



Program Structure

Bachelor of Technology Electronics and Computer Engineering

Duration: 04 years

Batch: 2026-30

School of Engineering and Applied Sciences

Department of Electronics and Communication Engineering

B.Tech. Electronics and Computer Engineering (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	Workshop Practice and Product Realization	2026MECH100	1	0	4	0	3	ME	
	Total					14	2	12	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	Introductory Chemistry and Biology for Engineers	2026BIOT160	2	0	2	0	3	BioTech		
5	DSE	Introduction to Linux and scripting	2026EECE153	2	0	2	3	4	ECE		
		Introduction to Data Science	2026EECE154						ECE		
6	VAC	Environmental Studies - I	2026ENVS151	2	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 ↓ 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	Linear Integrated Circuits	2026EECE202	2	0	2	0	3	ECE	
	4	DSC	Object Oriented Programming	2026EECE203	2	0	2	0	3	ECE	
	5	DSC	Embedded Systems - 1	2026EECE204	1	0	2	0	2	ECE	
	6	VAC	AI for all	2026AINT20X					2	University	
	7	DSE	Numerical Methods for Engineering	2026EECE205	2	0	2	0	3	ECE	
			Biosensing Devices	2026EECE206						ECE	
	8	SEC	TREP-III	2026TREP201	1	0	0	3	2		
	Total				13	1	10	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 Circuits - 1	2026EECE252	2	1	2	0	4	ECE	
3	DSC	HDL programming	2026EECE253	2	0	2	0	3	ECE	
4	DSC	Machine Learning	2026EECE258	2	0	2	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	Embedded Systems - 2	2026EECE257	1	0	2	0	2	ECE	
Total				13	2	10	3	21	89	

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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
Diploma

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	5.0
	2	DSC	Digital Signal Processing	2026EECE302	3	0	2	0	4	ECE	
	3	DSC	Analog Circuits - 2	2026EECE303	2	1	2	0	4	ECE	
	4	SEC	Resource Management Techniques	2026EECE304	2	0	0	0	2	ECE	
	5	DSE	Specialization Elective-1/Elective - 1	2026EECEXXX					3	ECE	
	6	AEC	TREP-V	2026TREP301	1	0	0	3	2	University	
	Total				11	1	6	3	19	108	

Semester-VI										Levels as per NCRF
S.No	Type of Course	Subject	Course Code	L	T	P	E	Credits	Course Offered By	
1	DSC	Computer Networks	2026EECE351	3	0	0	0	3	ECE	5.0
2	DSC	Computer Architecture	2026EECE353	3	0	0	0	3	ECE	
3	DSC	Image Processing	2026EECE355	2	0	2	0	3	ECE	
4	DSC	Design and Analysis of Algorithms	2026EECE356	2	0	2	0	3	ECE	
5	DSE	Specialization Elective-2/Elective - 2	2026EECEXXX					3	ECE	
6	DSE	Elective - 3	2026EECEXXX					3	ECE	
7	GE/MDC/SEC/AEC	TREP-VI	2026TREP351	1	0	0	3	2	University	
Total				11	0	4	3	20	128	

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

EXIT-3
Degree

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	Specialization Elective-3/Elective - 4	2026EECEXXX	3	0	0	0	3	ECE	6.0
	2	DSE	Specialization Elective-4/Elective - 5	2026EECEXXX	3	0	0	0	3	ECE	
	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	2026ENVVS401	2	0	0	0	2	SEAS	
	6	DSC	Cybersecurity	2026EECE402	3	0	2	0	4	ECE	
	7	SEC	Design Project	2026EECE449	0	0	4	0	2	ECE	
	Total				8	0	4	6	18	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	6.0
2	Dissertation	Major Project	2026EECE499	0	0	24	0	12	ECE	
3	DSE	Elective - 6	2026EECEXXX					3	ECE	
Total				0	0	24	0	17	163	

*Subject to change post BOS approval

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Elective Buckets

Semester 5 Electives	
Elective 1	Course Code
Electronic Measurement Techniques and Instrumentation	2026EECE311
Advanced Digital Circuits	2026EECE312
MOS Device Modelling	2026EECE313
Fundamentals of Nanoelectronics	2026EECE314
Any other relevant courses from NPTEL/SWAYAM/Coursera	

Semester 6 Electives	
Elective 2/3	Course Code
Antenna and Wave propagation	2026EECE361
Optical Communication	2026EECE362
Advanced Digital Signal Processing	2026EECE363
Information Theory and Coding	2026EECE364
Wireless Communication	2026EECE354 (ECE core)
Any other relevant courses from NPTEL/SWAYAM/Coursera	

Semester 7 Electives	
Elective 4/5	Course Code
5G Mobile and Wireless Technology	2026EECE414
Introduction To Microelectromechanical Systems	2026EECE415
DSP Architecture and Programming	2026EECE416
Cloud Computing	2026EECE417
DBMS	2026EECE418
Blockchain Technologies	2026EECE419
Theory of Computation	2026EECE420
Mixed signal design	2026EECE404 (VLSI core)
Low Power VLSI Design	2026EECE407 (VLSI core)
Any other relevant courses from NPTEL/SWAYAM/Coursera	

Semester 8 Electives	
Elective 6	Course Code
Wireless Sensor Networks	2026EECE461
Medical Imaging Systems	2026EECE464
Software Engineering	2026EECE467
Big Data Analytics	2026EECE468
Full stack web development	2026EECE469
Any other relevant courses from NPTEL/SWAYAM/Coursera	

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				Specialization Verticals *								
Sem	VLSI		Course Code	Embedded Systems and IoT		Course Code	Data and Signal Analytics		Course Code	Mechatronics		Course Code
V	VLSI Technology [2-1-0]	3	2026EECE321	Embedded System Hardware-Software Co-Design [2-0-2]	3	2026EECE322	Introduction to Data Analytics [2-0-2]	3	2026EECE323	Introduction to Mechatronics [2-0-2]	3	2026EECE324
VI	CMOS Integrated Circuits [2-0-2]	3	2026EECE371	FPGA Architecture and Programming [2-0-2]	3	2026EECE372	Deep Learning [2-0-2]	3	2026EECE373	Sensors and Actuators [2-0-2]	3	2026EECE374
VII	System on Chip Design [2-0-2]	3	2026EECE421	IoT Networks and Protocols [2-0-2]	3	2026EECE423	Natural Language Processing [2-0-2]	3	2026EECE425	Mechatronics Control Engineering [2-0-2]	3	2026EECE427
VIII	RF Integrated Circuits [2-0-2]	3	2026EECE422	Real Time Operating System [2-0-2]	3	2026EECE424	Computer Vision [2-0-2]	3	2026EECE426	Industrial Automation [2-1-0]	3	2026EECE428

* Student must complete all 4 courses under specialization vertical to be considered for specialization

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