M & V Patel Department of Electrical Engineering

Action taken report on the feedbacks received from different Stack Holders

For the AY 2015-16

The summary of the feedback and suggestions received from the stakeholder and corresponding action taken for AY 2015-2016 is as below.

Sr. No.	Suggestion Received	Action Taken	Annexure Page no.
1	Include Project work	"Minor Project I" and "Minor Project II" introduced from AY 2018-19	28,29,36
2	Final semester should only based on training	Form AY year 2019-20, final semester courses were reduced. Also, it is planned to offer only one course " Industrial Project" in final semester from AY 2022-23.	3,11
3	Include Industrial Training.	"Summer Internship I" introduced in Third Year from AY 2018-19, and "Summer Internship II" introduced in Fourth Year from AY 2019-20	28,36,53,62
4	Final semester should only based on training	Form AY year 2019-20, final semester courses were reduced. Also, it is planned to offer only one course " Industrial Project" in final semester from AY 2022-23.	3,11
5	Internship should be included in final year.	"Summer Internship I" introduced in Third Year from AY 2018-19, and "Summer Internship II" introduced in Fourth Year from AY 2019-20	28,36,53,62

P.V.Bhatt

HEAD OF DEPARTMENT
Dept. of Electrical Engg.
Chandubhai S. Patel Institute of Technology
At. & Po. Changa-388421., Ta. Petlad,
Dist. : Anand. (Gujarat)

Minutes –12th Board of Studies Meeting
M&V Patel Department of Electrical Engineering
Faculty of Technology & Engineering, CHARUSAT

Date : September 3, 2016, Saturday
Time : 10:00 am onwards
Venue: Room No: 102, HOD (EE), CSPIT, CHARUSAT Campus

The 12th meeting of Board of Studies, M & V Patel Department of Electrical Engineering, Faculty of Technology and Engineering (FTE), Charotar University of Science and Technology (CHARUSAT) was held on 3/9/2016 at 10:00 a.m. at M & V Patel Department of Electrical Engineering, CSPIT, CHARUSAT Campus. Following members were present:

1	Dr. Praghnesh Bhatt	**Chairman;**	Professor & Head, Department of Electrical Engineering,	
2	Dr. Kartik Pandya	**Member;**	Professor, Department of Electrical Engineering,	
3	Dr. Bhinal Mehta	**Member;**	Assistant Professor Department of Electrical Engineering,	
4	Mr. Nilay Patel	**Member;**	Assistant Professor Department of Electrical Engineering,	
5	Ms. Pankita Mehta	**Member;**	Assistant Professor Department of Electrical Engineering,	
6	Mr. Jivanadhar Joshi	**Member;**	Assistant Professor, Department of Electrical Engineering,	
7	Dr. Sanjay R. Joshi	**External Member;**	Principal Government Engineering College, Valsad	
8	Dr. Bhavik Suthar	**External Member;**	Associate Professor Government Engineering College, Modasa	
9	Dr. Santosh Vora	**External Member;**	Professor Department of Electrical Engineering Nirma University, Ahmedabad	
10	Dr. Vijay Shah	**External Member;**	R&D Specialist, BU-PPMV, Vadodara	
11	Mr. Kirat Pandya	**External Member;**	AGM, Schneider Electricals Ltd, Vadodara	
12	Mr. Sanjay Mahagaokar	**External Member;**	Dy General Manager Engineering and Technology Rotomag Power Drives Ltd	

Initiation:

Dr. Praghnesh Bhatt welcomed all the members of Board of Studies.

Agenda Proceedings & Resolutions:-

Item 12.01:	To approve teaching and examination scheme of B. Tech program under Choice Based Credit System (CBCS) for 3rd to 8th Semester effective from ACY 2017-2018.
	Proceedings 12.01: The teaching and examination scheme of B. Tech program under Choice Based Credit System (CBCS) for 3rd to 8th Semester effective from ACY 2017-2018 has been discussed in details. **Suggestions Received:** ▪ The proposed structure of CBCS has been discussed in detail along with core and different elective courses. ▪ The courses are appropriately distributed among the major areas of electrical engineering such as power system, electrical machines, power electronics, microprocessors & microcontrollers along with required supplementary courses. ▪ It is appreciated to keep the more weightage to practical hours. ▪ The students must know the fundamental of the subjects and they must have knowledge about the various electrical products available in the market along with its specifications and prices. ▪ The students should have the opportunities to develop hardware based projects to learn the theoretical concepts more effectively. The preparation of the complete project report enhances their writing, presentation and communication skills. ▪ Power generation by renewable energy sources and its modeling concepts needs to be imparted as they are the present day demand. ▪ The operating paradigm of the distribution system has changed drastically and its concepts can be covered by offering the courses on smart grid, micro grid and distributed generation. ▪ Early exposure to practical/industrial training makes the students familiar with industrial developments and practices. The projects/training ▪ The department has purchased good number of licensed software. The knowledge of these licensed software will add values for industrial jobs as well as for the further studies.

	▪ The valuable suggestions are received from all invited members of BoS for finalizing the contact hours of 8th semester final year project. Different dimensions to keep the project for whole semester are discussed in detail considering industries' criteria to absorb the students for project. The possibilities to award in-house projects based on hardware development or simulations for 8th semester are also discussed. ▪ Handbooks, catalogs and IS & IEC standards, product manuals should be included for the course on Commissioning and Testing of Electrical Equipments. ▪ The curriculum structure of other universities such as GTU, Nirma, Amity, IITs, NIT, NUS, University of Illinois are also referred and discussed. The goal of designing curriculum structure is to prepare the students for GATE, other competitive exams and for further studies. ▪ The university core and elective courses are also reviewed and they are found suitable to inculcate values & ethics, to enhance critical thinking & logic, to improve communication skills and to increase basic analytical ability among the students. ▪ The vision and mission of the department, POs and PEOs are reviewed and redefined. For 2nd year courses effective from ACY 2017-2018, the individual course objectives and their outcomes are defined. **Resolution 12.01:** • Based on the extensive discussion and suggestion received from the BoS members, the teaching and examination scheme of B. Tech Program under CBCS is finalized and attached in **Annexure 12.I.**
Item 12.02:	To review and approve the detailed syllabus of 1st and 2nd year B. Tech program under CBCS which will be effective from ACY 2017-2018.
	Proceedings 12.02: The detailed syllabus of the courses for B Tech – 2nd Year (3rd and 4th Semesters) effective from 2017-2018 are reviewed. **Suggestions Received:** ▪ The depths of contents of different courses are discussed at length. ▪ The contact hours required to cover the proposed topics are verified and required changes are suggested. ▪ For **EE281** (Electrical Engineering Materials) (University Elective I): The concepts of different conducting, insulating, magnetics and semiconductor material will be given. This will help students in later stage at designing of machines. ▪ For **EE282** (Electrical Power Utilization and Traction) (University Elective II): Electric heating, welding, Fundamentals of illumination and traction can be covered in this course. ▪ For **EE241**: Analog and Digital Electronics, course contents are discussed and finalized.

	For this course, more useful and fundamental book "Design with Operational Amplifier and analog Integrated Circuits, Sergio Franco, McGraw Hill" is suggested. In addition to existing test kits in analog and digital electronics lab, "Analog Discovery Kit" is suggested. ▪ For **EE242**: Circuit Theory, the contents are found suitable. Following new books for circuit theory are proposed. 1. Electric Circuit Analysis, K.S. Sureshkumar, Pearson Education, India 2. Basic Circuit Theory, Charles A. Desoer and Ernest S. Kuh, McGraw Hill ▪ For **EE243**: Electrical Measurements and Industrial Instrumentation, the conventional topics on measurement such as resistance measurement, different AC bridges, shunts and multipliers should be incorporated. The digital methods for power measurement should be discussed. ▪ For **EE244**: Electrical Power Generation and its Economics, the contents are found suitable. ▪ For **EE245**: Control System, state space methods should be limited as compared to other methods. The methods for designing controller structure and compensator designs are suggested to include. ▪ For **EE246** Microprocessor & Microcontrollers, the syllabus is well designed. ▪ For **EE247**: Transformers and Induction Machines, the combination of two AC machines will work well; the portion of the commissioning of transformer and motors need not to be discussed at 4th semester. ▪ Revised course of MA241 Engineering Mathematics III, which is passed in respective BoS will be introduced in third semester of AY 2017-18 **Resolution 12.02:** ▪ The suggestions received from BoS members are incorporated and detailed syllabi for B Tech – 2nd Year (3rd and 4th Semesters) effective from 2017-2018 is approved and is attached in **Annexure – 12.II.**
Item 12.03	To approve the teaching and examination scheme of M. Tech program under Choice Based Credit System (CBCS) effective from ACY: 2016-2017
	Proceedings 12.03: The teaching and examination scheme of M. Tech program under Choice Based Credit System (CBCS) effective from ACY: 2016-2017 is reviewed. **Suggestions Received:** ▪ The different core and elective courses offered at university level are reviewed. The courses under program core, program electives and cluster electives are also reviewed. **Resolution 12.03:**

	University elective courses are introduced. The teaching and examination scheme of M. Tech program under Choice Based Credit System (CBCS) effective from ACY: 2016-2017 is approved and attached in **Annexure – 12.III.**
Item 12.04	To review and approve the detailed syllabus of 1st and 2nd year M. Tech program under CBCS effective from ACY 2016-2017.
	Proceedings 10.04: The detailed syllabus of 1st and 2nd year M. Tech program under CBCS effective from ACY 2016-2017 is reviewed. **Suggestions Received:** **EE781 Optimization Techniques and EE782** The contents of all the course of 1st and 2nd semester of M. Tech are discussed at length. The courses under program electives and cluster electives are good and syllabus contents are well designed. Very good university electives are constructed by various BoS and listed in annexure IV. **Resolution 12.04:** The detailed syllabus of 1st and 2nd year M. Tech program under CBCS effective from ACY 2016-2017 is approved and attached in **Annexure – 12.IV**.
Item 12.05	To review and approve (a) T&E scheme and the detailed syllabus of 3rd year B. Tech program for a batch of 2015 entry and (b) T&E scheme and detailed syllabus of 4th year B. Tech program for a batch of 2014 entry
	Resolution 10.05: (a) T&E scheme and the detailed syllabus of 3rd year B. Tech program for a batch of 2015 entry and (b) T&E scheme and detailed syllabus of 4th year B. Tech program for a batch of 2014 entry are approved and attached in **Annexure 12.V and Annexure 12.VI.**
Item 12.06	Discussion on effective implementation of Outcome Based Education (OBE) and ICT based Teaching-Learning
	Suggestions Received: ▪ All faculty members must aware about each criteria defined by NBA. ▪ The proper understanding of mapping of POs, PEOs, COs and their assessment tools is required. ▪ Faculty contribution should be increased for publication, funded projects and consultancy. ▪ The usage of open course ware from NPTEL, MIT and BISAC must be increased.
Item 12.07	Introducing the new PG program in Electrical Engineering
	Suggestions Received: Following PG programs in Electrical Engineering are proposed. (1) Power Electronics and Drives (2) Renewable Energy (3) Automation and Control
Item 12.08	Suggestion regarding new UG programs in new Institute of Technology of Faculty of

	Technology and Engineering, CHARUSAT
	Suggestions Received: Following new UG programs in can be proposed along with CE, IT, ICT. (1) Mechanical Engineering (2) Instrumentation and Control (3) Bio Informatics
Item 12.09	Discussion regarding recent approval from NBA and scope for the improvement
	All invited BoS members congratulated the University, Institute and Department for getting "A" graded from NAAC and KCG as well as for getting NBA for three departments
Item 12.10	Approval of Examiners' Panel
	The examiners panels for B. Tech and M. Tech have been reviewed and approved. The approved examiner panel is attached in **Annexure 12.VII.**

Additional Items

Sr. No	**Agenda**	**Discussion/Suggestions**
1	Review of Exam Question Papers	Question papers of internal and university examination have been reviewed. The briefings about the continuous evaluation, freedom for pedagogy selection for faculty and execution of the practical sessions have been given to external BoS members. The quality of question papers are found satisfactory, but it is suggested to increase the weighatge on the questions that can increase the analytical and logical thinking ability of students.
2	Review of Result Analysis	The records of result analysis of both internal and university exam are maintained. The results of both the exams are generally discussed and analyzed in the department meeting as soon as the exam gets over and the necessary actions are decided. The YoY comparisons of the results are also discussed and the figures are acceptable. The efforts should be given to again improve the results at all levels. The conduction of the remedial coaching for weaker students has been appreciated by the members.
3	Review of Placement Records	The campus placement of the student needs to be increased. More efforts are required to invite the companies for placement. The aptitude sessions organized for the students are appreciated. It is advised to keep extra technical session to prepare the students for technical skills.
4	Review of B. Tech and M. Tech Projects works	The project titles for B. Tech and M. Tech are reviewed and found satisfactory. It is suggested to give more emphasis on hardware based projects at B. Tech level. For M. Tech, the extensive use of licenses software may help the students to solve/reproduce the IEEE journal papers. Paper presentation for M. Tech students should be made compulsory.
5	Review of Feedback from Students, Identification of slow learners, Counseling	Review pattern for the students feedback and actions after the feedback have been explained. It is an useful component to improve the performance of teacher and T-L practices. The student counseling activities are very appreciated by all the members.

	activities	

Dr. Praghnesh Bhatt
Chairman
Board of Studies (EE)

HEAD OF DEPARTMENT
Dept. of Electrical Engg.
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Annexure 12.I & II: TEACHING & EXAMINATION SCHEME FOR B TECH PROGRAMME IN ELECTRICAL ENGINEERING (CBCS) Entry Year: 2016

CHAROTAR UNIVERSITY OF SCIENCE & TECHNOLOGY (CHARUSAT)											
TEACHING & EXAMINATION SCHEME FOR B TECH PROGRAMME IN ELECTRICAL ENGINEERING (CBCS) Entry Year: 2016											
Level	**Course Code**	**Course Title**	**Teaching Scheme**				**Examination Scheme**				
			Contact Hours			**Credit**	**Theory**		**Practical**		**Total**
			Theory	**Practical/Tutorial**	**Total**		**Internal**	**External**	**Internal**	**External**	
Level 1	HS101A- HS106A	A Course on Liberal Arts	2		2	2			50	50	**100**
	MA141	Engineering Mathematics I	4	1	5	4	30	70	0	0	**100**
	ME141	Engineering Graphics	2	4	6	4	30	70	50	50	**200**
	PY141	Engineering Physics	3	2	5	4	30	70	25	25	**150**
	CL141	Engineering Mechanics	4	2	6	5	30	70	25	25	**150**
	ME142	Workshop Practices	0	2	2	1			25	25	**50**
		Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra-curricular &co curricular			10						
			15	**11**	**36**	**20**	**120**	**280**	**175**	**175**	**750**
	HS 121A	English Language & Literature	2		2	2	25	25	25	25	**100**
	MA142	Engineering Mathematics II	4	1	5	4	30	70			**100**
	CL142	Environmental Science	2	0	2	2	30	70			**100**
	IT141	Fundamentals of Computer Programming	3	2	5	4	30	70	25	25	**150**
	ME143	Basics of Civil & Mechanical Engineering	4	2	6	5	30	70	25	25	**150**
	EE141	Basics of Electronics & Electrical Engineering	4	2	6	5	30	70	25	25	**150**
		Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra-curricular &co curricular			10						
			19	**7**	**36**	**22**	**175**	**375**	**100**	**100**	**750**

	HS122A/HS131A	Values and Ethics/Philosophy	2		2	2	30	70			**100**
	MA241	Engineering Mathematics III	4	0	4	4	30	70			**100**
	EE241	Analog and Digital Electronics	4	2	6	5	30	70	25	25	**150**
	EE242	Circuit Theory	4	2	6	5	30	70	25	25	**150**
	EE243	Electrical Measurements and Industrial Instrumentation	4	2	6	5	30	70	25	25	**150**
	XXXXX	University Elective- I	2	0	2	2	30	70			**100**
		Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra-curricular &co curricular			10						
Level 2			**20**	**6**	**36**	**23**	**180**	**420**	**75**	**75**	**750**
	HS127.01A/HS133A/ HS123.01A	Communication Skills-2/ Creativity, problem Solving and Innovation/ Critical Thinking and Logic	2		2	2	50	50			**100**
	EE244	Electrical Power Generation and its Economics	4	0	4	4	30	70			**100**
	EE245	Control Systems	4	2	6	5	30	70	25	25	**150**
	EE246	Microprocessor & Microcontrollers	4	2	6	5	30	70	25	25	**150**
	EE247	Transformers and Induction Machines	4	4	8	6	30	70	50	50	**200**
	XXXXX	University Elective- II	2	0	2	2	30	70			**100**
		Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra-curricular &co curricular			7						
			20	**8**	**35**	**24**	**200**	**400**	**100**	**100**	**800**

