Bharatiya Vidya Bhavan's
SARDAR PATEL COLLEGE OF ENGINEERING
(Government Aided Autonomous Institute under Mumbai University)
Andheri (W), Mumbai - 400058

Second Year B.Tech. in Electrical Engineering with Minor in [****]

Academic Evaluation Scheme/Credit System

Year: 2025-2026

Regulation 23 (R23)

Sardar Patel College of Engineering Andheri (West), Mumbai 400 058
Year: 2025-26

Courses Offered to Second Year B.Tech. in Electrical Engineering (SEMESTER-III) under Regulation-23															
Sr. No.	**Course Name**	**Code**	**Course Plan per Week (Hrs)**			**SL** in Hrs/ semester	**Credits**	**In semester Evaluation (Points)**			**End Semester Evaluation (Points)**		**End semester weightage**	**Total Points**
			L	**T**	**P**			**Mid term points**	**Mid term time (Hrs)**	**IE**	**Points**	**Time (Hrs)**		
Core Courses														
1	Laplace Transform, Vector calculus & Linear Algebra	BS-BTE301	2	1	0	48	3	30	1.5	20	100	3	50%	100
2	Analog Circuits	PC-BTE301	3	0	0	48	3	30	1.5	20	100	3	50%	100
3	Electrical Networks	PC-BTE302	2	0	0	32	2	30	1.5	20	100	3	50%	100
4	Digital Electronics	PC-BTE303	3	0	0	48	3	30	1.5	20	100	3	50%	100
5	Electromagnetic Field and Waves	PC-BTE304	3	0	0	48	3	30	1.5	20	100	3	50%	100
Laboratory Courses														
6	Analog Circuits Lab	PC-BTE351	0	0	2	2	1	0	0	25	25	0	100%	50
7	Electrical Networks Lab	PC-BTE352	0	0	2	2	1	0	0	25	25	0	100%	50
8	Digital Electronics Lab	PC-BTE353	0	0	2	2	1	0	0	25	25	0	100%	50
9	Electromagnetic Field and Waves Lab	PC-BTE354	0	0	2	2	1	0	0	25	25	0	100%	50
Value Education Course														
10	Environmental Science and Sustainability	VE-BTE001	2	0	0	32	2	30	1.5	20	50		100%	100
	TOTAL		**15**	**1**	**8**		**20**							**800**

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Courses Offered to Second Year B.Tech. in Electrical Engineering (SEMESTER-IV) under Regulation-23															
Sr. No.	**Course Name**	**Code**	**Course Plan per Week (Hrs)**			**SL** in Hrs/ seme ster	**Cre dits**	**In semester Evaluation (Points)**			**End Semester Evaluation (Points)**		**End semester weightage**	**Total Points**
			L	**T**	**P**			**Mid term points**	**Mid term time (Hrs)**	**IE**	**Poin ts**	**Time (Hrs)**		
Core Courses														
1	Transforms, Statistics and Probability	BS-BTE401	2	1	0	48	3	30	1.5	20	100	3	50%	100
2	Power Generation, Transmission and Distribution	PC-BTE401	3	1	0	64	4	30	1.5	20	100	3	50%	100
3	Measurement & Instrumentation	PC-BTE402	3	0	0	48	3	30	1.5	20	100	3	50%	100
4	Electrical Machines - I	PC-BTE403	3	0	0	48	3	30	1.5	20	100	3	50%	100
5	Microprocessor and Microcontroller	PC-BTE404	3	0	0	48	3	30	1.5	20	100	3	50%	100
6	Signals and Systems	PC-BTE404	3	0	0	48	3	30	1.5	20	100	3	50%	100
Laboratory Courses														
7	Measurement & Instrumentation Lab	PC-BTE451	0	0	2	2	1	0	0	25	25	0	100%	50
8	Electrical Machines - I Lab	PC-BTE452	0	0	2	2	1	0	0	25	25	0	100%	50
9	Microprocessor and Microcontroller Lab	PC-BTE453	0	0	2	2	1	0	0	25	25	0	100%	50
Minor Course														
10	Minor-1	MI-BT0x1	2	0	0	32	2	30		20	100	3	50%	100
	TOTAL		**19**	**2**	**6**		**24**							**850**

L: Lecture T: Tutorial P: Practical SL: Self Learning

1 credit corresponds to 30 Hours of student engagement in a semester. Apart from actual contact hours (L T P), the remaining hours are used for term wok and self-learning by students

