

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

BVB's Sardar Patel College of Engineering, Mumbai

Department of Electrical Engineering

Credit System

T. Y. B.Tech in Electrical Engineering

Academic Year 2020-2021

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

**Courses Offered for Third Year B.Tech. in Electrical Engineering (Semester V)
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	Electromagnetic Fields and Waves	PC-BTE501	3	-	-	3	20	20	100	3	60	--	100
2	Control System	PC-BTE502	3	-	-	3	20	20	100	3	60	-	100
3	Electrical Machines II	PC-BTE503	3	-	--	3	20	20	100	3	60	--	100
4	Power System I	PC-BTE504	3	-	-	3	20	20	100	3	60	-	100
5	Power Electronics	PC-BTE505	3	-	-	3	20	20	100	3	60	--	100
Laboratory Courses													
6	Control System Laboratory	PC-BTE506	-	2	-	1	-	-	-	-	-	25	25
7	Electrical Machines II Laboratory	PC-BTE507	-	2	-	1	-	-	-	-	-	25	25
8	Power Electronics Laboratory	PC-BTE508	-	2	--	1	-	-	-	-	-	25	25
9	Electromagnetic Fields and Waves Laboratory	PC-BTE509	-	2	--	1	-	-	-	-	-	25	25
10	Power System I Laboratory	PC-BTE510	-	2	-	1	-	-	-	-	-	25	25
Professional Electives													
9	PE1	PE-BTE5XX	3	--	1	4	20	20	100	3	60	25	125
	Total					24							
Value Added Courses													
10	Soft Computing I	VA-BTE01	-	2	-	0	20	20	100	3	60	-	100
11	Introduction to Python	VA-BTE02	-	2	-	0	20	20	100	3	60	-	100
12	Finite Element Methods for Electrical Engineering	VA-BTE05	-	2	-	0	20	20	100	3	60	-	100
Non –technical Value Added Courses													
13	Non-technical value added course	VN-BTXX		2		0	20	20	100	3	60	--	100
Value added courses by industry													
14	Value added courses by Industry	VA-BTIXX	Refer Course Content			0	--	--	100	3	60	40	100
Online Courses													
15	Online Course 1	OL-BTE501	-	-	-	0	-	-	-	-	-	-	-
	TOTAL		18	10	1	24							750

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Professional Electives (PE I): PE-BTE501: Digital Signal Processing
PE-BTE502: Computer Architecture

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 card of student.

(5) The Mandatory courses are with Pass (P) and No Pass (NP) grades.

(6) 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 Completion of the Value Added course, the course will appear in the grade card of the student.

(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.

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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 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 Third Year B.Tech. in Electrical Engineering (Semester VI)													
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	Power System II	PC-BTE601	3	-	1	3	20	20	100	3	60	-	100
2	Switchgear and Protection	PC-BTE602	3	-	-	3	20	20	100	3	60	-	100
Laboratory Courses													
3	Switchgear and Protection Laboratory	PC-BTE603	-	2	-	1	-	-	-	-	-	25	25
4	Electrical Simulation Laboratory	PC-BTE604	-	2	-	1	-	-	-	-	-	25	25
5	Power System II Laboratory	PC-BTE605	-	2	-	1	-	-	-	-	-	25	25
Professional Electives													
5	PE2	PE-BTE6XX	3	--	1	4	20	20	100	3	60	25	125
Open Electives													
6	OE1	OE-BTX6XX	Refer Table OE 1			3	Refer Table OE 1						
7	OE2	OE-BTX6XX	Refer Table OE 2			3	Refer Table OE 2						
	Total					19							
Value Added Courses													
8	PLC	VA-BTE01	-	2	-	0	20	20	100	3	60	-	100
9	Soft computing II ETAP and WAMS	VA-BTE06	-	2	-	0	20	20	100	3	60	-	100
Non-Technical Value Added Courses													
10	Non-technical value added course	VN-BTXXX		2		0	20	20	100	3	60	--	100
Value added courses by industry													
11	Value added courses by Industry	VA-BTIXX	Refer Course Content			0	--	--	100	3	60	40	100
Online Courses													
12	Online Course 1	OL-BTE601	-	-	-	0	-	-	-	-	-	-	-
Mandatory Courses													
13	Environmental Science *	MC-BTE03	3	0	0	0	20	20	100	3	60	-	100
	TOTAL					19							

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L: Lecture P: Practical T: Tutorial

(*): The course MC-BTE003 may be offered by department for its completion in online mode on SWAYAM/NPTEL portal by registering for an equivalent course approved by the department. In such case, student must obtain online course completion certificate for passing the course.

Professional Electives (PE2): PE-BTE601: Electrical Machine Design I
PE-BTE602: Control Systems Design

Open Electives: Table OE 1

List of Open Electives (Semester VI)													
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	Project Management	OE-BTE601	3	-	-	3	20	20	100	3	60	-	100
2	Artificial Intelligence	OE-BTE602	3	--	-	3	20	20	100	3	60	-	100
3	Linear Algebra and matrix Computation	OE-BTE605	3	--		3	20	20	100	3	60	-	100

Open Electives: Table OE 2

List of Open Electives (Semester VI)													
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	Communication Engineering	OE-BTE603	3	-	-	3	20	20	100	3	60	-	100
2	VLSI circuits	OE-BTE604	3	--	-	3	20	20	100	3	60	-	100

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 card of student.
- (5) The Mandatory courses are with Pass (P) and No Pass (NP) grades.
- (6) 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 Completion of the Value Added course, the course will appear in the grade card of the student.
- (7) Students can optionally opt for Non-Technical Value Added courses offered by Center for Continuing Education (CCE-SPCE) 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

Table GATE MAP

Sr. No.	Topics from GATE Syllabus	Related Core Courses in Electrical Engineering. Semester
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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
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