Level 3	HS124.01A	Professional Communication I	2		2	2			30	70	**100**
	EE341	Electrical Power Transmission and Distribution	4	2	6	5	30	70	25	25	**150**
	EE342	Synchronous and DC Machines	4	4	8	6	30	70	50	50	**200**
	EE343	Power Electronics & Drives I	4	2	6	5	30	70	25	25	**150**
	EE344	Minor Project I	0	4	4	2			50	50	**100**
	EE345	Electrical Product Survey				2			50	50	**100**
	EE350	Summer Internship I		.3	3	3			75	75	**150**
	EE371-EE372	Programme Elective I	3	2	5	4	30	70	25	25	**150**
		Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra-curricular &co curricular			6						
			17	**14**	**37**	**26**	**120**	**280**	**255**	**295**	**950**
	HS125A	**Society, Governance and International Studies**	2		2	2	25	25	25	25	**100**
	EE346	Digital Signal Processing	3	2	5	4	30	70	25	25	**150**
	EE347	Programmable Logic Controllers and Industrial Automation	3	2	5	4	30	70	25	25	**150**
	EE348	Power Electronics & Drives II	3	2	5	4	30	70	25	25	**150**
	EE349	Fault Analysis and Switchgear	4	2	6	5	30	70	25	25	**150**
	EE360	Minor Project II	0	4	4	2	0	0	50	50	**100**
	EE376-EE377	Programme Elective II	3	2	5	4	30	70	25	25	**150**

		Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra-curricular &co curricular			4						
			18	**14**	**36**	**25**	**175**	**375**	**200**	**200**	**950**
Level 4	EE441	Power System Operations and Control	4	2	6	5	30	70	25	25	**150**
	EE442	Power System Protection	4	2	6	5	30	70	25	25	**150**
	EE443	Electrical Machine Design	4	4	8	6	30	70	25	25	**150**
	EE444	Simulation Lab	0	2	2	1			50	50	**100**
	EE445	Summer Practical Training				3			50	50	**100**
	EE471-EE472	Programme Elective III	4	2	6	5	30	70	25	25	**150**
		Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra-curricular &co curricular			2						
			16	**12**	**30**	**25**	**120**	**280**	**200**	**200**	**800**
	EE446	Commissioning and Testing of Electrical Equipment	4	2	6	5	30	70	25	25	**150**
	EE447	Modeling and Control of Renewable Energy Sources	4	2	6	5	30	70	25	25	**150**
	EE448	Major Project				9			250	250	**500**
	EE473-EE474	Programme Elective IV	4	2	6	5	30	70	25	25	**150**
			12	**6**	**18**	**27**	**90**	**210**	**325**	**325**	**950**

CHAROTAR UNIVERSITY OF SCIENCE & TECHNOLOGY (CHARUSAT)											
		Hours				Credits	Marks				
			Theory	Practical	Total						
			137	78	264	192	1180	2620	1430	1470	6700

LIST OF ELECTIVES FOR B TECH PROGRAMME IN ELECTRICAL ENGINEERING

University Electives for Level 2

	UNIVERSITY ELECTIVE 1	UNIVERSITY ELECTIVE 2	
EE281	Electrical Engineering Materials	EE282	Electrical Power Utilization and Traction

Electives for Level 3

	PROGRAMME ELECTIVE 1	PROGRAMME ELECTIVE 2	
EE371	Advanced Microcontrollers	**EE376**	Special Electrical Machines and Applications
EE372	VLSI Technology and Design	**EE377**	Embedded System

Electives for Level 4

	PROGRAMME ELECTIVE 3	PROGRAMME ELECTIVE 4	
EE471	Power Electronics Applications in Power System	**EE473**	Smart Grid and Distribution Generation
EE472	Advances in Power System	**EE474**	Energy Auditing and Management

University Elective I & II:	**Occupational Health and Safety, IPR, Regulatory Affairs, Contract Management,**
(Will be available in a Common Slot)	**Energy Management, Research Methodology, Entrepreneurship, Project Management, First AID and Life Support**
	Risk Management, Disaster Management, Scientific Instrumentation & Measurement, Operation Research, **Business Environment, Quality Assurance, Computer Programming, Numerical Analysis, Web Designing, Cyber Security etc**

Annexure 12.III & IV TEACHING AND EXAMINATION SCHEME FOR M Tech in Electrical Engineering (Electrical Power Systems)

Semester	Course Code	Course Title	Teaching Scheme				Examination Scheme				
			Theory	Practical/Tutorial	Total	Credit	Theory		Practical		Total
							Internal	External	Internal	External	
Sem 1	EE741	Modeling & Simulation of Electrical Machines (PC - 1)	4	2	6	5	30	70	25	25	150
	EE742	Modern Power System Operations (PC - 2)	3	2	5	4	30	70	25	25	150
	EE743	Advanced Power Electronics in Power Systems (PC - 3)	3	2	5	4	30	70	25	25	150
	EE7XX	Programme Elective-1 (PE - 1)	3	2	5	4	30	70	25	25	150
	EE7XX	Program Cluster Elective - 1 (PCT - 1)	3	2	5	4	30	70	25	25	150
	HS701	Advanced Critical Thinking & Logic (UC - 1)	2	0	2	2	30	70	0	0	100
	XXXXX	University Elective 1 (UE - 1)	2	0	2	2	30	70	0	0	100
			20	**10**	**30**	**25**	**210**	**490**	**125**	**125**	**950**
Sem 2	EE744	Advanced Power System Dynamics & Stability (PC - 4)	4	2	6	5	30	70	25	25	150
	EE745	FACTS & HVDC Transmission (PC - 5)	3	2	5	4	30	70	25	25	150

	EE746	Advanced Power System Protection (PC - 6)	3	2	5	4	30	70	25	25	150
	EE7XX	Programme Elective - 2 (PE - 2)	3	2	5	4	30	70	25	25	150
	EE7XX	Program Cluster Elective – 2skills	3	2	5	4	30	70	25	25	150
	HS702	Academic Writing & communication (UC-2)	0	2	2	2	0	0	30	70	100
	XXXXX	University Elective 2 (UE - 2)	2	0	2	2	30	70	0	0	100
			18	**12**	**30**	**25**	**180**	**420**	**155**	**195**	**950**

Programme Electives of Semester 1 and 2

Programme Electives 1 (PE 1) for Semester 1			**Programme Electives 2 (PE 2) for Semester 2**	
EE761	Control System Engineering		EE763	Modeling and Simulation of Renewable Energy Sources
EE762	Engineering Optimization Techniques		EE764	Distributed Generation and Smart Grid

Cluster Electives of Semester 1 and 2

Program Cluster Electives 1 (CT 1) for Semester 1			**Program Cluster Electives 2 (CT 2) for Semester 2**	
EE771	Digital Signal Processing & its Application		EE772	Restructuring & Deregulation of Power Systems
IT767	Micro device Programming		IT768	Applied Cryptography
EC767	Embedded System Design		EC768	Digital Image & Speech Processing
CE767	Operating System Design & Concepts		CE768	Software Project Management & Quality Assurance

University Electives of Semester 1 and 2

University Electives (UE 1) for Semester 1			**University Electives (UE 2) for Semester 2**	
MA771	Reliability and Risk Analysis		EE782	Energy Audit and Management
EE781	Optimization Techniques		CE771	Project Management
ME781	Occupational Health and Safety		IT771	Cyber Security and Laws
CE772	Research Methodology		CA 842	Mobile Application Development
CA730	Internet & Web Designing		PT796	Fitness & Nutrition
PT795	Health & Physical Activity		NR 752	Epidemiology and Community Health
NR 751	Women's Health		OC733	Introduction to Polymer Science
RD701	Introduction to Analytical Techniques		MB651	Software based Statistical Analysis
RD702	Introduction to Nano science& Technology		PH826	Intellectual Property Rights

MB650	Creative Leadership		MA772	Design of Experiments	
PH825	Community Pharmacy Ownership				

Semester	Course Code	Course Title	Credit	Examination Scheme					
				Internal		External			Total
				Progress Report	Progress Seminar	Report	Seminar	Viva	
Sem 3	EE811	Project Preliminaries	4	50	50	0	50	50	200
	EE812	Project Phase 1	18	100	100	100	100	100	500
			22	**150**	**150**	**100**	**150**	**150**	**700**
Sem 4	EE813	Project Phase 2	30	200	200	200	200	200	1000
			30	**200**	**200**	**200**	**200**	**200**	**1000**
		Grand Total	**102**						**3600**

Annexure 12.V TEACHING AND EXAMINATION SCHEME FOR Final Year B Tech in Electrical Engineering Entry Year: 2014

Sem	Course Code	Course title	Teaching Scheme				Examination Scheme				Total
			Contact Hrs.			Credits	Theory		Practical		
			Theory	Practical	Total		Internal	External	Internal	External	
Final Sem-VII	EE 401.01	Electrical Machine Design - I	3	2	5	4	30	70	25	25	150
	EE 402	Electrical Power System - IV	3	2	5	4	30	70	25	25	150
	EE 403	Power Electronics & Drives - II	4	2	6	5	30	70	25	25	150
	EE 404	Energy Conservation and Management	3	0	3	3	30	70			100
	EE 405	Power System Protection	4	2	6	5	30	70	25	25	150
		Elective - I	4	2	6	5	30	70	25	25	150
			21	**10**	**31**	**26**	**180**	**420**	**125**	**125**	**850**
Final Sem-VIII	EE 406.01	Electrical Machine Design - II	3	2	5	4	30	70	25	25	150
	EE 407	Commissioning of Electrical Equipments	3	2	5	4	30	70	25	25	150
	EE 408	Power System Stability & Control	4	2	6	5	30	70	25	25	150
	EE 409	Digital Signal Processing	3	2	5	4	30	70	25	25	150
		Elective - II	4	2	6	5	30	70	25	25	150
	EE 410.01	Project	0	6	6	3	0	0	50	100	150
			17	**16**	**33**	**25**	**150**	**350**	**175**	**175**	**900**

Code	Elective - I		Code	Elective - II
EE 414	Power System Operations		EE 415	Advances in Power System
EE 418	Applications of Advanced Microcontrollers in Electrical Engineering-I		EE 419	Applications of Advanced Microcontrollers in Electrical Engineering-II

Annexure 12.VI TEACHING AND EXAMINATION SCHEME FOR THIRD Year B Tech in Electrical Engineering Entry Year: 2015

Sem	Course Code	Course Title	Teaching Scheme					Examination Scheme				
			Contact Hours				Credit	Theory		Practical		Total
			Theory	Practical	Tutorial	Total		Internal	External	Internal	External	
TY Sem-V	EE301	Electrical Machines-II	4	2	0	6	5	30	70	25	25	150
	EE302.01	Electrical Power System-II	4	0	0	4	4	30	70	0	0	100
	EE303.01	Microcontrollers and Applications	3	2	0	5	4	30	70	25	25	150
	EE304.01	Industrial Instrumentation	3	2	0	5	4	30	70	25	25	150
	EE305	Power Electronics & Drives-I	4	2	0	6	5	30	70	25	25	150
	EE311	Simulation Lab-I	0	2	0	2	1	0	0	25	25	50
	HS124.01A	Professional Communication	**2**		**0**	**2**	**2**	**0**	**0**	**30**	**70**	**100**
			20	**10**		**30**	**25**	**150**	**350**	**155**	**195**	**850**
TY Sem-VI	EE306.01	Electrical Machines-III	4	2	0	6	5	30	70	25	25	150
	EE307	Electrical Power System-III	4	2	0	6	5	30	70	25	25	150
	EE308.01	High Voltage Engineering	3	2	0	5	4	30	70	25	25	150
	EE309.01	Electrical Power Utilisation & Traction	3	0	0	3	3	30	70			100
	EE310.01	Programmable Logic Controllers and Industrial Automation	4	2	0	6	5	30	70	25	25	150
	EE312	Simulation Lab-II	0	2	0	2	1	0	0	25	25	50
	HS125.01A/ HS130A/ HS134A	Society, Governance and International Studies/ Law and Justice/ Contributor Personality Development	2		**0**	**2**	**2**	**25**	**25**	**25**	**25**	**100**

			20	**10**		**30**	**25**	**175**	**375**	**150**	**150**	**850**

Annexure 12.VII Examiner Panel List for B. Tech and M. Tech Examination

Examiner Panel for Electrical Engineering (External Examiners)

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Minutes – 12th Board of Studies Meeting
M&V Patel Department of Electrical Engineering
Faculty of Technology & Engineering, CHARUSAT

Date : September 3, 2016, Saturday
Time : 10:00 am onwards
Venue: Room No: 102, HOD (EE), CSPIT, CHARUSAT Campus

The 12th meeting of Board of Studies, M&V Patel Department of Electrical Engineering, Faculty of Technology and Engineering (FTE), Charotar University of Science and Technology (CHARUSAT) was held on 3/9/2016 at 10:00 a.m. at Department of Electrical Engineering, CSPIT, CHARUSAT Campus. Following members were present:

1	Dr. Praghnesh Bhatt	**Chairman;**	Professor & Head, Department of Electrical Engineering,	
2	Dr. Kartik Pandya	**Member;**	Professor, Department of Electrical Engineering,	
3	Dr. Bhinal Mehta	**Member;**	Assistant Professor Department of Electrical Engineering,	
4	Mr. Nilay Patel	**Member;**	Assistant Professor Department of Electrical Engineering,	
5	Ms. Pankita Mehta	**Member;**	Assistant Professor Department of Electrical Engineering,	Pankita
6	Mr. Jeevanadhar Joshi	**Member;**	Assistant Professor, Department of Electrical Engineering,	
7	Dr. Sanjay R. Joshi	**External Member;**	Principal Government Engineering College, Valsad	
8	Dr. Bhavik Suthar	**External Member;**	Associate Professor Government Engineering College, Modasa	
9	Dr Santosh Vora	**External Member;**	Professor Department of Electrical Engineering Nirma University, Ahmedabad	
10	Dr Vijay Shah	**External Member;**	R&D Specialist, BU-PPMV, Vadodara	
11	Mr. Kirat Pandya	**External Member;**	AGM, Schneider Electricals Ltd, Vadodara	
12	Mr. Sanjay Mahagaokar	**External Member;**	Dy General Manager Engineering and Technology Rotomag Power Drives Ltd	

Minutes –14th Board of Studies Meeting
M&V Patel Department of Electrical Engineering
Faculty of Technology & Engineering, CHARUSAT

Date : August 26, 2017, Saturday
Time : 10:00am onwards
Venue: Room No: 102, HOD (EE), CSPIT, CHARUSAT Campus

The 14thmeeting of Board of Studies, M&V Patel Department of Electrical Engineering, Faculty of Technology and Engineering (FTE), Charotar University of Science and Technology (CHARUSAT) was held on 26/8/2017 at 10:00 a.m. at M&V Patel Department of Electrical Engineering, CSPIT, CHARUSAT Campus. Following members were present:

1	Dr. Praghnesh Bhatt	**Chairman;**	Professor & Head, Department of Electrical Engineering,	
2	Dr. KartikPandya	**Member;**	Professor, Department of Electrical Engineering,	
3	Dr. Bhinal Mehta	**Member;**	Assistant Professor Department of Electrical Engineering,	
4	Mr. Nilay Patel	**Member;**	Assistant Professor Department of Electrical Engineering,	
5	Mr. Maulik Shah	**Member;**	Assistant Professor Department of Electrical Engineering,	
6	Mr. Mhir Bhatt	**Member;**	Assistant Professor Department of Electrical Engineering,	
7	Mr. Jivanadhar Joshi	**Member;**	Assistant Professor, Department of Electrical Engineering,	
8	Mr. Pratik Mochi	**Member;**	Assistant Professor, Department of Electrical Engineering,	
9	Dr. Sanjay R. Joshi	**External Member;**	Principal Government Engineering College, Valsad	
10	Dr. BhavikSuthar	**External Member;**	Associate Professor Government Engineering College, Modasa	
11	Dr. Santosh Vora	**External Member;**	Professor, Department of Electrical Engineering Nirma University, Ahmedabad	
12	Dr. Vijay Shah	**External Member;**	R&D Specialist, BU-PPMV, Vadodara	
13	Mr. Kirat Pandya	**External Member;**	AGM, Schneider Electricals Ltd, Vadodara	

14	Mr. Sanjay Mahagaokar	**External Member;**	Dy General Manager Engineering and Technology, Rotomag Power Drives.	

Initiation:

Dr. Kartik Pandya welcomed all the members of Board of Studies.

Agenda Proceedings & Resolutions:-

Item 14.01:	To review the T & E scheme for entire B TECH and MTECH programs under CBCS. Suggestions are invited to change T & E scheme of 3rd -8th semester of BTECH
	Proceedings 14.01: The teaching and examination scheme of B. Tech and M. Tech. programs under Choice Based Credit System (CBCS) for 3rd to 8th Semester effective from ACY 2017-2018 had been discussed in details. **Suggestions Received:** ▪ The proposed structure of CBCS has been discussed in detail along with core and different elective courses. ▪ The courses are appropriately distributed among the major areas of electrical engineering such as power system, electrical machines, power electronics, microprocessors & microcontrollers along with required supplementary courses. ▪ More program electives should be incorporated in the third year and final year of B. Tech. program. ▪ The students must know the fundamental of the subjects and they must have knowledge about the various electrical products available in the market along with its specifications and prices. ▪ The students should have the opportunities to develop hardware-based projects to learn the theoretical concepts more effectively. The preparation of the complete project report enhances their writing, presentation and communication skills. ▪ Power generation by renewable energy sources and its modeling concepts needs to be imparted, as they are the present day demand. ▪ The operating paradigm of the distribution system has changed drastically and its concepts can be covered by offering the courses on smart grid, micro grid and distributed generation. ▪ Early exposure to practical/industrial training makes the students familiar with industrial developments and practices. The projects/training ▪ The curriculum structure of other universities such as GTU, Nirma, Amity, IITs, NIT, NUS, and University of Illinois are also referred and discussed. The goal of designing curriculum structure is to prepare the students for GATE, other competitive exams and for further studies.