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Evaluation for R23

1. The Evaluation of any course shall be such that all Course Outcomes are properly mapped.
2. Mid term: The courses under the category “Theory courses”, the evaluation is based on Mid Term of 30 points for 1.5 hours duration. Tentatively the first four modules of the course content will be covered in Mid Term. Any change in the same will be informed by the course instructor. The courses under the category “Skill Enhancement”, “Value Education”, the evaluation is based on activity (Presentation, Test, Mini project, Field project, Practical Examination) of 30 points each.
3. IE: Internal Evaluation will be carried out by the course instructor for 20 points. It is the continuous evaluation throughout the semester. The evaluation will be based on minimum three of the following activities decided by course instructor. The maximum points that can be assigned to one activity will be 07. The course instructor needs to inform the students and head of the department about the activities those will be considered for IE and the points assigned to them in first week of semester. The course instructor will submit the internal evaluation points (out of 20 with activity wise break up) to examination section before the beginning of End Semester examination. List of Activities: 1. Class Involvement 2. Assignments 3. Problem Solving 4. Mini project 5. Quizzes 6. Presentation 7. Oral.
4. End semester evaluation: The course under the category “Theory courses”, the evaluation is based on End semester examination of 100 points. The end semester examination will cover all the modules of the course content. The courses under the category “Skill Enhancement”, “Value Education”, the evaluation is based on activity (Presentation, Test, Mini project, Field project, Practical Examination) of 50/100 points.
5. The evaluation of the laboratory courses include internal evaluation IE of 25 points and End semester evaluation of 25 points. The internal evaluation is based on [10 points: Laboratory Attendance, 15 points: Laboratory work] and End semester evaluation is based on [25 points: Quizes/ Presentation/ Practical Examination/ Mini project/Oral may be any two activities]
6. The co-curricular course credits in semester VIII can be earned through participation in various activities during his/ her graduation. The co-curricular course credits are not considered for CPI calculation.
7. The evaluation of Field project/ Project/ Internship shall be as mentioned in Academic Rules.

Note: Refer Academic and Examination rules and regulations for further details.

Bridge Courses- For branch transfer (compulsory)

1) Basic Electrical Engineering / Fundamentals of Electrical Engineering by Prof. DEBAPRIYA DAS
   Course content: https://archive.nptel.ac.in/content/syllabus_pdf/108105112.pdf
   Course lectures - https://archive.nptel.ac.in/courses/108/105/108105112/

2) Basic Electronics- by Dr. M. B. Patil

Course content: https://archive.nptel.ac.in/content/syllabus_pdf/108101091.pdf
Course lectures - https://archive.nptel.ac.in/courses/108/101/108101091/

Bridge Courses- for DSY (Self study)

1) Basic Electrical Engineering / Fundamentals of Electrical Engineering by Prof. DEBAPRIYA DAS
   Course content: https://archive.nptel.ac.in/content/syllabus_pdf/108105112.pdf
   Course lectures - https://archive.nptel.ac.in/courses/108/105/108105112/

2) Basic Electronics- by Dr. M. B. Patil

Course content: https://archive.nptel.ac.in/content/syllabus_pdf/108101091.pdf
Course lectures - https://archive.nptel.ac.in/courses/108/101/108101091/

3) Maths Bridge Course

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Exit Courses: The students after FY, SY, TY has to earn extra 6 credits through skill based courses/ Mini project/ internship for claiming UG certificate, UG diploma or B. Vocational respectively. The skill based courses can be selected from the courses offered by National Skill Training Institute with prior approval from the department course committee.

Any two courses from the following List or courses approved by department course committee can be selected.		
Sr. No.	**Course Name**	**Credits**
First Year of Electrical Engineering		
1	Domestic and Panel wiring	3
2	Solar System installation and maintenance	3
3	Home Automation	3
4	Internship in Electrical industry	3

Second / Third Year of Electrical Engineering		
1	Domestic and Panel wiring	3
2	Solar System installation and maintenance	3
3	Home Automation	3
4	Power System Transmission and Distribution operation and maintenance	3
5	Cable Jointing	3
6	PLC Programming	3
7	Internship in Electrical industry	3

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Table GATE-MAP

Sr. No.	Topics from GATE Syllabus	Related Core Courses in Electrical Engineering. Semester
1	Section 1 Engineering Mathematics	Applied Mathematics I, II, III,IV
2	Section 2 Electric Circuits	Electrical Networks
3	Section 3 Electromagnetic Fields	Electromagnetic Fields and Waves
4	Section 4 Signals and Systems	Signals and Systems
5	Section 5 Electrical Machines	Electrical Machines I and II
6	Section 6 Power Systems	Power Generation, Transmission and Distribution Power System Analysis Power System Operation and Control
7	Section 7 Control Systems	Control System I and II
8	Section 8 Electrical and Electronic Measurements	Electrical and Electronic Measurements
9	Section 9 Analog and Digital Electronics	Electronic Circuits, Digital Electronics
10	Section 10 Power Electronics	Power Electronics