3	L&T		
Total				15	2	10	3	23			

Semester-II											Levels as per NCrF
S.No	Type of Course	Subject	Course Code	L	T	P	E	Credits	Course Offered By		
1	DSC	Linear Algebra and Ordinary Differential Equation	2026MATHXXX	3	1	0	0	4	SCSET	4.5	
2	DSC	Fundamentals of Logic Design	2026EECE151	3	0	2	0	4	ECE		
3	DSC	Signals and Systems	2026EECE152	3	0	2	0	4	ECE		
4	MDC	Embedded Computing Principles	2026EECE155	2	0	2	0	3	L&T		
5	DSE	Introduction to Linux and scripting	2026EECE153	2	0	2	3	4	ECE		
		Introduction to Data Science	2026EECE154						ECE		
6	VAC	Environmental Studies - 1	2026ENVS151	2	0	0	0	2	SEAS		
7	AEC	TREP-II	2026TREP151	1	0	0	3	2	University		
Total				16	1	8	6	23	46		

Students exiting the programme after securing 40 credits will be awarded UG Certificate in the relevant Discipline /Subject provided they secure 4 credits in work based /vocational courses (internship also) offered during summer term or internship / Apprenticeship. These students are allowed to re-enter the degree programme within THREE years and complete the degree programme within the stipulated maximum period of SEVEN years.

EXIT-1
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Certificate

ENTRY-2	Semester-III										Levels as per NCrF
	S.No	Type of Course	Subject	Course Code	L	T	P	E	Credits	Course Offered By	
1	MDC	Complex Analysis and Partial Differential Equation	2026MATHXXX	2	1	0	0	3	SCSET	5.0	
2	DSC	Network Analysis and Synthesis	2026EECE201	3	0	2	0	4	ECE		
3	DSC	VLSI Principles & RTL Design and Verification	2026EECE210	2	0	2	0	3	L&T		
4	SEC	TREP-III	2026TREP201	1	0	0	3	2	ECE		
5	DSC	Product Architecture Models and Firmware	2026EECE211	2	0	2	0	3	L&T		
6	VAC	AI for all	2026AINT20X					2	University		
7	DSE	Numerical Methods for Engineering	2026EECE205	2	0	2	0	3	ECE		
		Programming Concepts	2026EECE213						ECE		
8	DSC	Semiconductor Physics and Devices	2026EECE212	2	0	0	0	2	ECE		
Total				14	1	8	3	22			

Semester-IV											Levels as per NCrF
S.No	Type of Course	Subject	Course Code	L	T	P	E	Credits	Course Offered By		
1	DSC	Probability Theory and Stochastic Processes	2026EECE251	3	1	0	0	4	ECE	5.0	
2	DSC	Analog Electronic Circuits	2026EECE259	2	1	2	0	4	ECE		
3	DSC	Logic Synthesis and DFT	2026EECE261	2	0	2	0	3	L&T		
4	DSC	Electromagnetic Field Theory	2026EECE254	2	1	0	0	3	ECE		
5	DSE	Data Structures	2026EECE255	2	0	2	0	3	ECE		
		Operating Systems	2026EECE256						ECE		
6	MDC/GE/VAC/AEC	TREP-IV	2026TREP251	1	0	0	3	2	University		
7	DSC	Intoduction to Nanomateirals	2026EECE262	2	0	0	0	2	ECE		
Total				14	3	6	3	21	89		

Students exiting the programme after securing 80 credits will be awarded UG Diploma in the relevant Discipline /Subject provided they secure additional 4 credit in skill based/vocational courses (internship also) offered during first year or second year summer term. These students are allowed to re-enter the degree programme within THREE years and complete the degree programme within the stipulated maximum period of SEVEN years.