	▪ The university core and elective courses are also reviewed and they are found suitable to inculcate values & ethics, to enhance critical thinking & logic, to improve communication skills and to increase basic analytical ability among the students. New subjects of Humanities are incorporated in second year level from AY 2017-18 as the courses were discussed in respective BoS. The courses are listed as under. HS131A Philosophy HS122A Values and Ethics HS133A Creativity, Problem Solving and Innovation HS127.01 Communication Skills II HS123.01 Critical Thinking and Logic **Resolution 14.01:** ▪ Based on the extensive discussion and suggestion received from the BoS members, the teaching and examination scheme of B. Tech Program under CBCS is finalized and attached in **Annexure 14.I.**
Item 14.02:	To prepare and review the detailed syllabus of 3rd year B.TECH program under CBCS.
	Proceedings 14.02: The detailed syllabus of the courses for B Tech – 3rdYear (5thand 6thSemesters) is reviewed. **Suggestions Received:** **EE341: Electrical Power Transmission and Distribution** 1 Role of vector group for design purpose should be included. 2 Before design of transmission line, transmission line geometry and type of field should be included. 3 Visit to sub-station should be reflected in syllabus. 4 Most of experiments are study experiments. 5 Study of cable should be included. 6 Restrict the transmission line parameters to lower values. **EE342: Synchronous and DC Machines** 1 Four hour of lab session is good decision. 2 Applications of machines should be included by case study. 3 DC machine should be covered first and then Synchronous machine later in the syllabus. 4 Chapter numbers should be changed accordingly. 5 Subject is too long. 6 Machine winding portion should be excluded from theory and should be included in lab. 7 Number of lab experiments can be increased up to 20.

	8	A small topic of machine materials and permanent magnet can be included.
	9	Universal motor should be included in this course.
	10	For visualization, a print or drawing sheet can be prepared for machine winding.
	11	Machine re-winder can be demonstrated in lab.
	12	Visit can be arranged for students to see winding process of machine.
		Transform theory should be included in this course so it can help in Drives.

EE343:Power Electronics & Drives I

1	Define subtopics of MOSFET and IGBTs.
2	Addition of datasheets of All devices.
3	Experiments should be hands on like Choppers, Controlled rectifier.
4	Addition of experiments based on driver circuits and SCR firing circuits.
5	Real time Application should be included.
6	AC-DC converter is for 10 hours which is very less.
7	Mention components in detail in syllabus. Define attributes.
8	comparative analysis of various component should be included.

EE344: Minor Project I

1	Students will be given minor project.
2	The level of project should be primary knowledge level.

EE345: Electrical Product Survey

1	Specification, market survey, identification of different products like wire, cable, switchgear can be done.
2	Electronic component and IC data sheets can be studied by students.
3	Student groups should be formed to understand above concepts and evaluated based on presentation.

EE350: Summer Internship I

1	This course can be added in 5^{th} semester.
2	Summer break between 4^{th} and 5^{th} semester can be effectively utilized by students.

EE371: Advanced Microcontroller (Programme Elective I)

1	Embedded C Language Programming for Microcontroller and keil will be taught.
2	PCA and its application and communication protocol can be added in syllabus.

EE372: VLSI Technology and Design (Programme Elective I)

1	Introduction and fabrication of MOSFET must be covered.

2 MOS combination and sequential circuits can be added in this course.

EE346:Digital Signal Processing

1 There should be a separate compulsory subject for learning science of ' Signals & System's'
2 Its not better idea to cover the above as a part of a chapter in course of Digital Signal Processing.
3 The Last chapter may be removed with more emphasis on first chapter.

EE347:Programmable Logic Controllers and Industrial Automation

1 Syllabus should have Fulfillment/justification of course title.
2 It can be an Elective Course.
3 Ladder diagram portion can be reduced in terms of time.
4 Include SMI, graphical Language.

EE348:Power Electronics & Drives II

1 Syllabus is very compressive.
2 Adding of Advanced Power Electronics in Elective courses. So multilevel inverters and other advanced topics can be include in this course.

EE349: Fault Analysis and Switchgear

1 Symmetrical component should be given less hour.
2 Time can be increased for Types of CB.
3 More reference books can be added.

EE360: Minor Project II

1 Students will be given minor project.
2 The level of project should be moderate knowledge level.
3 Arduino based/ microcontroller based project will enhance the skill of students.

EE376: Special Electrical Machines and Applications (Programme Elective II)

1 Basics of magnetic theory and need of magnets should be included.
2 More text book to be included for Induction Generator.
3 More time should be given to permanent magnet materials and PM motors.
4 Schrage motor portion can be given less time.
5 Servo motor should be given more time regarding their characteristic, response time etc.
6 For special machine, a book entitled "Special Electrical Machine" by D. G. Miller can be included.
7 Stepper motor, servo-motor, PM motor should be in lab experiment.
8 Switched reluctance motor should be included as a topic in details.

	9 BLDC motor connected with solar power should be included. 10 Use of special machine with renewable energy can be included. **EE377: Embedded System (Programme Elective II)** 1 The syllabus is well organized and almost covering everything required in simpler manner. **Resolution 14.02:** ▪ The suggestions received from BoS members are incorporated and detailed syllabi for B Tech – 3rdYear (5thand 6thSemesters) effective from 2018-2019 is approved and is attached in **Annexure – 14.I.**
Item 14.03	To review the detailed syllabus of 1st year M.TECH program under CBCS for any necessary changes.
	Proceedings 14.03: The teaching and examination scheme of M. Tech program under Choice Based Credit System (CBCS) effective from ACY: 2016-2017 is reviewed. T & E scheme and courses of M. Tech. (PE) are discussed. This program may start from AY 2018-19. **Suggestions Received:** **EE751: Power Electronics Devices and Circuits** 1 Basics of all semiconductors must be included 2 Time can be increased for Design of magnetics circuits. 3 Resonant convertors should cover all convertors. 4. Driver circuits should be cover more topics. **EE766: Power Quality** 1 Harmonics should be given more weightage. 2 Power frequency and hogh frequency phenomena should be included 3 Importance of power quality issue should be introduced. **EE767: Digital Control Systems** 1 Time response and frequency response topic will be given more importance 2 State-space analysis should be given more weightage. 3 Controller design. **EE756: Control of Electric Drives**

	1 Syllabus designed is fine **EE757: Advanced Power Electronic Convertors** 1 Syllabus designed is fine 2 More books can be suggested **EE768: Power Electronics for Renewable Energy Sources** 1 Power convertors for Solar and PV should be discussed in depth. 2 Reference theory concept must be included. **EE769: Control of Special Electrical Machines** 1 Syllabus designed is fine 2. More time can be spend for basic topics. ▪ New subjects of Humanities are incorporated from AY 2017-18 as the courses were discussed and approved in respective BoS. ▪ HS704A Academic Speaking ▪ HS705A Academic Writing **Resolution 14.03:** The suggestions received from BoS members are incorporated and the teaching and examination scheme of M. Tech (Electrical Power System) program under Choice Based Credit System (CBCS) effective from ACY: 2016-2017 is approved and attached in **Annexure – 14.II.** The teaching and examination scheme of M. Tech (Power Electronics) program under Choice Based Credit System (CBCS) effective from ACY: 2016-2017 is approved and attached in **Annexure – 14.III.**
Item 14.04	Discussion on effective implementation of Outcome Based Education (OBE) and ICT based Teaching-Learning
	Suggestions Received: ▪ All faculty members must aware about each criteria defined by NBA. ▪ The proper understanding of mapping of POs, PEOs, Cos and their assessment tools is required. ▪ Faculty contribution should be increased for publication, funded projects and consultancy. ▪ The usage of open course ware from NPTEL, MIT and BISAC must be increased.
Item	Introducing the new PG program in Electrical Engineering

14.05	**Suggestions Received:** Following PG programs in Electrical Engineering are proposed. (1) Power Electronics and Drives (2) Renewable Energy (3) Automation and Control
Item 14.06	Discussion regarding recent approval from NBA and scope for the improvement
	All invited BoS members congratulated the University, Institute and Department for getting "A" graded from NAAC and KCG as well as for getting NBA for three departments
Item 14.07	Approval of Examiners' Panel
	The examiners panels for B. Tech and M. Tech have been reviewed and approved. The approved examiner panel is attached in **Annexure 14.VII.**

Additional Items

Sr. No	Agenda	Discussion/Suggestions
1	Review of Exam Question Papers	Question papers of internal and university examination have been reviewed. The briefings about the continuous evaluation, freedom for pedagogy selection for faculty and execution of the practical sessions have been given to external BoS members. The quality of question papers are found satisfactory, but it is suggested to increase the weighatge on the questions that can increase the analytical and logical thinking ability of students.
2	Review of Result Analysis	The records of result analysis of both internal and university exam are maintained. The results of both the exams are generally discussed and analyzed in the department meeting as soon as the exam gets over and the necessary actions are decided. The YoYcomparisons of the results are also discussed and the figures are acceptable. The efforts should be given to again improve the results at all levels. The conduction of the remedial coaching for weaker students has been appreciated by the members.
3	Review of Placement Records	The campus placement of the student needs to be increased. More efforts are required to invite the companies for placement. The aptitude sessions organized for the students are appreciated. It is advised to keep extra technical session to prepare the students for technical skills.
4	Review of B. Tech and M. Tech Projects works	The project titles for B. Tech and M. Tech are reviewed and found satisfactory. It is suggested to give more emphasis on hardware based projects at B. Tech level. For M. Tech, the extensive use of licenses software may help the students to solve/reproduce the IEEE journal papers. Paper presentation for M. Tech students should be made compulsory.
5	Review of	Review pattern for the students feedback and actions after the feedback have been

	Feedback from Students, Identification of slow learners, Counseling activities	explained. It is an useful component to improve the performance of teacher and T-L practices. The student counseling activities are very appreciated by all the members.

Dr. Praghnesh Bhatt
Chairman
Board of Studies (EE)

HEAD OF DEPARTMENT
Dept. of Electrical Engg.
Chandubhai S. Patel Institute of Technology
At. & Po. Changa-388421., Ta. Petlad,
Dist. : Anand. (Gujarat)

Annexure 14.I: TEACHING & EXAMINATION SCHEME FOR B TECH PROGRAMME IN ELECTRICAL ENGINEERING (CBCS) Entry Year: 2016

CHAROTAR UNIVERSITY OF SCIENCE & TECHNOLOGY (CHARUSAT)											
TEACHING & EXAMINATION SCHEME FOR B TECH PROGRAMME IN ELECTRICAL ENGINEERING (CBCS) Entry Year: 2016											
Level	**Course Code**	**Course Title**	**Teaching Scheme**				**Examination Scheme**				
			Contact Hours			**Credit**	**Theory**		**Practical**		**Total**
			Theory	**Practical/Tutorial**	**Total**		**Internal**	**External**	**Internal**	**External**	
Level 1	HS101A-HS106A	A Course on Liberal Arts	2		2	2			50	50	**100**
	MA141	Engineering Mathematics I	4	1	5	4	30	70	0	0	**100**
	ME141	Engineering Graphics	2	4	6	4	30	70	50	50	**200**
	PY141	Engineering Physics	3	2	5	4	30	70	25	25	**150**
	CL141	Engineering Mechanics	4	2	6	5	30	70	25	25	**150**
	ME142	Workshop Practices	0	2	2	1			25	25	**50**
		Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra-curricular & co curricular			10						
			15	**11**	**36**	**20**	**120**	**280**	**175**	**175**	**750**
	HS 121A	English Language & Literature	2		2	2	25	25	25	25	**100**
	MA142	Engineering Mathematics II	4	1	5	4	30	70			**100**
	CL142	Environmental Science	2	0	2	2	30	70			**100**
	IT141	Fundamentals of Computer Programming	3	2	5	4	30	70	25	25	**150**
	ME143	Basics of Civil & Mechanical Engineering	4	2	6	5	30	70	25	25	**150**
	EE141	Basics of Electronics & Electrical Engineering	4	2	6	5	30	70	25	25	**150**
		Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra-curricular &co curricular			10						
			19	**7**	**36**	**22**	**175**	**375**	**100**	**100**	**750**

	HS122A/HS131A	Values and Ethics/Philosophy	2		2	2	30	70			**100**
	MA241	Engineering Mathematics III	4	0	4	4	30	70			**100**
	EE241	Analog and Digital Electronics	4	2	6	5	30	70	25	25	**150**
	EE242	Circuit Theory	4	2	6	5	30	70	25	25	**150**
	EE243	Electrical Measurements and Industrial Instrumentation	4	2	6	5	30	70	25	25	**150**
	XXXXX	University Elective- I	2	0	2	2	30	70			**100**
		Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra-curricular & co curricular			10						
			20	**6**	**36**	**23**	**180**	**420**	**75**	**75**	**750**
Level 2	HS123.01A/ HS127.01A/ HS133A	Critical Thinking and Logic/ Communication skill 2/ Creativity, Problem Solving and Innovation	2		2	2	50	50			**100**
	EE244	Electrical Power Generation and its Economics	4	0	4	4	30	70			**100**
	EE245	Control Systems	4	2	6	5	30	70	25	25	**150**
	EE246	Microprocessor & Microcontrollers	4	2	6	5	30	70	25	25	**150**
	EE247	Transformers and Induction Machines	4	4	8	6	30	70	50	50	**200**
	XXXXX	University Elective- II	2	0	2	2	30	70			**100**
		Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra-curricular & co curricular			7						
			20	**8**	**35**	**24**	**200**	**400**	**100**	**100**	**800**

	HS124.01A	Professional Communication	2		2	2			30	70	**100**
	EE341	Electrical Power Transmission and Distribution	4		4	4	30	70			**100**
	EE342	Synchronous and DC Machines	4	4	8	6	30	70	50	50	**200**
	EE343	Power Electronics & Drives I	4	2	6	5	30	70	25	25	**150**
	EE344	Minor Project I	0	4	4	2			50	50	**100**
	EE345	Electrical Product Survey				2			50	50	**100**
	EE350	Summer Internship I		3	3	3			75	75	**150**
	EE371-EE372	Programme Elective I	4	2	6	5	30	70	25	25	**150**
	Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra curricular & co curricular				3						
			17	**14**	**36**	**29**	**120**	**280**	**255**	**295**	**1050**
Level 3	HSA134A	**Contributor Personality Development**	2		2	2			30	70	**100**
	EE346	Digital Signal Processing	3	2	5	4	30	70	25	25	**150**
	EE347	Programmable Logic Controllers and Industrial Automation	2	4	6	4	30	70	50	50	**200**
	EE348	Power Electronics & Drives II	3	2	5	4	30	70	25	25	**150**
	EE349	Fault Analysis and Switchgear	4	2	6	5	30	70	25	25	**150**
	EE360	Minor Project II	0	4	4	2	0	0	50	50	**100**
	EE376-EE377	Programme Elective II	3	2	5	4	30	70	25	25	**150**
	Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra curricular & co curricular				4						
			18	**14**	**36**	**25**	**175**	**375**	**200**	**200**	**950**

Level 4	EE441	Power System Operations and Control	4	2	6	5	30	70	25	25	**150**
	EE442	Power System Protection	4	2	6	5	30	70	25	25	**150**
	EE443	Electrical Machine Design	4	4	8	6	30	70	25	25	**150**
	EE444	Simulation Lab	0	2	2	1			50	50	**100**
	EE450	Summer Internship II				3			75	75	**100**
	EE471-EE473	Programme Elective III	4	2	6	5	30	70	25	25	**150**
		Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra curricular & co curricular			2						
			16	**12**	**30**	**25**	**120**	**280**	**200**	**200**	**800**
	EE446	Commissioning and Testing of Electrical Equipment	4	2	6	5	30	70	25	25	**150**
	EE447	Modeling and Control of Renewable Energy Sources	4	2	6	5	30	70	25	25	**150**
	EE448	Major Project				9			250	250	**500**
	EE476-EE478	Programme Elective IV	4	2	6	5	30	70	25	25	**150**
			12	**6**	**18**	**24**	**90**	**210**	**325**	**325**	**950**

CHAROTAR UNIVERSITY OF SCIENCE & TECHNOLOGY (CHARUSAT)											
		Hours				Credits	Marks				
			Theory	Practical	Total						
			137	78	264	192	1180	2620	1430	1470	6700

