

**JSPM University Pune**

**Faculty of Science and Technology**

**School of Electrical and Communication Sciences**



**NEP aligned Structure**

**for**

**B. Tech (Electrical Engineering)**

**(AY: 2025-26)**



# JSPM University, Pune

FACULTY OF SCIENCE & TECHNOLOGY

SCHOOL OF ELECTRICAL AND COMMUNICATION SCIENCES

COURSE STRUCTURE  
(NEP 2020 Aligned)

W. E. F.

2024-2025

RELEASE DATE

01/07/2025

SECOND YEAR BACHELOR OF TECHNOLOGY  
(ELECTRICAL ENGINEERING) (REGULAR STUDENTS)

REVISION NO.

1.0 (NEP)

SEMESTER III (LEVEL 5)

COURSE			TEACHING SCHEME				EXAMINATION SCHEME AND MARKS								TOTAL	CREDITS
TYPE	CODE	COURSE NAME	Hours / Week				THEORY (Equal Weightage for CIE and ESE)			PRACTICAL (Equal Weightage for CIE and ESE)		ORAL (Equal Weightage for CIE and ESE)				
			L	T	P	EL	CONTINUOUS IN SEMESTER EVALUATION (100 Marks)			END SEMESTER EXAMINATION (100 / 50 Marks)	CONTINUOUS IN SEMESTER EVALUATION (50 Marks)	END SEMESTER EXAMINATION (50 Marks)	CONTINUOUS IN SEMESTER EVALUATION (50 Marks)	END SEMESTER EXAMINATION (50 Marks)		
							T1 (30 Marks)	T2 (30 Marks)	Assignments (40 Marks)							
BSC	230GMAB07_03	Ordinary Differential Equations and Multivariate Calculus	2	1	-	-	30	30	40	100	-	-	-	-	100	3
PCC	240GEEB01_03	Electrical Measurements	3	-	-	-	30	30	40	100	-	-	-	-	100	3
	240GEEB02_03	Analog and Digital Circuits	2	-	-	-	30	30	40	50	-	-	-	-	50	2
	231GETB05_03	Network Analysis	2	-	-	2	30	30	40	100	-	-	-	-	100	2.5
MMC	-	Multidisciplinary Minor Course	1	-	2	-	-	-	-	-	50	50	50	50	100	2
IOC	-	Interdisciplinary Open Course	2	-	-	-	30	30	40	100	-	-	-	-	100	2
VEC (HSMC)	230USYB02_03	Professional Laws, Ethics, Values and Harmony	2	-	-	-	30	30	40	50	-	-	-	-	50	2
LC	240GEEB03_03	Electrical Measurements Lab	-	-	2	-	-	-	-	-	50	50	-	-	50	1
	240GEEB04_03	Analog and Digital Circuits Lab	-	-	2	-	-	-	-	-	50	50	-	-	50	1
LLC	230HFSB80_03	Health and Nutrition	1	-	-	2	-	-	-	-	-	-	50	-	50	1.5
<b>TOTAL</b>			<b>15</b>	<b>1</b>	<b>6</b>	<b>4</b>									<b>750</b>	<b>20</b>



Sem.	Multidisciplinary Minor Course (MMC)			
III	Course Code	230GCSB111_03		
	Course Name	Basics of Data Structures and Algorithms		
IV	Course Code	230GCSB116_04		
	Course Name	Data Science and Analytics		
V	Course Code	230GMTB01_05		
	Course Name	Sensors and Actuators		
VI	Course Code	230GETB34_06		
	Course Name	IoT and Applications		
VII	Course Code	230GCSB133_07		
	Course Name	Foundations of Artificial Intelligence		
VII	Course Code	230GCSB117_07		
	Course Name	Machine Learning in Practice		

