

**Sardar Patel College of Engineering Andheri (West), Mumbai 400 058**

**BVB's Sardar Patel College of Engineering, Mumbai**

**Department of Electrical Engineering**

**Credit System**

**B.Tech in Electrical Engineering**

**Academic Year 2020-2021**

**Sardar Patel College of Engineering Andheri (West), Mumbai 400 058**

Courses Offered for B.Tech. in Electrical Engineering (Semester VII)														
Academic Year 2020-21														
Sr. No	Course Name	Code	Course Plan per Week (Hrs)			Credits	In semester Evaluation (Points)		End Semester Evaluation (Points)		End semester weightage (%)	Term work	Total Points	
			L	P	T		T-I	T-II	Points	Time (Hrs)				
Theory Courses														
1	Electric Drives	PC-BTE701	3	-	-	3	20	20	100	3	60	-	100	
Laboratory Courses														
2	Electric Drives Laboratory	PC-BTE702	-	2	-	1	-	-	-	-	-	25	25	
Professional Electives														
3	PE3	PE-BTE7XX	3	--	1	4	20	20	100	3	60	25	125	
4	PE4	PE-BTE7XX	3	--	1	4	20	20	100	3	60	25	125	
Open Electives														
5	OE3	OE-BTX7XX	Refer Table OE 3			3	Refer Table OE 3							
Project														
6	Project Stage 1	PR-BTE701	0	(2+8) <sup>\$</sup>	0	4						50 <sup>***</sup>	50	
	Total					19								
Value Added Courses														
7	Soft Computing I MATLAB/SCILAB	VA-BTE01	-	2	-	0	20	20	100	3	60	-	100	
8	Introduction to Python	VA-BTE02	-	2	-	0	20	20	100	3	60	-	100	
Non-technical Value Added Courses														
9	Non-technical value added course	VN-BTXXX		2		0	20	20	100	3	60	--	100	
Value added courses by industry														
10	Value added courses by Industry	VA-BTIXX	Refer Course Content			0	--	--	100	3	60	40	100	
Online Courses														
11	Online Course 1	OL-BTE501	-	-	-	0	-	-	-	-	-	-	-	
	<b>TOTAL</b>					<b>19</b>								

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L: Lecture P: Practical T: Tutorial

Professional Electives: PE3

PE-BTE701	Wind and Solar Energy Systems
PE-BTE702	Electrical Machine Design II
PE-BTE703	Design Management and Auditing of Electrical Systems
PE-BTE704	Digital Control Design

PE4

PE-BTE705	Restructuring and Deregulation of Power System
PE-BTE706	High Voltage Engineering
PE-BTE707	Power Electronics Applications in Power System
PE-BTE708	Computer Aided Power System Analysis

Open Electives: Table OE 3

List of Open Electives (Semester VII)													
Academic Year 2020-21													
Sr. No	Course Name	Code	Course Plan per Week (Hrs)			Credits	In semester Evaluation (Points)		End Semester Evaluation (Points)		End semester weightage (%)	Term work	Total Points
			L	P	T		T-I	T-II	Points	Time (Hrs)			
1	Computer Network	OE-BTE701	3	-	-	3	20	20	100	3	60	-	100
2	Engineering Economics	OE-BTE702	3	--	-	3	20	20	100	3	60	-	100
3	Embedded System	OE-BTE703	3	--	--	3	20	20	100	3	60	-	100
4	Internet of Things	OE-BTE704	3	--	--	3	20	20	100	3	60	-	100

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### Value Added Courses by Industry

#### Non-technical value Added Courses

- Note:
- (1) Refer (i) Academic rules and regulations and (ii) Examination rules and regulations for further details
  - (2) Laboratory course is considered as a separate head of passing.
  - (3) Assessment criteria for laboratory/Tutorial work. i.e. weightage for assessment shall be as follows: i) Attendance in Laboratory/Tutorial = 20%, (ii) Journal= 40%, (iii) Practical Examination (and/or) Mini project (and/or) Quiz (Preferably MCQs based on GATE syllabus) (and/or) Seminar (and/or) Oral (and/or) Industry visit report=40%.
  - (4) Student can opt for a online course available on <https://swayam.gov.in/> or <https://onlinecourses.nptel.ac.in/> and inform department by filling up registration form. After successful completion of the course and approval from the department UG committee, the course title can appear on the grade of student.
  - (5) Department will offer the Value Added courses in a semester subject to availability of resources and enrolment of minimum 20 students opting for the course. Upon successful completion of the Value Added course, the grade of the course will appear in the grade card of the student
  - (6) For Project course: \$ contact hours = 2 and self-learning hours =8. For project course, in-semester evaluation shall include one or more in-semester presentation. ## Report, \*\* Presentation and Viva Voce, \*\* Examined by supervisor and one internal examiner.
  - (7) Students can optionally opt for Non-Technical Value Added courses offered by Center for Continuing Education (CCE-SPCE) or value added courses offered by industry. These courses are with zero credit and upon successful completion, the course titles will appear on student's grade card.
  - (8) The course contents, wherever appropriate, should include assessment based on Project Based Learning and a report of visit to an industry related to the course.
  - (9) The contents of core courses are aligned with the latest GATE syllabus. The mapping between GATE syllabus topics and core courses is given in Table GATE-MAP.
  - (10) For Open Elective courses, students with C.P.I. higher than 8.5 can opt for obtaining the credits by completing a online course (approved by department) offered through SWAYAM or NPTEL portal instead of completing elective courses offered by department/institute. Upon successful completion of course, the score given on certificate issued by SWAYAM/NPTEL will be converted to letter grade as per applicable examination regulation