LIST OF ELECTIVES FOR B TECH PROGRAMME IN ELECTRICAL ENGINEERING

Electives for Level 2

	UNIVERSITY ELECTIVE 1	UNIVERSITY ELECTIVE 2	
EE281	Electrical Engineering Materials	EE282	Electrical Power Utilization and Traction

Electives for Level 3

	PROGRAMME ELECTIVE 1	PROGRAMME ELECTIVE 2	
EE371	Advanced Microcontrollers	**EE376**	Special Electrical Machines and Applications
EE372	VLSI Technology and Design	**EE377**	Embedded Systems

Electives for Level 4

	PROGRAMME ELECTIVE 3	PROGRAMME ELECTIVE 4	
EE471	Power Electronics Applications in Power System	**EE476**	Advances in power system
EE472	Communication Engineering	**EE477**	Internet of Things
EE473	High Voltage Engineering	**EE478**	Energy Conservation and Management

University Elective I & II:

(Will be available in a Common Slot)

Occupational Health and Safety, IPR, Regulatory Affairs, Contract Management,

Energy Management, Research Methodology, Entrepreneurship, Project Management, First AID and Life Support

Risk Management, Disaster Management, Scientific Instrumentation & Measurement, Operation Research,
Business Environment, Quality Assurance, Computer Programming, Numerical Analysis, Web Designing, Cyber Security etc

Annexure:14. II TEACHING AND EXAMINATION SCHEME FOR M Tech in Electrical Engineering (Electrical Power Systems)
Entry year 2017

Sem	Course Code	Course Title	Teaching Scheme				Examination Scheme				
			Theory	Practical/Tutorial	Total	Credit	Theory		Practical		Total
							Internal	External	Internal	External	
Sem 1	EE741	Modeling & Simulation of Electrical Machines (PC - 1)	4	2	6	5	30	70	25	25	150
	EE742	Modern Power System Operations (PC - 2)	3	2	5	4	30	70	25	25	150
	EE743	Advanced Power Electronics in Power Systems (PC - 3)	3	2	5	4	30	70	25	25	150
	EE7XX	Programme Elective-1 (PE - 1)	3	2	5	4	30	70	25	25	150
	EE7XX	Programme Cluster Elective - 1 (CT - 1)	3	2	5	4	30	70	25	25	150
	XXXX	University Elective 1 (UE - 1)	2	0	2	2	30	70	0	0	100
	HSXXX	HSS Elective -I	2		2	2	30	70	0	0	100
			20	10	30	25	210	490	125	125	950

Sem	Course Code	Course Title	Teaching Scheme				Examination Scheme				
			Theory	Practical/Tutorial	Total	Credit	Theory		Practical		Total
Sem 2	EE744	Advanced Power System Dynamics & Stability (PC - 4)	4	2	6	5	30	70	25	25	150
	EE745	FACTS & HVDC Transmission (PC - 5)	3	2	5	4	30	70	25	25	150
	EE746	Advanced Power System Protection (PC - 6)	3	2	5	4	30	70	25	25	150
	EE7XX	Programme Elective - 2 (PE - 2)	3	2	5	4	30	70	25	25	150
	EE7XX	Programme Cluster Elective - 2 (CT - 2)	3	2	5	4	30	70	25	25	150
	HS705A	Academic Writing	0	2	2	2	0	0	30	70	100
	XXXX	University Elective 2 (UE - 2)	2	0	2	2	30	70	0	0	100
			18	12	30	25	180	420	155	195	950

Semester	Course Code	Course Title	Credit	Examination Scheme					
				Internal		External			Total
				Progress Report	Progress Seminar	Report	Seminar	Viva	
Sem 3	EE811	Project Preliminaries/Summer Industrial Training	4	50	50	0	50	50	200
	EE812	Project Phase 1	18	100	100	100	100	100	500
			22	**150**	**150**	**100**	**150**	**150**	**700**
Sem 4	EE813	Project Phase 2	30	200	200	200	200	200	1000
			30	**200**	**200**	**200**	**200**	**200**	**1000**
		Grand Total	**102**						**3600**

Programme Electives of Semester 1 and 2					
Programme Electives 1 (PE 1) for Semester 1			**Programme Electives 2 (PE 2) for Semester 2**		
EE761	Control System Engineering		EE763	Modeling and Simulation of Renewable Energy Sources	
EE762	Engineering Optimization Techniques		EE764	Distributed Generation and Smart Grid	

Cluster Electives of Semester 1 and 2					
Cluster Electives 1 (CT 1) for Semester 1			**Cluster Electives 2 (CT 2) for Semester 2**		
EE771	Digital Signal Processing & its Application		EE772	Restructuring & Deregulation of Power Systems	
IT767	Micro device Programming		IT768	Applied Cryptography	
EC767	Embedded System Design		EC768	Digital Image & Speech Processing	
CE767	Operating System Design & Concepts		CE768	Software Project Management & Quality Assurance	

University Electives of Semester 1 and 2			
University Electives (UE 1) for Semester 1		**University Electives (UE 2) for Semester 2**	
MA771	Reliability and Risk Analysis	EE782	Energy Audit and Management
EE781	Optimization Techniques	CE771	Project Management
ME781	Occupational Health and Safety	IT771	Cyber Security and Laws
CE772	Research Methodology	CA 842	Mobile Application Development
CA730	Internet & Web Designing	PT796	Fitness & Nutrition
PT795	Health & Physical Activity	NR 752	Epidemiology and Community Health
NR 751	Women's Health	OC733	Introduction to Polymer Science
RD701	Introduction to Analytical Techniques	MB651	Software based Statistical Analysis
RD702	Introduction to Nanoscience& Technology	PH826	Intellectual Property Rights
MB650	Creative Leadership	MA772	Design of Experiments
PH825	Community Pharmacy Ownership		

HSS Elective for Semester 1	
HS701 A	Advance Critical Thinking and Logic
HS703.01 A	Languages (French/ German)
HS704 A	Academic Speaking

Annexure:14 III TEACHING AND EXAMINATION SCHEME FOR M Tech in Electrical Engineering (Power Electronics)
Entry year July 2018

CHAROTAR UNIVERSITY OF SCIENCE AND TECHNOLOGY

CHOICE BASED CREDIT SYSTEM SCHEME (July 2018)

Semester	Course Code	Course Title	Teaching Scheme				Examination Scheme				
							Theory		Practical		
			Theory	Practical/ Tutorial	Total	Credit	Internal	External	Internal	External	Total
Sem 1	EE741	Modeling & Simulation of Electrical Machines (PC - 1)	4	2	6	5	30	70	25	25	150
	EE743	Advanced Power Electronics in Power Systems (PC-2)	3	2	5	4	30	70	25	25	150
	EE751	Power Electronics Devices and Circuits (PC - 3)	3	2	5	4	30	70	25	25	150
	EE7XX	Programme Elective-1 (PE - 1)	3	2	5	4	30	70	25	25	150
	EE7XX	Cluster Elective - 1 (CT - 1)	3	2	5	4	30	70	25	25	150
	HSXXX	HSS Elective -I	2	0	2	2	30	70	0	0	100
	XXXXX	University Elective 1 (UE - 1)	0	2	2	2	30	70	0	0	100
					30	**25**					**950**
Sem 2	EE745	FACTS & HVDC Transmission (PC-4)	3	2	5	4	30	70	25	25	150
	EE756	Control of Electric Drives (PC - 5)	3	2	5	4	30	70	25	25	150
	EE757	Advanced Power Electronics Converters (PC-6)	4	2	6	5	30	70	25	25	150
	EE7XX	Programme Elective - 2 (PE - 2)	3	2	5	4	30	70	25	25	150
	EE7XX	Cluster Elective - 2 (CT - 2)	3	2	5	4	30	70	25	25	150
	HS705A	Academic Writing	0	2	2	2			30	70	100

	XXXXX	University Elective 2 (UE - 2)	2	0	2	2	30	70	0	0	100
					30	**25**					**950**

Programme Electives of Semester 1 and 2				
Programme Electives 1 (PE 1) for Semester 1			**Programme Electives 2 (PE 2) for Semester 2**	
EE766	Power Quality		EE768	Power Electronics for Renewable Energy Sources
EE767	Digital Control Systems		EE769	Control of Special Electrical Machines

Cluster Electives of Semester 1 and 2				
Cluster Electives 1 (CT 1) for Semester 1			**Cluster Electives 2 (CT 2) for Semester 2**	
EE771	Digital Signal Processing & its Application		EE772	Restructuring & Deregulation of Power Systems
IT767	Micro device Programming		IT768	Applied Cryptography
EC767	Embedded System Design		EC768	Digital Image & Speech Processing
CE767	Operating System Design & Concepts		CE768	Software Project Management & Quality Assurance

University Electives of Semester 1 and 2				
University Electives (UE 1) for Semester 1			**University Electives (UE 2) for Semester 2**	
MA771.01	Reliability and Risk Analysis		EE782.01	Energy Audit and Management
EE781.01	Optimization Techniques		CE771.01	Project Management
ME781.01	Occupational Health and Safety		IT771.01	Cyber Security and Laws
CE772.01	Research Methodology		CA 842	Mobile Application Development
CA730	Internet & Web Designing		PT796.01	Fitness & Nutrition
PT795.01	Health & Physical Activity		NR 752.01	Epidemiology and Community Health
NR 755	First Aid and Life Support		OC733.01	Introduction to Polymer Science

RD701.01	Introduction to Analytical Techniques
RD702.01	Introduction to Nanoscience& Technology
MB650	Creative Leadership
PH891	Community Pharmacy Ownership

MB651	Software based Statistical Analysis
PH892	Intellectual Property Rights
MA772.01	Design of Experiments

HSS Elective for Semester 1	
HS701 A	Advance Critical Thinking and Logic
HS703.01 A	Languages (French/ German)
HS704 A	Academic Speaking

Semester	**Course Code**	**Course Title**	**Credit**	**Examination Scheme**					
				Internal		**External**			**Total**
				Progress Report	Progress Seminar	Report	Seminar	Viva	
Sem 3	EE811	Project Preliminaries	4	50	50	0	50	50	200
	EE812	Project Phase 1	18	100	100	100	100	100	500
			22	**150**	**150**	**100**	**150**	**150**	**700**
Sem 4	EE813	Project Phase 2	30	200	200	200	200	200	1000
			30	**200**	**200**	**200**	**200**	**200**	**1000**
		Grand Total	**102**						**3600**

Annexure 14.VII Examiner Panel List for B. Tech and M. Tech Examination

Examiner Panel for Electrical Engineering (External Examiners)

Sr.No.	Examiner Name	Institute	Contact No	Email id
1	Dr. B.R.Parekh	BVM Engg. College	9879256663	brp_bvm@yahoo.co.in
2	Dr. S.R.Joshi.	S.R Gandhi Engg. College,Surat.	9429265099	sanjayjoshi@gmail.com
3	Dr. Naran M Pindoriya	IIT Gandhinagar	8511673572	naran@iitgn.ac.in
4	Dr. S K Joshi	MSU	9427055862	skjoshi_59@yahoo.com
5	Dr. Vivek J Pandya	PDPU	9824225220	vivek.pandya@sot.pdpu.ac.in
6	Prof. N.G. Mishra	BVM Engg. College	9998284763	nidhish57@yahoo.co.in
7	Dr. B.R.Bhalja	IIT Roorkee	9639471375	bhaveshbhalja@gmail.com
8	Dr. C.D. Kotwal	SVIT Vasad	9909006055	chetan.kotwal@gmail.com
9	Kuman R Shidhapura	DarshanEng College	9427229262	kuman_vvp@yahoo.com
10	Nirav D karelia	OmsantiEng college	9924300789	nirav_karelia@yahoo.com
11	Alpesh S Adeshara	VVP	982585800	alpeshsays@yahoo.com
12	Chirag K Vibhakar	VVP	9173698555	chiragkvi@yahoo.co.in
13	Chirag N Jasani	OM SantiEng college	9898632410	chiragjasani@yahoo.com
14	Vineeta S. Chauhan	Indus University	9638251076	vineetachauhan.ee@iite.edu.in
15	KetanKadivar	Govt. Polytechnic, Morvi	9979445080	ketankadivar@gmail.com
16	C.V.Sheth	GCET	9879776483	dhruvraj1234@gmail.com
17	Ujjavalpatel	ADIT	9879879746	ujjaval58@rediffmail.com
18	BhaveshHindocha	GCET	9898852530	bhaveshhindocha@gcet.ac.in
19	JaydipBaria	B.V.M. Engg. College	9426839988	jcbaria@bvmengineering.ac.in
20	A. R. Patel	B.V.M. Engg. College	9879296030	ashish.patel@bvmengineering.ac.in
21	A.D. Joshi	L.D. Engg. College	9825288607	joshiashish22@yahoo.co.in
22	D.P. Maheshwari	L.D. Engg. College	9825797155	d_pmaheshwari@yahoo.co.in
23	Hitesh K. Mehta	S.C.E.T., Surat	9825726206	hitesh.mehta@scet.ac.in
24	S B Patel	G H Patel College of Engg.	9879298992	patelsb_14@yahoo.co.in, sameerpatel@gcet.ac.in
25	Ritesh Patel	GCET	9429664064	r2patel@yahoo.com
26	Rakesh Patel	GCET	9375850177	rakeshmpatel@gcet.ac.in

27	Ishaq A Sheikh	G H Patel College of Engg.	9427078457	ishaqshiekh@gcet.ac.in
28	Anil Navle	Vidyabharti Trust, Inst. Of Tech. & Research, Bardoli	9998973508	anil.navle@gmail.com
29	Dipesh M Patel	Babaria Inst. Of Tech.	9925369767	dipesh_ee@yahoo.co.in
30	Hiren Patel	Indus Inst. Of Tech.	9662020667	hirenpatel.ee@iite.edu.in
31	Dharita Patel	BVM Engg. College	9925365442	dharita@gmail.com
32	MeghaTrivedi	SVIT	9428479867	mghtrivedi@yahoo.com
33	Anant H. Parmar	LDRP	9998216254	akki.vs@gmail.com
34	Gaurang Sharma	BVM Engg. College	9824918977	gksharma@bvmengineering.ac.in
35	BinduKansara	ADIT	9228875539	bindu_kansara@yahoo.co.in
36	NimishZaveri	CK Pithawala	9925024133	zaverinaimish@yahoo.com
37	JenishMacwan	Nirma	9408479830	jenish.macwan@nirmauni.ac.in
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M&V Patel Department of Electrical Engineering
Faculty of Technology & Engineering, CHARUSAT
14th Board of Studies Meeting

Date : August 26, 2017, Saturday
Time : 10:00am onwards
Venue: Room No: 102, HOD (EE), CSPIT, CHARUSAT Campus

1	Dr. Praghnesh Bhatt	**Chairman;**	Professor & Head, Department of Electrical Engineering,	
2	Dr. KartikPandya	**Member;**	Professor, Department of Electrical Engineering,	
3	Dr. Bhinal Mehta	**Member;**	Assistant Professor Department of Electrical Engineering,	
4	Mr. Nilay Patel	**Member;**	Assistant Professor Department of Electrical Engineering,	
5	Mr. Maulik Shah	**Member;**	Assistant Professor Department of Electrical Engineering,	
6	Mr. Mhir Bhatt	**Member;**	Assistant Professor Department of Electrical Engineering,	
7	Mr. Jivanadhar Joshi	**Member;**	Assistant Professor, Department of Electrical Engineering,	
8	Mr. Pratik Mochi	**Member;**	Assistant Professor, Department of Electrical Engineering,	
9	Dr. Sanjay R. Joshi	**External Member;**	Principal Government Engineering College, Valsad	
10	Dr. BhavikSuthar	**External Member;**	Associate Professor Government Engineering College, Modasa	
11	Dr. Santosh Vora	**External Member;**	Professor, Department of Electrical Engineering Nirma University, Ahmedabad	
12	Dr. Vijay Shah	**External Member;**	R&D Specialist, BU-PPMV, Vadodara	
13	Mr. Kirat Pandya	**External Member;**	AGM, Schneider Electricals Ltd, Vadodara	
14	Mr. Sanjay Mahagaokar	**External Member;**	Dy General Manager Engineering and Technology, Rotomag Power Drives.	

Minutes –14-Ath Board of Studies Meeting
M&V Patel Department of Electrical Engineering
Faculty of Technology & Engineering, CHARUSAT

Date : July 28, 2018, Saturday
Time : 10:00 am onwards
Venue: Room No: 102, HOD (EE), CSPIT, CHARUSAT Campus

The 14th meeting of Board of Studies, M&V Patel Department of Electrical Engineering, Faculty of Technology and Engineering (FTE), Charotar University of Science and Technology (CHARUSAT) was held on 28/7/2018 at 10:00 am. at M&V Patel Department of Electrical Engineering, CSPIT, CHARUSAT Campus. Following members were present:

1	Mr. Nilay Patel	**Chairman;**	Assistant Professor & Head, Department of Electrical Engineering,	
2	Dr. Kartik Pandya	**Member;**	Professor, Department of Electrical Engineering,	
3	Mr. Maulik Shah	**Member;**	Assistant Professor Department of Electrical Engineering,	
4	Mr. Mhir Bhatt	**Member;**	Assistant Professor Department of Electrical Engineering,	
5	Mr. Jivanadhar Joshi	**Member;**	Assistant Professor, Department of Electrical Engineering,	
6	Mr. Pratik Mochi	**Member;**	Assistant Professor, Department of Electrical Engineering,	
7	Mr. Jigar S Sarda	**Member;**	Assistant Professor, Department of Electrical Engineering,	
8	Dr. Bhavik Suthar	**External Member;**	Professor, Government Engineering College, Bhuj	
9	Dr. Sanjay R. Joshi	**External Member;**	Principal Government Engineering College, Valsad	
10	Prof. P. K. Shah	**External Member;**	Professor LDRP, Modasa	
11	Dr. Santosh Vora	**External Member;**	Professor Department of Electrical Engineering Nirma University, Ahmedabad	

Initiation:

Mr. Nilay Patel welcomed all the members of Board of Studies.

