

DAYANANDA SAGAR UNIVERSITY
DEVARAKAGGALAHALLI, HAROHALLI, KANAKAPURA ROAD
RAMANAGAR DISTRICT- 562112

SCHOOL OF ENGINEERING



SCHEME FOR
BACHELOR OF TECHNOLOGY (B.Tech.) – 2022
ELECTRONICS & COMMUNICATION ENGINEERING (ECE)
(WITH EFFECT FROM 2022-26)
(III, IV, V, VI, VII & VIII SEMESTERS)





Dayananda Sagar University

School of Engineering

Devarakagalahalli, Harohalli, Kanakapura Road, Ramanagar District- 562112

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

SCHEME AND SYLLABUS

B.Tech. PROGRAMME- 2022 BATCH

Definition of Credit:	
01 Credit	1 Hour Lecture (L) Per Week
01 Credit	1 Hour Tutorial (T) Per Week
0.5 Credit	1 Hour Practical (P) Per Week
0.5 Credit	1 Hour Project (J) Per Week
Course code and Definition:	
BSC	Basic Science Courses
ESC	Engineering Science Courses
HSMC	Humanities and Social Sciences including Management Courses
IPCC	Integrated Professional Core Course
PCC	Professional Core Courses
PEC	Professional Elective Courses
OEC	Open Elective Courses
SEC	Skill Enhancement Courses
INT	Internship
PROJ	Project Work





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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Implementation of National Education Policy (NEP) 2020 for the B.Tech students of Batch 2022-23

The implementation of Curriculum follows NEP 2020 and addresses the following features and categories of courses:

1. Student Centric flexible curriculum.
2. Inter-disciplinary Courses,
3. Multi-disciplinary Courses,
4. Ability Enhancement Courses,
5. Skill Enhancement Courses,
6. Value Added Courses,
7. Product Design and Development
8. Internship (Rural Internship, Industry Internship, Research/Development Internship), and
9. Multiple Exit and Multiple Entry
 - Certificate in Engineering after completion of first year.
 - Diploma in Engineering after completion of second year.
 - Advanced Diploma in Engineering after completion of third year.

Degree in Engineering after completion of fourth year





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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

SCHEME 2022 - 2026 Batch

III SEMESTER

SL. No	Course Code	Course Type	Course Name	Teaching Department	Teaching Hours / Week					Examination				Credits
					Lecture	Tutorial	Practical	Project	Duration inHours	CIE Marks	SEE Marks	Total Marks		
1	22EC2301	BSC	Transforms and NumericalMethods	MAT	3	0	0	0	03	60	40	100	3	
2	22EC2302	IPCC	CS cluster & ECE Data Structures	CSE	3	0	2	0	03	60	40	100	4	
3	22EC2303	IPCC	CS cluster & ECE Digital Logic Design	ECE	3	0	2	0	03	60	40	100	4	
4	22EC2304	PCC	ECE Network Analysis	ECE	3	0	0	0	03	60	40	100	3	
5	22EC2305	PCC	ECE Signals & Systems	ECE	3	0	0	0	03	60	40	100	3	
6		AEC	Liberal Studies – I	Any Dept.	1	0	0	0	01	100	--	100	1	
7	22EC2306	SEC	Skill Enhancement Course – I	ECE	1	0	2	0	01	100	--	100	2	
Total											500	200	700	20

Skill Enhancement Course - I

22EC2306	Introduction to MATLAB and Simulink	XXXXXX
	Introduction to PSPICE ORCAD/Multi sim- National Instruments/TINA-Texas Instruments	XXXXXX





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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