Sem.	Interdisciplinary Open Course (IOC)			
III	Course Code	250GBTB01_03		
	Course Name	Bioengineering		
V	Course Code	230GCSB168_05		
	Course Name	Fundamentals of Computer Networks		
VII	Course Code	230GMEB64_07		
	Course Name	Smart Materials		



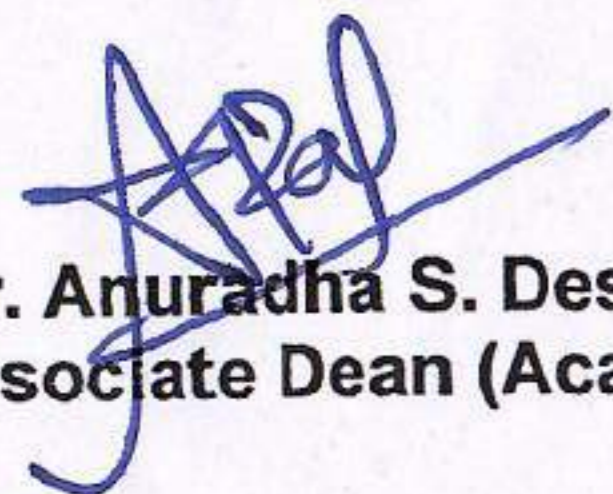
**Dr. Srinivas Nagaballi**  
Programme Coordinator, SECS



**Prof. Dr. Rajendrakumar A. Patil**  
Director, School of Electrical & Communication Sciences




**Prof. R. S. Deshpande**  
Dean, Faculty of Science and Technology



**Dr. Anuradha S. Deshpande**  
Associate Dean (Academics)



  
**Prof. B. B. Ahuja**  
Vice Chancellor, JSPM University Pune

**Vice Chancellor**  
**JSPM University**  
**Pune**

EL-Experiential Learning  
Page 1 of 10



# JSPM University Pune

FACULTY OF SCIENCE & TECHNOLOGY

SCHOOL OF ELECTRICAL AND COMMUNICATION SCIENCES

## COURSE STRUCTURE (NEP 2020 Aligned)

W. E. F.

2024-2025

RELEASE DATE

01/07/2025

REVISION NO.

1.0 (NEP)

SECOND YEAR BACHELOR OF TECHNOLOGY  
(ELECTRICAL ENGINEERING) (LATERAL ENTRY)

### SEMESTER III (LEVEL 5)

COURSE			TEACHING SCHEME				EXAMINATION SCHEME AND MARKS								TOTAL	CREDITS
TYPE	CODE	COURSE NAME	Hours / Week				THEORY (Equal Weightage for CIE and ESE)				PRACTICAL (Equal Weightage for CIE and ESE)		ORAL (Equal Weightage for CIE and ESE)			
			L	T	P	EL	CONTINUOUS INSEMESTER EVALUATION (100 Marks)			END SEMESTER EXAMINATION (100 / 50 Marks)	CONTINUOUS INSEMESTER EVALUATION (50 Marks)	END SEMESTER EXAMINATION (50 Marks)	CONTINUOUS INSEMESTER EVALUATION (50 Marks)	END SEMESTER EXAMINATION (50 Marks)		
							T1 (30 Marks)	T2 (30 Marks)	Assignments (40 Marks)							
BSC	230GMAL01_03	Linear Algebra and Univariate Calculus	3	1	-	-	30	30	40	100	-	-	-	-	100	4
PCC	240GEEB01_03	Electrical Measurements	3	-	-	-	30	30	40	100	-	-	-	-	100	3
	240GEEB02_03	Analog and Digital Circuits	2	-	-	-	30	30	40	50	-	-	-	-	50	2
	231GETB05_03	Network Analysis	2	-	-	2	30	30	40	100	-	-	-	-	100	2.5
MMC	-	Multidisciplinary Minor Course	1	-	2	-	-	-	-	-	50	50	50	50	100	2
IOC	-	Interdisciplinary Open Course	2	-	-	-	30	30	40	100	-	-	-	-	100	2
VSC	230IDCB01_03	Design Thinking and Creativity	1	-	-	2	-	-	-	-	-	-	50	50	50	1.5
AEC (HSMC)	230UENB01_03	Effective Communication Skills	1	-	2	-	30	30	40	50	-	-	-	-	50	2
LC	240GEEB03_03	Electrical Measurements Lab	-	-	2	-	-	-	-	-	50	50	-	-	50	1
	240GEEB04_03	Analog and Digital Circuits Lab	-	-	2	-	-	-	-	-	50	50	-	-	50	1
<b>TOTAL</b>			<b>15</b>	<b>1</b>	<b>8</b>	<b>4</b>									<b>750</b>	<b>21</b>