Agenda Proceedings & Resolutions:-

Item 14.01: To prepare and review the detailed syllabus of 4th year B.TECH program under CBCS.

Proceedings 14.01:

The detailed syllabus of the courses for B Tech – 4th Year (7thand 8thSemesters) is reviewed.

Suggestions Received:

EE441: Power System Operations and Control

1	Topics on State Estimation & Load forecasting should be incorporated.
2	Syllabus is lengthy.
3	Chapter of transients should be removed or modified
4	Text books and reference books should be swapped.
5	Year of the book can be removed as it seems to be old version of book.
6	Voltage stability part can be removed.
7	Add contingency analysis method
8	Use B.R..Gupta as a text book

EE442: Power System Protection

1	Chapter 9 should be removed.
2	16 hours of transmission can be reduced.
3	Add Earthing of power system

EE443: Electrical Machine Design

1	DC machine design part can be reduced/removed.

EE444: Simulation Lab

1	Hours distribution modify
2	20 hours are more.
3	Keep basic experiments.
4	Experiments of machine are tough for students.
5	It should be "Suggested" list of experiment in syllabus booklet.
6	Fault analysis experiments can be added.
7	Linear equation solution can be added.
8	Multiple faculties should be involved in framing the experiments and conducting lab.
9	It should be kept simple for students.
10	Numerical Methods, RLC series and Parallel operation and its Transients type Practical should be included.

EE471: Power Electronics Applications in Power System (Programme Elective III)

1	Power quality can be removed. SSSC and UPFC can be removed.
2	Chapter 2 should be up to topic "converter transformer testing"
3	Problems in transmission line should be involved.

EE472: Communication Engineering (Programme Elective III)

1	Syllabus designed is fine

EE473: High Voltage Engineering (Programme Elective III)

1	Contents of chapter 07 can be reduced.
2	Remove power quality problems & standard chapter

EE446: Commissioning and Testing of Electrical Equipment

1	Syllabus is lengthy.
2	Chapter of DC machine can be removed.
3	Commissioning part should be more rather than testing.

EE447: Modeling and Control of Renewable Energy Sources

1	Name of the subject should be modified as Renewable Energy Sources and offer as elective subject
2	Content of Solar and Wind should be more.
3	Chapter 5 can be removed.
4	Course can be offered as **programme elective.**

EE448: Major Project

1 Project should be in line with innovation or today's' need.

EE450: Summer Internship II

1 On the same line of summer Internship-I, this course will follow.

EE476: Advances in Power System (Programme Elective IV)

1	Remove probabilistic power flow chapter
2	Add Restructuring in power system

EE477: Internet of Things (Programme Elective IV)

1 Syllabus designed is fine.

EE478: Energy Conservation and Management (Programme Elective IV)

	1 No Comments **Resolution 14.01:** ▪ The suggestions received from BoS members are incorporated and detailed syllabi / T & E Scheme for B Tech – 4th Year (7th and 8th Semesters) effective from 2019-2020 is approved and is attached in **Annexure – I**
Item 14.02	To review and approve T&E scheme and syllabus for FY, SY and TY of B. Tech program for ACY 2018-2019 under Choice Based Credit System (CBCS).
	Proceedings 14.02: The teaching and examination scheme of FY, SY and TY of B. Tech program for ACY 2018-2019 under Choice Based Credit System (CBCS) is reviewed. **Suggestions Received:** The second year university electives offered by electrical engineering department should be more in line with current scenario and it must be changed. **EE283: Python for Electrical Engineering (University Elective I)** 1 Basics of python programming taught here. 2 Various problems can be solved using python programming. **EE286: Computer Programming for Electrical Engineering (University Elective I)** 1 MATLAB and other software introduced here to solve simple circuit. 2 Linear equations, non-linear equations, ODE and matrices should be solved by software. **Resolution 14.02:** Above two courses introduce from AY 2018-19, remaining electives can be kept as it is. For the 2018 entry students, the first year and second year syllabus is reviewed and approved. Physics course PY141.01 is approved in respective BoS and introduced in first year. The T & E scheme is approved for third year and fourth year. It is decided that the total credit must be equal to 192. The T & E scheme for 2018 entry student is attached in **Annexure – II**
Item 14.03	To review and approve T&E scheme of M. Tech in Power Electronics for ACY 2018-2019 under CBCS
	Proceedings 14.03: The teaching and examination scheme of M. Tech in Power Electronics for ACY 2018-2019 under CBCS is reviewed.

	Suggestions Received: ▪ No Suggestion. It is already draft one year back and approved. Attached in **Annexure – III**
Item 14.04	To review T&E Scheme for existing M. Tech program under CBCS for any necessary changes
	Proceedings 14.04: The teaching and examination scheme of M. Tech in EPS for ACY 2018-2019 under CBCS is reviewed. **Suggestions Received:** ▪ No Suggestion. It is already draft one year back and approved. Attached in **Annexure –IV**
Item 14.05	**Proceedings 14.05:** Discussion on effective implementation of Outcome Based Education (OBE) and ICT based Teaching-Learning
	Suggestions Received: ▪ All faculty members must aware about each criteria defined by NBA. ▪ The proper understanding of mapping of POs, PEOs, COs and their assessment tools is required. ▪ Faculty contribution should be increased for publication, funded projects and consultancy. ▪ The usage of open course ware from NPTEL, MIT and BISAC must be increased.
Item 14.06	**Proceedings 14.06:** Introducing the new UG program in Electrical Engineering
	Suggestions Received: Not needed right now.
Item 14.07	**Proceedings 14.07:** Discussion regarding approval from NBA and scope for the improvement
	All invited BoS members congratulated the University, Institute and Department for getting "A" graded from NAAC and KCG as well as for getting NBA for three departments. **Suggestion received:** Cadre ratio and student- teacher ratio along with research in department are most affected factors.
Item 14.08 14.09	**Proceedings 14.08 and 14.09:** To approve the syllabus of M Tech (Newly Introduced Programs) **Resolution** This agenda is duplicated as per agenda number 2 & 3
Item 14.10	**Proceedings 14.10:** To incorporate the revised syllabus of Mathematics and Physics in first year **Resolution**

	The syllabus is already designed and passed in the respective BoS and added to FY syllabus.
Item 14.11	**Proceedings 14.11:** To implement summer internship in 3rd semester of B Tech (Same Credit, same Marks) **Resolution** It is not possible due to D2D students.
	Other Agendas are discussed and listed in additional Items

Additional Items

Sr. No	Agenda	Discussion/Suggestions
1	Review of Exam Question Papers	Question papers of internal and university examination have been reviewed. The briefings about the continuous evaluation, freedom for pedagogy selection for faculty and execution of the practical sessions have been given to external BoS members. The quality of question papers are found satisfactory, but it is suggested to increase the weighatge on the questions that can increase the analytical and logical thinking ability of students. The question papers are as per blooms taxonomy. **Annexure –V and VIII**
2	Review of Result Analysis	The records of result analysis of both internal and university exam are maintained. The results of both the exams are generally discussed and analyzed in the department meeting as soon as the exam gets over and the necessary actions are decided. The YoY comparisons of the results are also discussed and the figures are acceptable. The efforts should be given to again improve the results at all levels. The conduction of the remedial coaching for weaker students has been appreciated by the members. **Annexure –IX**
3	Review of Placement Records	The campus placement of the student needs to be increased. More efforts are required to invite the companies for placement. The aptitude sessions organized for the students are appreciated. It is advised to keep extra technical session to prepare the students for technical skills. **Annexure –X**
4	Review of B. Tech and M. Tech Projects works	The project titles for B. Tech and M. Tech are reviewed and found satisfactory. It is suggested to give more emphasis on hardware based projects at B. Tech level. For M. Tech, the extensive use of licenses software may help the students to solve/reproduce the IEEE journal papers. Paper presentation for M. Tech students should be made compulsory.
5	Review of Feedback from Students, Identification of slow learners, Counseling activities	Review pattern for the students feedback and actions after the feedback have been explained. It is an useful component to improve the performance of teacher and T-L practices. The student counseling activities are very appreciated by all the members.
6	Approval of Examiners'	The examiners panels for B. Tech and M. Tech have been reviewed and approved. The approved examiner panel is attached in **Annexure VII.**

	Panel	
7	Admissions	As per the experts, the Electrical branch interest is not reduced, but the interest towards CE/IT branch is increased, Hence Electrical Branch has to suffer for a complete one cycle.
8.	Audit Course	Electrical students can be offered audit course from CE/IT on IoT. Also Electrical department should offer audit course on arduino. Apart from the regular teaching, by audit course, social activities and by taking parts in sports and co/extra-curricular activities, the holistic development of student will be possible.
9.	Sports, Cultural and Social activities.	The students are encouraged to take part in national and international level sports events. With social activities the bonding and trust with society and CHARUSAT will increase. At least one week cultural programme to be organized by institute.
10.	Quality of research in dissertation and PhD.	For PhD it is essential to publish at least to research papers in scopus indexed journals, hence Quality will be there in research work.
11.	Research Papers and Research funding	Each faculty must publish at least two papers in high impact factor journal. By this the CV of the faulty become strengthen, hence chances of getting grants will increase. More efforts will be put to fetch the research grants. All the faculties are aware about funding agencies.
12.	NPTEL Course	Now as pert AICTE, NPTEL Course will be considered as FDP and according to that API point given to faculty.
13.	Innovation in Pedagogy	The educational goal must be discussed by student and teacher and according to that, A common strategies for class must be made and according to individual student's knowledge, individual strategies should be explained to each student. Learning while doing is best pedagogy.
14	Quality in Education and World Class Universities	By quality consultancy work, more practical knowledge and time-on-task learning strategy accelerates the quality education and movement towards the world class universities.
15	Outcome Based Education and Road-map 2023	The outcome of each course and program must be monitored effectively. If required outcome doesn't achieve in students, more quality efforts must be made. The main focus of road-map 2013 is, placement of eligible students must be reach up to 100%. **Annexure –VI**
16.	Innovative Projects	The BoS members appreciated the department projects. The capacity of the department must be showcased to industry people.

Faculty Board Meeting:

Faculty board meeting was held at conference room, DEPSTAR College.

The inputs given by expert of electrical field are as under.

1. Right now the interest of students are towards the computer related branch, hence the number of students in the electrical or other branch are less.

2. Day by day the students in A group of 12th standards are decreasing due to lack of interest in mathematics subject. So students must be motivated to take interest in maths subject right from school level.
3. Experts gave their opinion that, each branch has its cycle depending on market scenario. So within two years, again the interest f students towards the core branch will increase.

Mr. Nilay A. Patel
Chairman
Board of Studies (EE)

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14A

Annexure I: TEACHING & EXAMINATION SCHEME FOR B TECH PROGRAMME IN ELECTRICAL ENGINEERING (CBCS) Entry Year: 2016

CHAROTAR UNIVERSITY OF SCIENCE & TECHNOLOGY (CHARUSAT)											
TEACHING & EXAMINATION SCHEME FOR B TECH PROGRAMME IN ELECTRICAL ENGINEERING (CBCS) Entry Year: 2016											
Level	**Course Code**	**Course Title**	**Teaching Scheme**				**Examination Scheme**				
			Contact Hours			**Credit**	**Theory**		**Practical**		**Total**
			Theory	**Practical/Tutorial**	**Total**		**Internal**	**External**	**Internal**	**External**	
Level 1	HS101A- HS106A	A Course on Liberal Arts		2	2	2			50	50	**100**
	MA141	Engineering Mathematics I	4	1 (T)	4	4	30	70			**100**
	ME141	Engineering Graphics	2	4	6	4	30	70	50	50	**200**
	PY141	Engineering Physics	3	2	5	4	30	70	25	25	**150**
	CL141	Engineering Mechanics	4	2	6	5	30	70	25	25	**150**
	ME142	Workshop Practices	0	2	2	1			25	25	**50**
	Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra- curricular &co curricular				11						
					36	**20**					**750**
	HS 121A	English Language and Literature	1	1	2	2	25	25	25	25	**100**
	MA142	Engineering Mathematics II	4	1 (T)	4	4	30	70			**100**
	CL142	Environmental Science	2		2	2	30	70			**100**
	IT141	Fundamentals of Computer Programming	3	2	5	4	30	70	25	25	**150**
	ME143	Basics of Civil & Mechanical Engineering	4	2	6	5	30	70	25	25	**150**
	EE141	Basics of Electronics & Electrical Engineering	4	2	6	5	30	70	25	25	**150**
	Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra- curricular & co curricular				11						
					36	**22**					**750**

	HS122A/HS131A	Values and Ethics/Philosophy	2		2	2	30	70			**100**
	MA241	Engineering Mathematics III	4		4	4	30	70			**100**
	EE241	Analog and Digital Electronics	4	2	6	5	30	70	25	25	**150**
	EE242	Circuit Theory	4	2	6	5	30	70	25	25	**150**
	EE243	Electrical Measurements and Industrial Instrumentation	4	2	6	5	30	70	25	25	**150**
	XXXXX	University Elective- I	2		2	2	30-70				**100**
	Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra- curricular & co curricular				10						
					36	**23**					**750**
Level 2	HS123.01A/ HS 127.01A/ HS133A	Critical Thinking and Logic/ Communication skills 2/ Creativity, Problem Solving and Innovation	2		2	2	30-70				**100**
	EE244	Electrical Power Generation and its Economics	4		4	4	30	70			**100**
	EE245	Control Systems	4	2	6	5	30	70	25	25	**150**
	EE246	Microprocessor & Microcontrollers	4	2	6	5	30	70	25	25	**150**
	EE247	Transformers and Induction Machines	4	4	8	6	30	70	50	50	**200**
	XXXXX	University Elective- II	2		2	2	30-70				**100**
	Assignment Practices/Student counseling/Remedial classes/Library/Sports /Extra- curricular & co-curricular				8						
					36	**24**					**800**

Level 3	HS124.01A	Professional Communication		2	2	2			30	70	**100**
	EE341	Electrical Power Transmission and Distribution	4		4	4	30	70			**100**
	EE342	Synchronous and DC Machines	4	4	8	6	30	70	50	50	**200**
	EE343	Power Electronics & Drives I	4	2	6	5	30	70	25	25	**150**
	EE344	Minor Project I	0	4	4	2			50	50	**100**
	EE345	Electrical Product Survey	0	2	2	2			50	50	**100**
	EE371-EE372	Programme Elective I	4	2	6	5	30	70	25	25	**150**
	EE350	Summer Internship I	0	0	0	3			75	75	**150**
	Assignment Practices/ Student counseling/ Remedial classes/ Library/ Sports/ Extra- curricular & co curricular				4						
					36	**29**					**1050**
	HS134A	Contributor Personality Development		2	2	2			30	70	**100**
	EE346	Digital Signal Processing	3	2	5	4	30	70	25	25	**150**
	EE347	Programmable Logic Controllers and Industrial Automation	2	4	6	4	30	70	50	50	**200**
	EE348	Power Electronics & Drives II	3	2	5	4	30	70	25	25	**150**
	EE349	Fault Analysis and Switchgear	4	2	6	5	30	70	25	25	**150**
	EE360	Minor Project II	0	4	4	2			50	50	**100**
	EE376-EE377	Programme Elective II	3	2	5	4	30	70	25	25	**150**
	Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra- curricular & co curricular				3						
					36	**25**					**1000**

Level 4	EE441	Power System Operations and Control	4	2	6	5	30	70	25	25	**150**
	EE442	Power System Protection	4	2	6	5	30	70	25	25	**150**
	EE443	Electrical Machine Design	4	2	6	5	30	70	25	25	**150**
	EE444	Simulation Lab	0	4	4	2			50	50	**100**
	EE450	Summer Internship II				3			75	75	**150**
	EE471-EE473	Programme Elective III	4	2	6	5	30	70	25	25	**150**
	Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra-curricular & co curricular				8						
					36	**25**					**850**
	EE446	Commissioning and Testing of Electrical Equipment	4	2	6	5	30	70	25	25	**150**
	EE447	Modeling and Control of Renewable Energy Sources	4	2	6	5	30	70	25	25	**150**
	EE448	Major Project			18	9			250	250	**500**
	EE476-EE478	Programme Elective IV	4	2	6	5	30	70	25	25	**150**
					36	**27**	**90**	**210**	**325**	**325**	**950**