SCHEME 2022 - 2026 Batch

IV SEMESTER

Sl.No	Course Code	Course Type	Course Name	Teaching Department	Teaching Hours / Week				Examination				Credits
					Lecture	Tutorial	Practica	Project	Hours	CIE Marks	SEE Marks	Total Marks	
1	22EC2401	BSC	Probability and Statistics	MAT	3	0	0	0	03	60	40	100	3
2	22EC2402	PCC	ECE Electromagnetic Field Theory	ECE	3	1	0	0	03	60	40	100	4
3	22EC2403	IPCC	ECE Analog Electronic Circuits	ECE	3	0	2	0	03	60	40	100	4
4	22EC2404	IPCC	CS cluster & ECE Embedded System Design	ECE	3	0	2	0	03	60	40	100	4
5	22EC2405	PCC	Control & Instrumentation	ECE	3	0	0	0	03	60	40	100	3
6	22EC2406	PCC	CS cluster & ECE Computer Organization & Architecture	ECE	3	0	0	0	03	60	40	100	3
7	22EC24XX	SEC	Skill Enhancement Course - II	ECE	1	0	2	0	--	100	--	100	2
Total										460	240	700	23

Skill Enhancement Course - II

22EC2407	Introduction to Embedded Machine Learning	
22EC2408	Signal & Image Processing using MATLAB	





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SCHEME 2022 - 2026 Batch

V SEMESTER

Sl.No	Course Code	Course Type	Course Name	Teaching Department	Teaching Hours / Week					Examination				Credits
					Lecture	Tutorial	Practica	Project	Duration in Hours	CIE Marks	SEE Marks	Total Marks		
1	22EC3501	IPCC	Analog and Digital Communication	ECE	3	0	2	0	3	60	40	100	4	
2	22EC3502	PCC	Digital Signal Processing	ECE	3	0	0	0	3	60	40	100	3	
3	22EC3503	PCC	Machine Learning	ECE	3	0	0	0	3	60	40	100	3	
4	22EC3504	PCC	Antennas & Wave Propagation	ECE	3	0	2	0	3	60	40	100	4	
5	22EC3505	IPCC	CMOS VLSI Design	ECE	3	0	2	0	3	60	40	100	4	
6	22EC35XX	PEC	Professional Elective Course – I / MOOC	ECE	3	0	0	0	3	60	40	100	3	
7	22EC35XX	SEC	Skill Enhancement Course – III	ECE	1	0	2	0	1	100	--	100	2	
8	22EC3506		Corporate Skill I	Training & Placement	2	0	0	0	02	100	--	100	2	
Total										560	240	800	25	

Skill Enhancement Course - III

22EC3507	DSP Lab		
22EC3508	PLC Programming		
22EC3509	Electric Vehicle Power Management Systems		





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SCHEME 2022 – 2026 Batch

VI SEMESTER

Sl. No.	Course Code	Course Type	Course Name	Teaching Department	Teaching Hours / Week				Duration in Hours	Examination			Credits
					Lecture	Tutorial	Practical	Project		CIE Marks	SEE Marks	Total Marks	
1	22EC3601	HMSC	Innovation Management and Entrepreneurship	ECE	2	0	0	0	03	60	40	100	2
2	22EC3602	IPCC	Microwave Engineering	ECE	3	0	2	0	03	60	40	100	4
3	22EC3603	PCC	VLSI Testing and Verification	ECE	3	0	0	0	03	60	40	100	3
4	22EC3604	PCC	Networking and Communication	ECE	3	0	0	0	03	60	40	100	3
5	22OEXXXX	OEC	Open Elective – I	ECE	3	0	0	0	03	60	40	100	3
6	22EC36XX	PEC	Professional Elective Course –II / MOOC	ECE	3	0	0	0	03	60	40	100	3
7	22EC36XX	PEC	Professional Elective Course – III / MOOC	ECE	3	0	0	0	03	60	40	100	3
	22EC3605		Corporate Skill II	Training & Placement	2	0	0	0	02	100	--	100	2
Total										520	280	800	23





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SCHEME 2022 - 2026 Batch

VII SEMESTER														
Sl.No	Course Code	Course Type	Course Name	Teaching Department	Teaching Hours / Week					Examination				Credits
					Lecture	Tutorial	Practical	Project	Duration in Hours	CIE Marks	SEE Marks	Total Marks		
													L	
1	22EC4701	PCC	Wireless Communication	ECE	3	0	0	0	0	03	60	40	100	3
2	22OEXXX	OEC	Open Elective – II	ECE	3	0	0	0	0	03	60	40	100	3
3	22EC47XX	PEC	Professional Elective Course – IV/ MOOC	ECE	3	0	0	0	0	03	60	40	100	3
4	22EC47XX	PEC	Professional Elective Course – V / MOOC	ECE	3	0	0	0	0	03	60	40	100	3
5	22EC4702	PROJ	Major Project-Phase I	ECE	0	0	0	0	6	03	100	--	100	3
Total											240	160	500	15