Sem.	Multidisciplinary Minor Course (MMC)			
III	Course Code	230GCSB111_03		
	Course Name	Basics of Data Structures and Algorithms		
IV	Course Code	230GCSB116_04		
	Course Name	Data Science and Analytics		
V	Course Code	230GMTB01_05		
	Course Name	Sensors and Actuators		
VI	Course Code	230GETB34_06		
	Course Name	IoT and Applications		
VII	Course Code	230GCSB133_07		
	Course Name	Foundations of Artificial Intelligence		
VII	Course Code	230GCSB117_07		
	Course Name	Machine Learning in Practice		

Sem.	Interdisciplinary Open Course (IOC)			
III	Course Code	250GBTB01_03		
	Course Name	Bioengineering		
V	Course Code	230GCSB168_05		
	Course Name	Fundamentals of Computer Networks		
VII	Course Code	230GMEB64_07		
	Course Name	Smart Materials		

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COURSE			TEACHING SCHEME				EXAMINATION SCHEME AND MARKS								TOTAL	CREDITS	
TYPE	CODE	COURSE NAME	Hours / Week				THEORY (Equal Weightage for CIE and ESE)			PRACTICAL (Equal Weightage for CIE and ESE)		ORAL (Equal Weightage for CIE and ESE)					
			L	T	P	EL	CONTINUOUS IN SEMESTER EVALUATION (100 Marks)			END SEMESTER EXAMINATION (100 / 50 Marks)	CONTINUOUS IN SEMESTER EVALUATION (50 Marks)	END SEMESTER EXAMINATION (50 Marks)	CONTINUOUS IN SEMESTER EVALUATION (50 Marks)	END SEMESTER EXAMINATION (50 Marks)			
							T1 (30 Marks)	T2 (30 Marks)	Assignments (40 Marks)								
BSC	230GMAB08_04	Vector Calculus and Partial Differential Equations	2	1	-	-	30	30	40	100	-	-	-	-	100	3	
PCC	231GETB11_04	Signals and Systems	2	-	-	2	30	30	40	100	-	-	-	-	100	2.5	
	240GEEB05_04	Transformers and DC Machines	2	-	-	-	30	30	40	50	-	-	-	-	50	2	
	231GETB13_04	Control Systems	2	-	-	2	30	30	40	100	-	-	-	-	100	2.5	
VEC/EEC	230GCEB02_04	Environment and Sustainability	2	-	-	-	30	30	40	50	-	-	-	-	50	2	
MMC	-	Multidisciplinary Minor Course	1	-	2	-	-	-	-	-	50	50	50	50	100	2	
SEC	250GCSB202_04	Introduction to R Programming	2	-	2	-	-	-	-	-	50	50	50	50	100	3	
AEC (HSMC)	230UENB02_04	Communicative Proficiency Skills	1	-	2	-	30	30	40	50	-	-	-	-	50	2	
LC	240GEEB06_04	Transformers and DC Machines Lab	-	-	2	-	-	-	-	-	50	50	-	-	50	1	
IITP/FP/CEP	230GEEB34_04	Internship / Field Project / Community Engagement Programme	4 to 6 weeks				-	-	-	-	-	-	-	50	50	50	2
<b>TOTAL</b>			<b>14</b>	<b>1</b>	<b>8</b>	<b>4</b>									<b>750</b>	<b>22</b>	
DSH	-	Domain Specific Honours	3	-	-	-	30	30	40	100	-	-	-	-	100	3	
MLC#	-	Audit Course	1	-	-	-	-	-	-	50	-	-	-	-	50	1	