CHAROTAR UNIVERSITY OF SCIENCE & TECHNOLOGY (CHARUSAT)											
		Hours				Credits	Marks				
			Theory	Practical	Total						
					288	192					6900

LIST OF ELECTIVES FOR B TECH PROGRAMME IN ELECTRICAL ENGINEERING

University Electives for Level 2

University Elective 1		University Elective 2	
EE281	Electrical Engineering Materials	**EE282**	Electrical Power Utilisation and Traction

Electives for Level 3

	PROGRAMME ELECTIVE 1	PROGRAMME ELECTIVE 2	
EE371	Advanced Microcontrollers	**EE376**	Special Electrical Machines and Applications
EE372	VLSI Technology & Design	**EE377**	Embedded Systems

Electives for Level 4

	PROGRAMME ELECTIVE 3	PROGRAMME ELECTIVE 4	
EE471	Power Electronics Applications in Power System	**EE476**	Advances in Power System
EE472	Communication Engineering	**EE477**	Internet of Things
EE473	High Voltage Engineering	**EE478**	Energy Conservation and Management

University Elective I & II:

(Will be available in a Common Slot)

Occupational Health and Safety, IPR, Regulatory Affairs, Contract Management,

Energy Management, Research Methodology, Entrepreneurship, Project Management, First AID and Life Support

Risk Management, Disaster Management, Scientific Instrumentation & Measurement, Operation Research,
Business Environment, Quality Assurance, Computer Programming, Numerical Analysis, Web Designing, Cyber Security etc

M&V Patel Department of Electrical Engineering
Faculty of Technology & Engineering, CHARUSAT
14th Board of Studies Meeting

Date : July 28, 2018, Saturday
Time : 10:00 am onwards
Venue: Room No: 102, HOD (EE), CSPIT, CHARUSAT Campus

1	Mr. Nilay Patel	**Chairman;**	Assistant Professor & Head, Department of Electrical Engineering,	
2	Dr. Kartik Pandya	**Member;**	Professor, Department of Electrical Engineering,	
3	Mr. Maulik Shah	**Member;**	Assistant Professor Department of Electrical Engineering,	
4	Mr. Mhir Bhatt	**Member;**	Assistant Professor Department of Electrical Engineering,	
5	Mr. Jivanadhar Joshi	**Member;**	Assistant Professor Department of Electrical Engineering,	
6	Mr. Jigar Sarda	**Member;**	Assistant Professor Department of Electrical Engineering,	
7	Mr. Pratik Mochi	**Member;**	Assistant Professor, Department of Electrical Engineering,	
8	Dr. Sanjay R. Joshi	**External Member;**	Principal Government Engineering College, Valsad	
9	Dr. Bhavik Suthar	**External Member;**	~~Principal~~ Professor in EE Government Engineering College, bhuj	
10	Dr. Santosh Vora	**External Member;**	Professor Department of Electrical Engineering Nirma University, Ahmedabad	
11	Mr. Sanjay Mahagaokar	**External Member;**	Dy General Manager Engineering and Technology, Rotomag Power Drives. Napa Talpad.	
12	Prof. Prakash K. Shah	**External Member;**	Professor Department of Electrical Engineering LDRP, Ahmedabad	

CHARUSAT
CHAROTAR UNIVERSITY OF SCIENCE AND TECHNOLOGY

M & V Patel Department of Electrical Engineering

Action taken report on the feedbacks received from different Stack Holders

For the AY 2016-17

The summary of the feedback and suggestions received from the stakeholder and corresponding action taken for AY 2016-17 is as below.

Sr. No.	Suggestion Received	Action Taken	Annexure Page No
1	Offer more courses on Renewable energy and Electric Vehicle	A course on "Modelling and Control of Renewable Energy Sources" is Introduce from AY 2019-20 in Final Year EV courses will be implemented by AY 2021-22	23,36,43,52
2	Full time training can be included in final year.	"Summer Internship II" introduced in Fourth Year from AY 2019-20	27,36
3	Offer short Program	Not considered right now.	-
4	Applications of AI and ML techniques for solving problems of EE should be included	Minor specialization is going to be offered from 2021-22.	55,56
5	Project credit should be increased and final semester should be of Industrial training	Project credit increased fro AY 2019-20. From AY 2022-23 It will be of full time.	3,11

PrBhatt
HEAD OF DEPARTMENT
Dept. of Electrical Engg.
Chandubhai S. Patel Institute of Technology
At. & Po. Changa-388421., Ta. Petlad,
Dist. : Anand. (Gujarat)

Minutes –12th Board of Studies Meeting
M&V Patel Department of Electrical Engineering
Faculty of Technology & Engineering, CHARUSAT

Date : September 3, 2016, Saturday
Time : 10:00 am onwards
Venue: Room No: 102, HOD (EE), CSPIT, CHARUSAT Campus

The 12th meeting of Board of Studies, M & V Patel Department of Electrical Engineering, Faculty of Technology and Engineering (FTE), Charotar University of Science and Technology (CHARUSAT) was held on 3/9/2016 at 10:00 a.m. at M & V Patel Department of Electrical Engineering, CSPIT, CHARUSAT Campus. Following members were present:

1	Dr. Praghnesh Bhatt	**Chairman;**	Professor & Head, Department of Electrical Engineering,	
2	Dr. Kartik Pandya	**Member;**	Professor, Department of Electrical Engineering,	
3	Dr. Bhinal Mehta	**Member;**	Assistant Professor Department of Electrical Engineering,	
4	Mr. Nilay Patel	**Member;**	Assistant Professor Department of Electrical Engineering,	
5	Ms. Pankita Mehta	**Member;**	Assistant Professor Department of Electrical Engineering,	
6	Mr. Jivanadhar Joshi	**Member;**	Assistant Professor, Department of Electrical Engineering,	
7	Dr. Sanjay R. Joshi	**External Member;**	Principal Government Engineering College, Valsad	
8	Dr. Bhavik Suthar	**External Member;**	Associate Professor Government Engineering College, Modasa	
9	Dr. Santosh Vora	**External Member;**	Professor Department of Electrical Engineering Nirma University, Ahmedabad	
10	Dr. Vijay Shah	**External Member;**	R&D Specialist, BU-PPMV, Vadodara	
11	Mr. Kirat Pandya	**External Member;**	AGM, Schneider Electricals Ltd, Vadodara	
12	Mr. Sanjay Mahagaokar	**External Member;**	Dy General Manager Engineering and Technology Rotomag Power Drives Ltd	

Initiation:

Dr. Praghnesh Bhatt welcomed all the members of Board of Studies.

Agenda Proceedings & Resolutions:-

Item 12.01:	To approve teaching and examination scheme of B. Tech program under Choice Based Credit System (CBCS) for 3rd to 8th Semester effective from ACY 2017-2018.
	Proceedings 12.01: The teaching and examination scheme of B. Tech program under Choice Based Credit System (CBCS) for 3rd to 8th Semester effective from ACY 2017-2018 has been discussed in details. **Suggestions Received:** ▪ The proposed structure of CBCS has been discussed in detail along with core and different elective courses. ▪ The courses are appropriately distributed among the major areas of electrical engineering such as power system, electrical machines, power electronics, microprocessors & microcontrollers along with required supplementary courses. ▪ It is appreciated to keep the more weightage to practical hours. ▪ The students must know the fundamental of the subjects and they must have knowledge about the various electrical products available in the market along with its specifications and prices. ▪ The students should have the opportunities to develop hardware based projects to learn the theoretical concepts more effectively. The preparation of the complete project report enhances their writing, presentation and communication skills. ▪ Power generation by renewable energy sources and its modeling concepts needs to be imparted as they are the present day demand. ▪ The operating paradigm of the distribution system has changed drastically and its concepts can be covered by offering the courses on smart grid, micro grid and distributed generation. ▪ Early exposure to practical/industrial training makes the students familiar with industrial developments and practices. The projects/training ▪ The department has purchased good number of licensed software. The knowledge of these licensed software will add values for industrial jobs as well as for the further studies.

	▪ The valuable suggestions are received from all invited members of BoS for finalizing the contact hours of 8th semester final year project. Different dimensions to keep the project for whole semester are discussed in detail considering industries' criteria to absorb the students for project. The possibilities to award in-house projects based on hardware development or simulations for 8th semester are also discussed. ▪ Handbooks, catalogs and IS & IEC standards, product manuals should be included for the course on Commissioning and Testing of Electrical Equipments. ▪ The curriculum structure of other universities such as GTU, Nirma, Amity, IITs, NIT, NUS, University of Illinois are also referred and discussed. The goal of designing curriculum structure is to prepare the students for GATE, other competitive exams and for further studies. ▪ The university core and elective courses are also reviewed and they are found suitable to inculcate values & ethics, to enhance critical thinking & logic, to improve communication skills and to increase basic analytical ability among the students. ▪ The vision and mission of the department, POs and PEOs are reviewed and redefined. For 2nd year courses effective from ACY 2017-2018, the individual course objectives and their outcomes are defined. **Resolution 12.01:** • Based on the extensive discussion and suggestion received from the BoS members, the teaching and examination scheme of B. Tech Program under CBCS is finalized and attached in **Annexure 12.I.**
Item 12.02:	To review and approve the detailed syllabus of 1st and 2nd year B. Tech program under CBCS which will be effective from ACY 2017-2018.
	Proceedings 12.02: The detailed syllabus of the courses for B Tech – 2nd Year (3rd and 4th Semesters) effective from 2017-2018 are reviewed. **Suggestions Received:** ▪ The depths of contents of different courses are discussed at length. ▪ The contact hours required to cover the proposed topics are verified and required changes are suggested. ▪ For **EE281** (Electrical Engineering Materials) (University Elective I): The concepts of different conducting, insulating, magnetics and semiconductor material will be given. This will help students in later stage at designing of machines. ▪ For **EE282** (Electrical Power Utilization and Traction) (University Elective II): Electric heating, welding, Fundamentals of illumination and traction can be covered in this course. ▪ For **EE241**: Analog and Digital Electronics, course contents are discussed and finalized.

	For this course, more useful and fundamental book "Design with Operational Amplifier and analog Integrated Circuits, Sergio Franco, McGraw Hill" is suggested. In addition to existing test kits in analog and digital electronics lab, "Analog Discovery Kit" is suggested. ▪ For **EE242**: Circuit Theory, the contents are found suitable. Following new books for circuit theory are proposed. 1. Electric Circuit Analysis, K.S. Sureshkumar, Pearson Education, India 2. Basic Circuit Theory, Charles A. Desoer and Ernest S. Kuh, McGraw Hill ▪ For **EE243**: Electrical Measurements and Industrial Instrumentation, the conventional topics on measurement such as resistance measurement, different AC bridges, shunts and multipliers should be incorporated. The digital methods for power measurement should be discussed. ▪ For **EE244**: Electrical Power Generation and its Economics, the contents are found suitable. ▪ For **EE245**: Control System, state space methods should be limited as compared to other methods. The methods for designing controller structure and compensator designs are suggested to include. ▪ For **EE246** Microprocessor & Microcontrollers, the syllabus is well designed. ▪ For **EE247**: Transformers and Induction Machines, the combination of two AC machines will work well; the portion of the commissioning of transformer and motors need not to be discussed at 4th semester. ▪ Revised course of MA241 Engineering Mathematics III, which is passed in respective BoS will be introduced in third semester of AY 2017-18 **Resolution 12.02:** ▪ The suggestions received from BoS members are incorporated and detailed syllabi for B Tech – 2nd Year (3rd and 4th Semesters) effective from 2017-2018 is approved and is attached in **Annexure – 12.II.**
Item 12.03	To approve the teaching and examination scheme of M. Tech program under Choice Based Credit System (CBCS) effective from ACY: 2016-2017
	Proceedings 12.03: The teaching and examination scheme of M. Tech program under Choice Based Credit System (CBCS) effective from ACY: 2016-2017 is reviewed. **Suggestions Received:** ▪ The different core and elective courses offered at university level are reviewed. The courses under program core, program electives and cluster electives are also reviewed. **Resolution 12.03:**

	University elective courses are introduced. The teaching and examination scheme of M. Tech program under Choice Based Credit System (CBCS) effective from ACY: 2016-2017 is approved and attached in **Annexure – 12.III.**
Item 12.04	To review and approve the detailed syllabus of 1st and 2nd year M. Tech program under CBCS effective from ACY 2016-2017.
	Proceedings 10.04: The detailed syllabus of 1st and 2nd year M. Tech program under CBCS effective from ACY 2016-2017 is reviewed. **Suggestions Received:** **EE781 Optimization Techniques and EE782** The contents of all the course of 1st and 2nd semester of M. Tech are discussed at length. The courses under program electives and cluster electives are good and syllabus contents are well designed. Very good university electives are constructed by various BoS and listed in annexure IV. **Resolution 12.04:** The detailed syllabus of 1st and 2nd year M. Tech program under CBCS effective from ACY 2016-2017 is approved and attached in **Annexure – 12.IV**.
Item 12.05	To review and approve (a) T&E scheme and the detailed syllabus of 3rd year B. Tech program for a batch of 2015 entry and (b) T&E scheme and detailed syllabus of 4th year B. Tech program for a batch of 2014 entry
	Resolution 10.05: (a) T&E scheme and the detailed syllabus of 3rd year B. Tech program for a batch of 2015 entry and (b) T&E scheme and detailed syllabus of 4th year B. Tech program for a batch of 2014 entry are approved and attached in **Annexure 12.V and Annexure 12.VI.**
Item 12.06	Discussion on effective implementation of Outcome Based Education (OBE) and ICT based Teaching-Learning
	Suggestions Received: ▪ All faculty members must aware about each criteria defined by NBA. ▪ The proper understanding of mapping of POs, PEOs, COs and their assessment tools is required. ▪ Faculty contribution should be increased for publication, funded projects and consultancy. ▪ The usage of open course ware from NPTEL, MIT and BISAC must be increased.
Item 12.07	Introducing the new PG program in Electrical Engineering
	Suggestions Received: Following PG programs in Electrical Engineering are proposed. (1) Power Electronics and Drives (2) Renewable Energy (3) Automation and Control
Item 12.08	Suggestion regarding new UG programs in new Institute of Technology of Faculty of

	Technology and Engineering, CHARUSAT
	Suggestions Received: Following new UG programs in can be proposed along with CE, IT, ICT. (1) Mechanical Engineering (2) Instrumentation and Control (3) Bio Informatics
Item 12.09	Discussion regarding recent approval from NBA and scope for the improvement
	All invited BoS members congratulated the University, Institute and Department for getting "A" graded from NAAC and KCG as well as for getting NBA for three departments
Item 12.10	Approval of Examiners' Panel
	The examiners panels for B. Tech and M. Tech have been reviewed and approved. The approved examiner panel is attached in **Annexure 12.VII.**

Additional Items

Sr. No	**Agenda**	**Discussion/Suggestions**
1	Review of Exam Question Papers	Question papers of internal and university examination have been reviewed. The briefings about the continuous evaluation, freedom for pedagogy selection for faculty and execution of the practical sessions have been given to external BoS members. The quality of question papers are found satisfactory, but it is suggested to increase the weighatge on the questions that can increase the analytical and logical thinking ability of students.
2	Review of Result Analysis	The records of result analysis of both internal and university exam are maintained. The results of both the exams are generally discussed and analyzed in the department meeting as soon as the exam gets over and the necessary actions are decided. The YoY comparisons of the results are also discussed and the figures are acceptable. The efforts should be given to again improve the results at all levels. The conduction of the remedial coaching for weaker students has been appreciated by the members.
3	Review of Placement Records	The campus placement of the student needs to be increased. More efforts are required to invite the companies for placement. The aptitude sessions organized for the students are appreciated. It is advised to keep extra technical session to prepare the students for technical skills.
4	Review of B. Tech and M. Tech Projects works	The project titles for B. Tech and M. Tech are reviewed and found satisfactory. It is suggested to give more emphasis on hardware based projects at B. Tech level. For M. Tech, the extensive use of licenses software may help the students to solve/reproduce the IEEE journal papers. Paper presentation for M. Tech students should be made compulsory.
5	Review of Feedback from Students, Identification of slow learners, Counseling	Review pattern for the students feedback and actions after the feedback have been explained. It is an useful component to improve the performance of teacher and T-L practices. The student counseling activities are very appreciated by all the members.

	activities	

Dr. Praghnesh Bhatt
Chairman
Board of Studies (EE)

HEAD OF DEPARTMENT
Dept. of Electrical Engg.
Chandubhai S. Patel Institute of Technology
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Dist. : Anand. (Gujarat)