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VIII SEMESTER

Sl.No	Course Code	Course Type	Course Name	Teaching Department	Teaching Hours / Week				Examination				Credits
					Lecture	Tutorial	Practical	Project	Duration in Hours	CIE Marks	SEE Marks	Total Marks	
1	22EC4801	PROJ	Capstone Project		0	0	0	22	03	60	40	100	12
2	22EC4802	INT	Research Internship/ Industry Internship – III		0	0	0	0	06	100	--	100	02
Total										160	40	200	14





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SCHEME 2022 – 2026 Batch

Professional Elective Courses

PROFESSIONAL ELECTIVE COURSES						
Verticals	V-1		V-2	V-3	V-4	
Domain Clusters	Signal Processing and Communication		VLSI	IoT & Embedded Systems	Interdisciplinary/ Emerging Technologies	
	(A)	(B)	(C)	(D)	(E)	(F)
5 th Sem	Wireless Sensor Networks	Digital Image Processing	Mixed Signal VLSI design	Real Time Operating Systems Design and Programming	Sensors & Transducers	Renewable Energy Technologies
		Advanced Digital Signal Processing	Analog IC Design	Embedded Linux	Mechatronics	Industrial Internet of Things & Industry4.0
6 th Sem	Network Security	Digital Speech Processing	Digital IC Design	Design Patterns Embedded Systems	Industrial Instrumentation	MEMS
		Medical Imaging				Power Electronics
7 th Sem	Radar Navigation	Computer Vision	Electronic Materials Device and Processing	Linux Device Drivers	Electronic Measurement System	Introduction to Nano Electronics
		Software Defined Radio	Low Power VLSI	Internet of Things	Industrial Automation	Electric Technology
8 th Sem	Optical Communication					

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PROFESSIONAL ELECTIVE COURSES





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SCHEME 2022 – 2026 Batch

PROFESSIONAL ELECTIVE COURSES

5th Semester	
PEC-I	
Course Code	Course Name
22EC3510	Wireless Sensor Networks
22EC3511	Digital Image Processing
22EC3512	Mixed Signal VLSI design
22EC3513	Real Time Operating Systems Design and Programming
22EC3514	Sensors & Transducers
22EC3515	Renewable Energy Technologies

6th Semester		
PEC-II		PEC-III
Course Code	Course Name	Course Code
22EC3606	Network Security	22EC3613
22EC3607	Advanced Digital Signal Processing	22EC3614
22EC3608	Analog IC Design	22EC3615
22EC3609	Embedded Linux	22EC3616
22EC3610	Mechatronics	22EC3617
22EC3611	Industrial Internet of Things & Industry 4.0	22EC3618
22EC3612	MOOCs (NPTEL)	22EC3619
		22EC3620
		22EC3621
		Power Electronics





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SCHEME 2022 - 2026 Batch

7th Semester		
PEC-IV		PEC-V
Course Code	Course Name	Course Name
22EC4703	Radar and Navigation	Optical Communication
22EC4704	Introduction to Computer Vision	Software Defined Radio
22EC4705	Electronic Materials Device and Processing	Low Power VLSI
22EC4706	Linux Device Drivers	Internet of Things
22EC4707	Electronic Measurement System	Industrial Automation
22EC4708	Introduction to Nano Electronics	Electric Vehicle Technology

OPEN ELECTIVE COURSES

Open Elective I -Courses		Open Elective II-Courses
Course Code	Course Name	Course Name
22OE0056	Renewable Energy Technology	Nanotechnology and its Applications
22OE0057	Fundamentals of Telecommunication	Internet of Things
22OE0058	Electric Vehicle Technology	Reconfigurable system design