**Note: A Certificate will be awarded if a student exits after the First year.**

For "Exit" at the end of the First Year the student must complete a total of 8 additional credits.

a) An internship / OJT of 8 - 10 weeks (4 credits) over and above semester 2 internship of minimum 4 weeks.

b) Additional one Course of 4 credits (Course offered will be Vocational Skill Course (VSC) or Skill Enhancement Course (SEC) or a mini project).

Sem.	Multidisciplinary Minor Course (MMC)			
III	Course Code	230GCSB111_03		
	Course Name	Basics of Data Structures and Algorithms		
IV	Course Code	230GCSB116_04		
	Course Name	Data Science and Analytics		
V	Course Code	230GMTB01_05		
	Course Name	Sensors and Actuators		
VI	Course Code	230GETB34_06		
	Course Name	IoT and Applications		
VII	Course Code	230GCSB133_07		
	Course Name	Foundations of Artificial Intelligence		
VII	Course Code	230GCSB117_07		
	Course Name	Machine Learning in Practice		

Sem.	Mandatory Learning Course (MLC#) Audit Course			
IV	Course Code	241GETB01_04		
	Course Name	PCB Design and Fabrication		
V	Course Code	240GETB02_05		
	Course Name	Drone Technology: Quadcopter Design and Control		
VI	Course Code	240GETB03_06	Course Code	240GETB04_06
	Course Name	Amateur Radio: Theory and Practice	Course Name	Android App Development
VII	Course Code	230UPOB02_07		
	Course Name	Introduction to Indian Constitution		



Sem.	Domain Specific Honours (DSH)			
	Specialization	EV Technology	Sustainable Energy Systems	Cyber Physical Systems
IV	Course Code	230GETB82_4	230GETB75_4	230GETB89_4
	Course Name	Electrical Vehicles-Policies and Regulations	Renewable Energy	Introduction to Cyber Physical Systems
V	Course Code	230GETB83_5	230GETB76_5	230GETB90_5
	Course Name	Introduction to Automobiles	Climate Change and Environmental Science	Communication for Cyber Physical Systems
	Course Code	-	-	230GETB91_5
	Course Name	-	-	Communication for Cyber Physical Systems Lab
VI	Course Code	230GETB84_6	230GETB77_6	230GETB92_6
	Course Name	EV Charging Technology	Sustainable and Green Technology	Cyber Physical System Design
VI	Course Code	230GETB85_6	230GETB78_6	230GETB93_6
	Course Name	EV Charging Technology Lab	Sustainable and Green Technology Lab	Cyber Physical System lab
VII	Course Code	230GETB86_7	230GETB79_7	230GETB94_7
	Course Name	Introduction of EV in Utility Grid	Smart Grid	Smart Infrastructure
VII	Course Code	230GETB87_7	230GETB80_7	-
	Course Name	Introduction of EV in Utility Grid Lab	Smart Grid Lab	-
VIII	Course Code	230GETB88_8	230GETB81_8	230GETB95_8
	Course Name	MOOC-I	MOOC-II	MOOC-III