Annexure 12.I & II: TEACHING & EXAMINATION SCHEME FOR B TECH PROGRAMME IN ELECTRICAL ENGINEERING (CBCS) Entry Year: 2016

CHAROTAR UNIVERSITY OF SCIENCE & TECHNOLOGY (CHARUSAT)											
TEACHING & EXAMINATION SCHEME FOR B TECH PROGRAMME IN ELECTRICAL ENGINEERING (CBCS) Entry Year: 2016											
Level	**Course Code**	**Course Title**	**Teaching Scheme**				**Examination Scheme**				
			Contact Hours			**Credit**	**Theory**		**Practical**		**Total**
			Theory	**Practical/Tutorial**	**Total**		**Internal**	**External**	**Internal**	**External**	
Level 1	HS101A- HS106A	A Course on Liberal Arts	2		2	2			50	50	**100**
	MA141	Engineering Mathematics I	4	1	5	4	30	70	0	0	**100**
	ME141	Engineering Graphics	2	4	6	4	30	70	50	50	**200**
	PY141	Engineering Physics	3	2	5	4	30	70	25	25	**150**
	CL141	Engineering Mechanics	4	2	6	5	30	70	25	25	**150**
	ME142	Workshop Practices	0	2	2	1			25	25	**50**
		Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra-curricular &co curricular			10						
			15	**11**	**36**	**20**	**120**	**280**	**175**	**175**	**750**
	HS 121A	English Language & Literature	2		2	2	25	25	25	25	**100**
	MA142	Engineering Mathematics II	4	1	5	4	30	70			**100**
	CL142	Environmental Science	2	0	2	2	30	70			**100**
	IT141	Fundamentals of Computer Programming	3	2	5	4	30	70	25	25	**150**
	ME143	Basics of Civil & Mechanical Engineering	4	2	6	5	30	70	25	25	**150**
	EE141	Basics of Electronics & Electrical Engineering	4	2	6	5	30	70	25	25	**150**
		Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra-curricular &co curricular			10						
			19	**7**	**36**	**22**	**175**	**375**	**100**	**100**	**750**

	HS122A/HS131A	Values and Ethics/Philosophy	2		2	2	30	70			**100**
	MA241	Engineering Mathematics III	4	0	4	4	30	70			**100**
	EE241	Analog and Digital Electronics	4	2	6	5	30	70	25	25	**150**
	EE242	Circuit Theory	4	2	6	5	30	70	25	25	**150**
	EE243	Electrical Measurements and Industrial Instrumentation	4	2	6	5	30	70	25	25	**150**
	XXXXX	University Elective- I	2	0	2	2	30	70			**100**
		Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra-curricular &co curricular			10						
Level 2			**20**	**6**	**36**	**23**	**180**	**420**	**75**	**75**	**750**
	HS127.01A/HS133A/ HS123.01A	Communication Skills-2/ Creativity, problem Solving and Innovation/ Critical Thinking and Logic	2		2	2	50	50			**100**
	EE244	Electrical Power Generation and its Economics	4	0	4	4	30	70			**100**
	EE245	Control Systems	4	2	6	5	30	70	25	25	**150**
	EE246	Microprocessor & Microcontrollers	4	2	6	5	30	70	25	25	**150**
	EE247	Transformers and Induction Machines	4	4	8	6	30	70	50	50	**200**
	XXXXX	University Elective- II	2	0	2	2	30	70			**100**
		Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra-curricular &co curricular			7						
			20	**8**	**35**	**24**	**200**	**400**	**100**	**100**	**800**

Level 3	HS124.01A	Professional Communication I	2		2	2			30	70	**100**
	EE341	Electrical Power Transmission and Distribution	4	2	6	5	30	70	25	25	**150**
	EE342	Synchronous and DC Machines	4	4	8	6	30	70	50	50	**200**
	EE343	Power Electronics & Drives I	4	2	6	5	30	70	25	25	**150**
	EE344	Minor Project I	0	4	4	2			50	50	**100**
	EE345	Electrical Product Survey				2			50	50	**100**
	EE350	Summer Internship I		.3	3	3			75	75	**150**
	EE371-EE372	Programme Elective I	3	2	5	4	30	70	25	25	**150**
		Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra-curricular &co curricular			6						
			17	**14**	**37**	**26**	**120**	**280**	**255**	**295**	**950**
	HS125A	**Society, Governance and International Studies**	2		2	2	25	25	25	25	**100**
	EE346	Digital Signal Processing	3	2	5	4	30	70	25	25	**150**
	EE347	Programmable Logic Controllers and Industrial Automation	3	2	5	4	30	70	25	25	**150**
	EE348	Power Electronics & Drives II	3	2	5	4	30	70	25	25	**150**
	EE349	Fault Analysis and Switchgear	4	2	6	5	30	70	25	25	**150**
	EE360	Minor Project II	0	4	4	2	0	0	50	50	**100**
	EE376-EE377	Programme Elective II	3	2	5	4	30	70	25	25	**150**

		Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra-curricular &co curricular			4						
			18	**14**	**36**	**25**	**175**	**375**	**200**	**200**	**950**
Level 4	EE441	Power System Operations and Control	4	2	6	5	30	70	25	25	**150**
	EE442	Power System Protection	4	2	6	5	30	70	25	25	**150**
	EE443	Electrical Machine Design	4	4	8	6	30	70	25	25	**150**
	EE444	Simulation Lab	0	2	2	1			50	50	**100**
	EE445	Summer Practical Training				3			50	50	**100**
	EE471-EE472	Programme Elective III	4	2	6	5	30	70	25	25	**150**
		Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra-curricular &co curricular			2						
			16	**12**	**30**	**25**	**120**	**280**	**200**	**200**	**800**
	EE446	Commissioning and Testing of Electrical Equipment	4	2	6	5	30	70	25	25	**150**
	EE447	Modeling and Control of Renewable Energy Sources	4	2	6	5	30	70	25	25	**150**
	EE448	Major Project				9			250	250	**500**
	EE473-EE474	Programme Elective IV	4	2	6	5	30	70	25	25	**150**
			12	**6**	**18**	**27**	**90**	**210**	**325**	**325**	**950**

CHAROTAR UNIVERSITY OF SCIENCE & TECHNOLOGY (CHARUSAT)											
		Hours				Credits	Marks				
			Theory	Practical	Total						
			137	78	264	192	1180	2620	1430	1470	6700

LIST OF ELECTIVES FOR B TECH PROGRAMME IN ELECTRICAL ENGINEERING

University Electives for Level 2

	UNIVERSITY ELECTIVE 1	UNIVERSITY ELECTIVE 2	
EE281	Electrical Engineering Materials	EE282	Electrical Power Utilization and Traction

Electives for Level 3

	PROGRAMME ELECTIVE 1	PROGRAMME ELECTIVE 2	
EE371	Advanced Microcontrollers	**EE376**	Special Electrical Machines and Applications
EE372	VLSI Technology and Design	**EE377**	Embedded System

Electives for Level 4

	PROGRAMME ELECTIVE 3	PROGRAMME ELECTIVE 4	
EE471	Power Electronics Applications in Power System	**EE473**	Smart Grid and Distribution Generation
EE472	Advances in Power System	**EE474**	Energy Auditing and Management

University Elective I & II:	**Occupational Health and Safety, IPR, Regulatory Affairs, Contract Management,**
(Will be available in a Common Slot)	**Energy Management, Research Methodology, Entrepreneurship, Project Management, First AID and Life Support**
	Risk Management, Disaster Management, Scientific Instrumentation & Measurement, Operation Research, **Business Environment, Quality Assurance, Computer Programming, Numerical Analysis, Web Designing, Cyber Security etc**

Annexure 12.III & IV TEACHING AND EXAMINATION SCHEME FOR M Tech in Electrical Engineering (Electrical Power Systems)

Semester	Course Code	Course Title	Teaching Scheme				Examination Scheme				
			Theory	Practical/Tutorial	Total	Credit	Theory		Practical		Total
							Internal	External	Internal	External	
Sem 1	EE741	Modeling & Simulation of Electrical Machines (PC - 1)	4	2	6	5	30	70	25	25	150
	EE742	Modern Power System Operations (PC - 2)	3	2	5	4	30	70	25	25	150
	EE743	Advanced Power Electronics in Power Systems (PC - 3)	3	2	5	4	30	70	25	25	150
	EE7XX	Programme Elective-1 (PE - 1)	3	2	5	4	30	70	25	25	150
	EE7XX	Program Cluster Elective - 1 (PCT - 1)	3	2	5	4	30	70	25	25	150
	HS701	Advanced Critical Thinking & Logic (UC - 1)	2	0	2	2	30	70	0	0	100
	XXXXX	University Elective 1 (UE - 1)	2	0	2	2	30	70	0	0	100
			20	**10**	**30**	**25**	**210**	**490**	**125**	**125**	**950**
Sem 2	EE744	Advanced Power System Dynamics & Stability (PC - 4)	4	2	6	5	30	70	25	25	150
	EE745	FACTS & HVDC Transmission (PC - 5)	3	2	5	4	30	70	25	25	150

	EE746	Advanced Power System Protection (PC - 6)	3	2	5	4	30	70	25	25	150
	EE7XX	Programme Elective - 2 (PE - 2)	3	2	5	4	30	70	25	25	150
	EE7XX	Program Cluster Elective – 2skills	3	2	5	4	30	70	25	25	150
	HS702	Academic Writing & communication (UC-2)	0	2	2	2	0	0	30	70	100
	XXXXX	University Elective 2 (UE - 2)	2	0	2	2	30	70	0	0	100
			18	**12**	**30**	**25**	**180**	**420**	**155**	**195**	**950**

Programme Electives of Semester 1 and 2

Programme Electives 1 (PE 1) for Semester 1			**Programme Electives 2 (PE 2) for Semester 2**	
EE761	Control System Engineering		EE763	Modeling and Simulation of Renewable Energy Sources
EE762	Engineering Optimization Techniques		EE764	Distributed Generation and Smart Grid

Cluster Electives of Semester 1 and 2

Program Cluster Electives 1 (CT 1) for Semester 1			**Program Cluster Electives 2 (CT 2) for Semester 2**	
EE771	Digital Signal Processing & its Application		EE772	Restructuring & Deregulation of Power Systems
IT767	Micro device Programming		IT768	Applied Cryptography
EC767	Embedded System Design		EC768	Digital Image & Speech Processing
CE767	Operating System Design & Concepts		CE768	Software Project Management & Quality Assurance

University Electives of Semester 1 and 2

University Electives (UE 1) for Semester 1			**University Electives (UE 2) for Semester 2**	
MA771	Reliability and Risk Analysis		EE782	Energy Audit and Management
EE781	Optimization Techniques		CE771	Project Management
ME781	Occupational Health and Safety		IT771	Cyber Security and Laws
CE772	Research Methodology		CA 842	Mobile Application Development
CA730	Internet & Web Designing		PT796	Fitness & Nutrition
PT795	Health & Physical Activity		NR 752	Epidemiology and Community Health
NR 751	Women's Health		OC733	Introduction to Polymer Science
RD701	Introduction to Analytical Techniques		MB651	Software based Statistical Analysis
RD702	Introduction to Nano science& Technology		PH826	Intellectual Property Rights

MB650	Creative Leadership		MA772	Design of Experiments	
PH825	Community Pharmacy Ownership				

Semester	Course Code	Course Title	Credit	Examination Scheme					
				Internal		External			Total
				Progress Report	Progress Seminar	Report	Seminar	Viva	
Sem 3	EE811	Project Preliminaries	4	50	50	0	50	50	200
	EE812	Project Phase 1	18	100	100	100	100	100	500
			22	**150**	**150**	**100**	**150**	**150**	**700**
Sem 4	EE813	Project Phase 2	30	200	200	200	200	200	1000
			30	**200**	**200**	**200**	**200**	**200**	**1000**
		Grand Total	**102**						**3600**

Annexure 12.V TEACHING AND EXAMINATION SCHEME FOR Final Year B Tech in Electrical Engineering Entry Year: 2014

Sem	Course Code	Course title	Teaching Scheme				Examination Scheme				Total
			Contact Hrs.			Credits	Theory		Practical		
			Theory	Practical	Total		Internal	External	Internal	External	
Final Sem-VII	EE 401.01	Electrical Machine Design - I	3	2	5	4	30	70	25	25	150
	EE 402	Electrical Power System - IV	3	2	5	4	30	70	25	25	150
	EE 403	Power Electronics & Drives - II	4	2	6	5	30	70	25	25	150
	EE 404	Energy Conservation and Management	3	0	3	3	30	70			100
	EE 405	Power System Protection	4	2	6	5	30	70	25	25	150
		Elective - I	4	2	6	5	30	70	25	25	150
			21	**10**	**31**	**26**	**180**	**420**	**125**	**125**	**850**
Final Sem-VIII	EE 406.01	Electrical Machine Design - II	3	2	5	4	30	70	25	25	150
	EE 407	Commissioning of Electrical Equipments	3	2	5	4	30	70	25	25	150
	EE 408	Power System Stability & Control	4	2	6	5	30	70	25	25	150
	EE 409	Digital Signal Processing	3	2	5	4	30	70	25	25	150
		Elective - II	4	2	6	5	30	70	25	25	150
	EE 410.01	Project	0	6	6	3	0	0	50	100	150
			17	**16**	**33**	**25**	**150**	**350**	**175**	**175**	**900**

Code	Elective - I		Code	Elective - II
EE 414	Power System Operations		EE 415	Advances in Power System
EE 418	Applications of Advanced Microcontrollers in Electrical Engineering-I		EE 419	Applications of Advanced Microcontrollers in Electrical Engineering-II

Annexure 12.VI TEACHING AND EXAMINATION SCHEME FOR THIRD Year B Tech in Electrical Engineering Entry Year: 2015

Sem	Course Code	Course Title	Teaching Scheme					Examination Scheme				
			Contact Hours				Credit	Theory		Practical		Total
			Theory	Practical	Tutorial	Total		Internal	External	Internal	External	
TY Sem-V	EE301	Electrical Machines-II	4	2	0	6	5	30	70	25	25	150
	EE302.01	Electrical Power System-II	4	0	0	4	4	30	70	0	0	100
	EE303.01	Microcontrollers and Applications	3	2	0	5	4	30	70	25	25	150
	EE304.01	Industrial Instrumentation	3	2	0	5	4	30	70	25	25	150
	EE305	Power Electronics & Drives-I	4	2	0	6	5	30	70	25	25	150
	EE311	Simulation Lab-I	0	2	0	2	1	0	0	25	25	50
	HS124.01A	Professional Communication	**2**		**0**	**2**	**2**	**0**	**0**	**30**	**70**	**100**
			20	**10**		**30**	**25**	**150**	**350**	**155**	**195**	**850**
TY Sem-VI	EE306.01	Electrical Machines-III	4	2	0	6	5	30	70	25	25	150
	EE307	Electrical Power System-III	4	2	0	6	5	30	70	25	25	150
	EE308.01	High Voltage Engineering	3	2	0	5	4	30	70	25	25	150
	EE309.01	Electrical Power Utilisation & Traction	3	0	0	3	3	30	70			100
	EE310.01	Programmable Logic Controllers and Industrial Automation	4	2	0	6	5	30	70	25	25	150
	EE312	Simulation Lab-II	0	2	0	2	1	0	0	25	25	50
	HS125.01A/ HS130A/ HS134A	Society, Governance and International Studies/ Law and Justice/ Contributor Personality Development	2		**0**	**2**	**2**	**25**	**25**	**25**	**25**	**100**

			20	**10**		**30**	**25**	**175**	**375**	**150**	**150**	**850**

Annexure 12.VII Examiner Panel List for B. Tech and M. Tech Examination

Examiner Panel for Electrical Engineering (External Examiners)

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Examiner Panel for Electrical Engineering (Internal Examiners)

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Minutes – 12th Board of Studies Meeting
M&V Patel Department of Electrical Engineering
Faculty of Technology & Engineering, CHARUSAT

Date : September 3, 2016, Saturday
Time : 10:00 am onwards
Venue: Room No: 102, HOD (EE), CSPIT, CHARUSAT Campus

The 12th meeting of Board of Studies, M&V Patel Department of Electrical Engineering, Faculty of Technology and Engineering (FTE), Charotar University of Science and Technology (CHARUSAT) was held on 3/9/2016 at 10:00 a.m. at Department of Electrical Engineering, CSPIT, CHARUSAT Campus. Following members were present:

1	Dr. Praghnesh Bhatt	**Chairman;**	Professor & Head, Department of Electrical Engineering,	
2	Dr. Kartik Pandya	**Member;**	Professor, Department of Electrical Engineering,	
3	Dr. Bhinal Mehta	**Member;**	Assistant Professor Department of Electrical Engineering,	
4	Mr. Nilay Patel	**Member;**	Assistant Professor Department of Electrical Engineering,	
5	Ms. Pankita Mehta	**Member;**	Assistant Professor Department of Electrical Engineering,	Pankita
6	Mr. Jeevanadhar Joshi	**Member;**	Assistant Professor, Department of Electrical Engineering,	
7	Dr. Sanjay R. Joshi	**External Member;**	Principal Government Engineering College, Valsad	
8	Dr. Bhavik Suthar	**External Member;**	Associate Professor Government Engineering College, Modasa	
9	Dr Santosh Vora	**External Member;**	Professor Department of Electrical Engineering Nirma University, Ahmedabad	
10	Dr Vijay Shah	**External Member;**	R&D Specialist, BU-PPMV, Vadodara	
11	Mr. Kirat Pandya	**External Member;**	AGM, Schneider Electricals Ltd, Vadodara	
12	Mr. Sanjay Mahagaokar	**External Member;**	Dy General Manager Engineering and Technology Rotomag Power Drives Ltd	

Minutes –14-Ath Board of Studies Meeting
M&V Patel Department of Electrical Engineering
Faculty of Technology & Engineering, CHARUSAT

Date : July 28, 2018, Saturday
Time : 10:00 am onwards
Venue: Room No: 102, HOD (EE), CSPIT, CHARUSAT Campus

The 14th meeting of Board of Studies, M&V Patel Department of Electrical Engineering, Faculty of Technology and Engineering (FTE), Charotar University of Science and Technology (CHARUSAT) was held on 28/7/2018 at 10:00 am. at M&V Patel Department of Electrical Engineering, CSPIT, CHARUSAT Campus. Following members were present:

1	Mr. Nilay Patel	**Chairman;**	Assistant Professor & Head, Department of Electrical Engineering,	
2	Dr. Kartik Pandya	**Member;**	Professor, Department of Electrical Engineering,	
3	Mr. Maulik Shah	**Member;**	Assistant Professor Department of Electrical Engineering,	
4	Mr. Mhir Bhatt	**Member;**	Assistant Professor Department of Electrical Engineering,	
5	Mr. Jivanadhar Joshi	**Member;**	Assistant Professor, Department of Electrical Engineering,	
6	Mr. Pratik Mochi	**Member;**	Assistant Professor, Department of Electrical Engineering,	
7	Mr. Jigar S Sarda	**Member;**	Assistant Professor, Department of Electrical Engineering,	
8	Dr. Bhavik Suthar	**External Member;**	Professor, Government Engineering College, Bhuj	
9	Dr. Sanjay R. Joshi	**External Member;**	Principal Government Engineering College, Valsad	
10	Prof. P. K. Shah	**External Member;**	Professor LDRP, Modasa	
11	Dr. Santosh Vora	**External Member;**	Professor Department of Electrical Engineering Nirma University, Ahmedabad	

Initiation:

Mr. Nilay Patel welcomed all the members of Board of Studies.