**Sardar Patel College of Engineering Andheri (West), Mumbai 400 058**

Table GATE-MAP

<b>Sr. No.</b>	<b>Topics from GATE Syllabus</b>	<b>Related Core Courses in Electrical Engineering, Semester</b>
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 System I and II
7	Section 7 Control Systems	Control System
8	Section 8 Electrical and Electronic Measurements	Electrical and Electronics Measurements
9	Section 9 Analog and Digital Electronics	Electronic Circuits, Digital Electronics, Analog Circuits
10	Section 10 Power Electronics	Power Electronics

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Courses Offered for B.Tech. in Electrical Engineering (Semester VIII)														
Academic Year 2020-21														
Sr. No	Course Name	Code	Course Plan per Week (Hrs)			Credits	In semester Evaluation (Points)		End Semester Evaluation (Points)		End semester weightage (%)	Term work	Total Points	
			L	P	T		T-I	T-II	Points	Time (Hrs)				
Laboratory Courses														
1	Electronic Design Laboratory	PC-BTE801	2	2	-	3	--	--	--		--	50	50	
Professional Electives														
2	PE5	PE-BTE8XX	3	--	1	4	20	20	100	3	60	25	125	
3	PE6	PE-BTE8XX	3	--	1	4	20	20	100	3	60	25	125	
Open Electives														
4	OE4	OE-BTX8XX	Refer Table OE 4			3	Refer Table OE 4							
Project														
5	Project Stage II	PR-BTE801	0	(2+14) <sup>\$</sup>	0	7						100 <sup>***</sup>	100	
	Total					21								
Value Added Courses														
6	Soft Computing I MATLAB/SCILAB	VL-BTE01	-	2	-	0	20	20	100	3	60	-	100	
7	Introduction to Python	VL-BTE02	-	2	-	0	20	20	100	3	60	-	100	
9	Non-technical value added course	VN-BTXXX		2		0	20	20	100	3	60	--	100	
Value Added Courses offered by Industry														
10	Value added courses by Industry	VA-BTIXX	Refer Course Content			0	--	--	100	3	60	40	100	
Online Courses														
11	Online Course 1	OL-BTE501	-	-	-	0	-	-	-	-	-	-	-	
	<b>TOTAL</b>					<b>21</b>								

L: Lecture P: Practical T: Tutorial

**Sardar Patel College of Engineering Andheri (West), Mumbai 400 058**

Professional Electives: PE5

PE-BTE801	Power System Dynamics and Control
PE-BTE804	Power Quality and FACTS
PE-BTE806	Industrial Automation
PE-BTE808	Advanced Techniques in Power System Protection

PE6

PE-BTE802	Smart Grid
PE-BTE803	HVDC Transmission System
PE-BTE805	Advanced Electric Drives
PE-BTE807	Industrial Electrical Systems
PE-BTE809	Non linear control system

Open Electives: Table OE 4

List of Open Electives (Semester VIII)													
Academic Year 2020-21													
Sr. No	Course Name	Code	Course Plan per Week (Hrs)			Credits	In semester Evaluation (Points)		End Semester Evaluation (Points)		End semester weightage (%)	Term work	Total Points
			L	P	T		T-I	T-II	Points	Time (Hrs)			
1	Robotics	OE-BTE801	3	-	-	3	20	20	100	3	60	-	100
2	Power Plant Engineering	OE-BTE802	3	--	-	3	-	-	-	-	-	-	100
3	Electrical Engineering Materials	OE-BTE803	3	--	--	3	20	20	100	3	60	-	100
4	Medical Electronics	OE-BTE804	3	--	--	3	20	20	100	3	60	-	100
5	Image Processing	OE-BTE805	3	--	--	3	20	20	100	3	60	-	100

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### Value Added Courses by Industry

### Non-technical value Added Courses

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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
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