*N. Srinivas*

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							T1 (30 Marks)	T2 (30 Marks)	Assignments (40 Marks)								
BSC	230GMAL02_04	Multivariate Calculus and Differential Equations	3	1	-	-	30	30	40	100	-	-	-	-	100	4	
PCC	231GETB11_04	Signals and Systems	2	-	-	2	30	30	40	100	-	-	-	-	100	2.5	
	240GEEB05_04	Transformers and DC Machines	2	-	-	-	30	30	40	50	-	-	-	-	50	2	
	231GETB13_04	Control Systems	2	-	-	2	30	30	40	100	-	-	-	-	100	2.5	
VEC/EE C	230GCEB02_04	Environment and Sustainability	2	-	-	-	30	30	40	50	-	-	-	-	50	2	
MMC	-	Multidisciplinary Minor Course	1	-	2	-	-	-	-	-	50	50	50	50	100	2	
SEC	250GCSB202_04	Introduction to R Programming	2	-	2	-	-	-	-	-	50	50	50	50	100	3	
AEC (HSMC)	230UENB02_04	Communicative Proficiency Skills	1	-	2	-	30	30	40	50	-	-	-	-	50	2	
LC	240GEEB06_04	Transformers and DC Machines Lab	-	-	2	-	-	-	-	-	50	50	-	-	50	1	
IITP/ FP/ CEP	230GEEB34_04	Internship / Field Project / Community Engagement Programme	4 to 6 weeks				-	-	-	-	-	-	-	50	50	50	2
<b>TOTAL</b>			<b>15</b>	<b>1</b>	<b>8</b>	<b>4</b>									<b>750</b>	<b>23</b>	
DSH	-	Domain Specific Honours	3	-	-	-	30	30	40	100	-	-	-	-	100	3	
MLC#	-	Audit Course	1	-	-	-	-	-	-	50	-	-	-	-	50	1	



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Sem.	Multidisciplinary Minor Course (MMC)			
III	Course Code	230GCSB111_03		
	Course Name	Basics of Data Structures and Algorithms		
IV	Course Code	230GCSB116_04		
	Course Name	Data Science and Analytics		
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	Course Name	Sensors and Actuators		
VI	Course Code	230GETB34_06		
	Course Name	IoT and Applications		
VII	Course Code	230GCSB133_07		
	Course Name	Foundations of Artificial Intelligence		
VII	Course Code	230GCSB117_07		
	Course Name	Machine Learning in Practice		

Sem.	Mandatory Learning Course (MLC#) Audit Course			
IV	Course Code	241GETB01_04		
	Course Name	PCB Design and Fabrication		
V	Course Code	240GETB02_05		
	Course Name	Drone Technology: Quadcopter Design and Control		
VI	Course Code	240GETB03_06	Course Code	240GETB04_06
	Course Name	Amateur Radio: Theory and Practice	Course Name	Android App Development
VII	Course Code	230UPOB02_07		
	Course Name	Introduction to Indian Constitution		



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V	Course Code	230GETB83_5	230GETB76_5	230GETB90_5
	Course Name	Introduction to Automobiles	Climate Change and Environmental Science	Communication for Cyber Physical Systems
	Course Code	-	-	230GETB91_5
	Course Name	-	-	Communication for Cyber Physical Systems Lab
VI	Course Code	230GETB84_6	230GETB77_6	230GETB92_6
	Course Name	EV Charging Technology	Sustainable and Green Technology	Cyber Physical System Design
VI	Course Code	230GETB85_6	230GETB78_6	230GETB93_6
	Course Name	EV Charging Technology Lab	Sustainable and Green Technology Lab	Cyber Physical System lab
VII	Course Code	230GETB86_7	230GETB79_7	230GETB94_7
	Course Name	Introduction of EV in Utility Grid	Smart Grid	Smart Infrastructure
VII	Course Code	230GETB87_7	230GETB80_7	-
	Course Name	Introduction of EV in Utility Grid Lab	Smart Grid Lab	-
VIII	Course Code	230GETB88_8	230GETB81_8	230GETB95_8
	Course Name	MOOC-I	MOOC-II	MOOC-III

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EL-Experiential Learning  
Page 1 of 10

L-Lecture  
Format No.: JSPMUni/ACAD/001

T-Tutorial  
Rev. No.:1.0

P-Practical Session (Laboratory)  
Rev. Date:01/07/2025