EXIT-2
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Diploma

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ENTRY-3	Semester-V										Levels as per NCrF
	S.No	Type of Course	Subject	Course Code	L	T	P	E	Credits	Course Offered By	
1	DSC	Analog and Digital Communications	2026EECE301	3	0	2	0	4	ECE		
2	DSC	Chip Timing Analysis	2026EECE305	2	0	2	0	3	L&T		
3	DSC	Physical Design and Graphic Design System	2026EECE306	2	0	2	0	3	L&T		
4	DSC	Computer Architecture and Organization	2026EECE307	2	0	0	0	2	ECE		
5	SEC	Fundamentals of Resource Management	2026EECE308	1	0	0	0	1	ECE		
6	DSE	Elective - 1	2026EECEXXX					3	ECE		
7	AEC	TREP-V	2026TREP301	1	0	0	3	2	University		
Total				11	0	6	3	18	107		

Semester-VI										Levels as per NCrF
S.No	Type of Course	Subject	Course Code	L	T	P	E	Credits	Course Offered By	
1	DSC	Fundamentals of Digital Signal Processing	2026EECE357	3	0	0	0	3	ECE	
2	DSC	Integrated Circuits and Applications	2026EECE358	2	0	2	0	3	ECE	
3	DSC	SoCs Design Principles for Industrial Automation Practices	2026EECE361	2	0	2	0	3	L&T	
4	DSC	Foundry Process of IC Manufacturing	2026EECE360	2	0	2	0	3	L&T	
5	DSE	Elective - 2	2026EECEXXX	3	0	0	0	3	ECE	
6	DSE	Computer Networks	2026EECE351	3	0	0	0	3	ECE	
		Control Engineering	2026EECE359						ECE	
7	GE/MDC/SEC/AEC	TREP-VI	2026TREP351	1	0	0	3	2	University	
Total				16	0	6	3	20	127	

Students who want to undertake 3-year UG programme will be awarded UG Degree in the relevant Discipline /Subject upon securing 120 credits.

ENTRY-4	Semester-VII										Levels as per NCrF
	S.No	Type of Course	Subject	Course Code	L	T	P	E	Credits	Course Offered By	
1	DSE	Analog IC Design	2026EECE403	3	0	0	0	3	ECE		
		Mixed signal design	2026EECE404								
2	DSE	Network on Chip	2026EECE406	3	0	0	0	3	ECE		
		Low Power VLSI Design	2026EECE407								
3	SIP	Summer Internship	2026EECE400	0	0	0	6	2	ECE		
4	AEC	Foreign Language	2026FOLAXXX					2	Asynchronous		
5	GE/MDC/VAC	Environmental Studies - 2	2026ENVS401	2	0	0	0	2	SEAS		
6	DSC	SoC Product Design	2026EECE405	2	0	2		3	L&T		
7	SEC	Capstone works on – Industrial SoC Products	2026EECE448	2	0	2		3	L&T		
8	DSC	VLSI custom layout design	2026EECE408	0	0	2	0	1	ECE		
Total				10	0	4	6	19	146		

Semester-VIII										Levels as per NCrF
S.No	Type of Course	Subject	Course Code	L	T	P	E	Credits	Course Offered By	
1	GE/MDC/AEC/SEC	NPTEL broad categories	2026EECEXXX					2	Asynchronous	
2	Dissertation	Major Project	2026EECE499					12	ECE	
3	DSE	Elective - 3	2026EECEXXX					3	ECE	
Total				0	0	0	0	17	163	

*Subject to change post BOS approval

Elective Buckets

Semester 5 Electives	
Elective 1	Course code
Electronic Measurement Techniques and Instrumentation	2026EECE311
MOS Device Modelling	2026EECE313
Fundamentals of Nanoelectronics	2026EECE314
Any other relevant courses from NPTEL/SWAYAM/Coursera	

Semester 6 Electives	
Elective 2	Course code
Antenna and Wave propagation	2026EECE361
RF Integrated Circuits	2026EECE365
VLSI Technology and Fabrication	2026EECE366
Any other relevant courses from NPTEL/SWAYAM/Coursera	

Semester 8 Electives	
Elective 3	Course code
Wireless Sensor Networks	2026EECE461
Detection And Estimation Theory	2026EECE462
Big Data Analytics	2026EECE468
Any other relevant courses from NPTEL/SWAYAM/Coursera	

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