Agenda Proceedings & Resolutions:-

Item 14.01: To prepare and review the detailed syllabus of 4th year B.TECH program under CBCS.

Proceedings 14.01:

The detailed syllabus of the courses for B Tech – 4th Year (7thand 8thSemesters) is reviewed.

Suggestions Received:

EE441: Power System Operations and Control

1	Topics on State Estimation & Load forecasting should be incorporated.
2	Syllabus is lengthy.
3	Chapter of transients should be removed or modified
4	Text books and reference books should be swapped.
5	Year of the book can be removed as it seems to be old version of book.
6	Voltage stability part can be removed.
7	Add contingency analysis method
8	Use B.R..Gupta as a text book

EE442: Power System Protection

1	Chapter 9 should be removed.
2	16 hours of transmission can be reduced.
3	Add Earthing of power system

EE443: Electrical Machine Design

1	DC machine design part can be reduced/removed.

EE444: Simulation Lab

1	Hours distribution modify
2	20 hours are more.
3	Keep basic experiments.
4	Experiments of machine are tough for students.
5	It should be "Suggested" list of experiment in syllabus booklet.
6	Fault analysis experiments can be added.
7	Linear equation solution can be added.
8	Multiple faculties should be involved in framing the experiments and conducting lab.
9	It should be kept simple for students.
10	Numerical Methods, RLC series and Parallel operation and its Transients type Practical should be included.

EE471: Power Electronics Applications in Power System (Programme Elective III)

1	Power quality can be removed. SSSC and UPFC can be removed.
2	Chapter 2 should be up to topic "converter transformer testing"
3	Problems in transmission line should be involved.

EE472: Communication Engineering (Programme Elective III)

1	Syllabus designed is fine

EE473: High Voltage Engineering (Programme Elective III)

1	Contents of chapter 07 can be reduced.
2	Remove power quality problems & standard chapter

EE446: Commissioning and Testing of Electrical Equipment

1	Syllabus is lengthy.
2	Chapter of DC machine can be removed.
3	Commissioning part should be more rather than testing.

EE447: Modeling and Control of Renewable Energy Sources

1	Name of the subject should be modified as Renewable Energy Sources and offer as elective subject
2	Content of Solar and Wind should be more.
3	Chapter 5 can be removed.
4	Course can be offered as **programme elective.**

EE448: Major Project

1 Project should be in line with innovation or today's' need.

EE450: Summer Internship II

1 On the same line of summer Internship-I, this course will follow.

EE476: Advances in Power System (Programme Elective IV)

1	Remove probabilistic power flow chapter
2	Add Restructuring in power system

EE477: Internet of Things (Programme Elective IV)

1 Syllabus designed is fine.

EE478: Energy Conservation and Management (Programme Elective IV)

<table>
<tr><td></td><td>1 No Comments

<u>Resolution 14.01:</u>
▪ The suggestions received from BoS members are incorporated and detailed syllabi / T & E Scheme for B Tech – 4th Year (7th and 8th Semesters) effective from 2019-2020 is approved and is attached in Annexure – I</td></tr>
<tr><td>Item 14.02</td><td>To review and approve T&E scheme and syllabus for FY, SY and TY of B. Tech program for ACY 2018-2019 under Choice Based Credit System (CBCS).</td></tr>
<tr><td></td><td><u>Proceedings 14.02:</u>
The teaching and examination scheme of FY, SY and TY of B. Tech program for ACY 2018-2019 under Choice Based Credit System (CBCS) is reviewed.
Suggestions Received:
The second year university electives offered by electrical engineering department should be more in line with current scenario and it must be changed.
<u>EE283: Python for Electrical Engineering (University Elective I)</u>
<table><tr><td>1</td><td>Basics of python programming taught here.</td></tr><tr><td>2</td><td>Various problems can be solved using python programming.</td></tr></table>
<u>EE286: Computer Programming for Electrical Engineering (University Elective I)</u>
<table><tr><td>1</td><td>MATLAB and other software introduced here to solve simple circuit.</td></tr><tr><td>2</td><td>Linear equations, non-linear equations, ODE and matrices should be solved by software.</td></tr></table>
<u>Resolution 14.02:</u>
Above two courses introduce from AY 2018-19, remaining electives can be kept as it is.
For the 2018 entry students, the first year and second year syllabus is reviewed and approved. Physics course PY141.01 is approved in respective BoS and introduced in first year. The T & E scheme is approved for third year and fourth year. It is decided that the total credit must be equal to 192. The T & E scheme for 2018 entry student is attached in Annexure – II</td></tr>
<tr><td>Item 14.03</td><td>To review and approve T&E scheme of M. Tech in Power Electronics for ACY 2018-2019 under CBCS</td></tr>
<tr><td></td><td><u>Proceedings 14.03:</u>
The teaching and examination scheme of M. Tech in Power Electronics for ACY 2018-2019 under CBCS is reviewed.</td></tr>
</table>

	Suggestions Received: ▪ No Suggestion. It is already draft one year back and approved. Attached in **Annexure – III**
Item 14.04	To review T&E Scheme for existing M. Tech program under CBCS for any necessary changes
	Proceedings 14.04: The teaching and examination scheme of M. Tech in EPS for ACY 2018-2019 under CBCS is reviewed. **Suggestions Received:** ▪ No Suggestion. It is already draft one year back and approved. Attached in **Annexure –IV**
Item 14.05	**Proceedings 14.05:** Discussion on effective implementation of Outcome Based Education (OBE) and ICT based Teaching-Learning
	Suggestions Received: ▪ All faculty members must aware about each criteria defined by NBA. ▪ The proper understanding of mapping of POs, PEOs, COs and their assessment tools is required. ▪ Faculty contribution should be increased for publication, funded projects and consultancy. ▪ The usage of open course ware from NPTEL, MIT and BISAC must be increased.
Item 14.06	**Proceedings 14.06:** Introducing the new UG program in Electrical Engineering
	Suggestions Received: Not needed right now.
Item 14.07	**Proceedings 14.07:** Discussion regarding approval from NBA and scope for the improvement
	All invited BoS members congratulated the University, Institute and Department for getting "A" graded from NAAC and KCG as well as for getting NBA for three departments. **Suggestion received:** Cadre ratio and student- teacher ratio along with research in department are most affected factors.
Item 14.08 14.09	**Proceedings 14.08 and 14.09:** To approve the syllabus of M Tech (Newly Introduced Programs) **Resolution** This agenda is duplicated as per agenda number 2 & 3
Item 14.10	**Proceedings 14.10:** To incorporate the revised syllabus of Mathematics and Physics in first year **Resolution**

	The syllabus is already designed and passed in the respective BoS and added to FY syllabus.
Item 14.11	**Proceedings 14.11:** To implement summer internship in 3rd semester of B Tech (Same Credit, same Marks) **Resolution** It is not possible due to D2D students.
	Other Agendas are discussed and listed in additional Items

Additional Items

Sr. No	Agenda	Discussion/Suggestions
1	Review of Exam Question Papers	Question papers of internal and university examination have been reviewed. The briefings about the continuous evaluation, freedom for pedagogy selection for faculty and execution of the practical sessions have been given to external BoS members. The quality of question papers are found satisfactory, but it is suggested to increase the weighatge on the questions that can increase the analytical and logical thinking ability of students. The question papers are as per blooms taxonomy. **Annexure –V and VIII**
2	Review of Result Analysis	The records of result analysis of both internal and university exam are maintained. The results of both the exams are generally discussed and analyzed in the department meeting as soon as the exam gets over and the necessary actions are decided. The YoY comparisons of the results are also discussed and the figures are acceptable. The efforts should be given to again improve the results at all levels. The conduction of the remedial coaching for weaker students has been appreciated by the members. **Annexure –IX**
3	Review of Placement Records	The campus placement of the student needs to be increased. More efforts are required to invite the companies for placement. The aptitude sessions organized for the students are appreciated. It is advised to keep extra technical session to prepare the students for technical skills. **Annexure –X**
4	Review of B. Tech and M. Tech Projects works	The project titles for B. Tech and M. Tech are reviewed and found satisfactory. It is suggested to give more emphasis on hardware based projects at B. Tech level. For M. Tech, the extensive use of licenses software may help the students to solve/reproduce the IEEE journal papers. Paper presentation for M. Tech students should be made compulsory.
5	Review of Feedback from Students, Identification of slow learners, Counseling activities	Review pattern for the students feedback and actions after the feedback have been explained. It is an useful component to improve the performance of teacher and T-L practices. The student counseling activities are very appreciated by all the members.
6	Approval of Examiners'	The examiners panels for B. Tech and M. Tech have been reviewed and approved. The approved examiner panel is attached in **Annexure VII.**

	Panel	
7	Admissions	As per the experts, the Electrical branch interest is not reduced, but the interest towards CE/IT branch is increased, Hence Electrical Branch has to suffer for a complete one cycle.
8.	Audit Course	Electrical students can be offered audit course from CE/IT on IoT. Also Electrical department should offer audit course on arduino. Apart from the regular teaching, by audit course, social activities and by taking parts in sports and co/extra-curricular activities, the holistic development of student will be possible.
9.	Sports, Cultural and Social activities.	The students are encouraged to take part in national and international level sports events. With social activities the bonding and trust with society and CHARUSAT will increase. At least one week cultural programme to be organized by institute.
10.	Quality of research in dissertation and PhD.	For PhD it is essential to publish at least to research papers in scopus indexed journals, hence Quality will be there in research work.
11.	Research Papers and Research funding	Each faculty must publish at least two papers in high impact factor journal. By this the CV of the faulty become strengthen, hence chances of getting grants will increase. More efforts will be put to fetch the research grants. All the faculties are aware about funding agencies.
12.	NPTEL Course	Now as pert AICTE, NPTEL Course will be considered as FDP and according to that API point given to faculty.
13.	Innovation in Pedagogy	The educational goal must be discussed by student and teacher and according to that, A common strategies for class must be made and according to individual student's knowledge, individual strategies should be explained to each student. Learning while doing is best pedagogy.
14	Quality in Education and World Class Universities	By quality consultancy work, more practical knowledge and time-on-task learning strategy accelerates the quality education and movement towards the world class universities.
15	Outcome Based Education and Road-map 2023	The outcome of each course and program must be monitored effectively. If required outcome doesn't achieve in students, more quality efforts must be made. The main focus of road-map 2013 is, placement of eligible students must be reach up to 100%. **Annexure –VI**
16.	Innovative Projects	The BoS members appreciated the department projects. The capacity of the department must be showcased to industry people.

Faculty Board Meeting:

Faculty board meeting was held at conference room, DEPSTAR College.

The inputs given by expert of electrical field are as under.

1. Right now the interest of students are towards the computer related branch, hence the number of students in the electrical or other branch are less.

2. Day by day the students in A group of 12th standards are decreasing due to lack of interest in mathematics subject. So students must be motivated to take interest in maths subject right from school level.
3. Experts gave their opinion that, each branch has its cycle depending on market scenario. So within two years, again the interest f students towards the core branch will increase.

Mr. Nilay A. Patel
Chairman
Board of Studies (EE)

HEAD OF DEPARTMENT
Dept. of Electrical Engg.
Chandubhai S. Patel Institute of Technology
At. & Po. Changa-388421., Ta. Petlad,
Dist. : Anand. (Gujarat)

14A

Annexure I: TEACHING & EXAMINATION SCHEME FOR B TECH PROGRAMME IN ELECTRICAL ENGINEERING (CBCS) Entry Year: 2016

CHAROTAR UNIVERSITY OF SCIENCE & TECHNOLOGY (CHARUSAT)											
TEACHING & EXAMINATION SCHEME FOR B TECH PROGRAMME IN ELECTRICAL ENGINEERING (CBCS) Entry Year: 2016											
Level	**Course Code**	**Course Title**	**Teaching Scheme**				**Examination Scheme**				
			Contact Hours			**Credit**	**Theory**		**Practical**		**Total**
			Theory	**Practical/Tutorial**	**Total**		**Internal**	**External**	**Internal**	**External**	
Level 1	HS101A- HS106A	A Course on Liberal Arts		2	2	2			50	50	**100**
	MA141	Engineering Mathematics I	4	1 (T)	4	4	30	70			**100**
	ME141	Engineering Graphics	2	4	6	4	30	70	50	50	**200**
	PY141	Engineering Physics	3	2	5	4	30	70	25	25	**150**
	CL141	Engineering Mechanics	4	2	6	5	30	70	25	25	**150**
	ME142	Workshop Practices	0	2	2	1			25	25	**50**
	Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra- curricular &co curricular				11						
					36	**20**					**750**
	HS 121A	English Language and Literature	1	1	2	2	25	25	25	25	**100**
	MA142	Engineering Mathematics II	4	1 (T)	4	4	30	70			**100**
	CL142	Environmental Science	2		2	2	30	70			**100**
	IT141	Fundamentals of Computer Programming	3	2	5	4	30	70	25	25	**150**
	ME143	Basics of Civil & Mechanical Engineering	4	2	6	5	30	70	25	25	**150**
	EE141	Basics of Electronics & Electrical Engineering	4	2	6	5	30	70	25	25	**150**
	Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra- curricular & co curricular				11						
					36	**22**					**750**

	HS122A/HS131A	Values and Ethics/Philosophy	2		2	2	30	70			**100**
	MA241	Engineering Mathematics III	4		4	4	30	70			**100**
	EE241	Analog and Digital Electronics	4	2	6	5	30	70	25	25	**150**
	EE242	Circuit Theory	4	2	6	5	30	70	25	25	**150**
	EE243	Electrical Measurements and Industrial Instrumentation	4	2	6	5	30	70	25	25	**150**
	XXXXX	University Elective- I	2		2	2	30-70				**100**
	Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra- curricular & co curricular				10						
					36	**23**					**750**
Level 2	HS123.01A/ HS 127.01A/ HS133A	Critical Thinking and Logic/ Communication skills 2/ Creativity, Problem Solving and Innovation	2		2	2	30-70				**100**
	EE244	Electrical Power Generation and its Economics	4		4	4	30	70			**100**
	EE245	Control Systems	4	2	6	5	30	70	25	25	**150**
	EE246	Microprocessor & Microcontrollers	4	2	6	5	30	70	25	25	**150**
	EE247	Transformers and Induction Machines	4	4	8	6	30	70	50	50	**200**
	XXXXX	University Elective- II	2		2	2	30-70				**100**
	Assignment Practices/Student counseling/Remedial classes/Library/Sports /Extra- curricular & co-curricular				8						
					36	**24**					**800**

Level 3	HS124.01A	Professional Communication		2	2	2			30	70	**100**
	EE341	Electrical Power Transmission and Distribution	4		4	4	30	70			**100**
	EE342	Synchronous and DC Machines	4	4	8	6	30	70	50	50	**200**
	EE343	Power Electronics & Drives I	4	2	6	5	30	70	25	25	**150**
	EE344	Minor Project I	0	4	4	2			50	50	**100**
	EE345	Electrical Product Survey	0	2	2	2			50	50	**100**
	EE371-EE372	Programme Elective I	4	2	6	5	30	70	25	25	**150**
	EE350	Summer Internship I	0	0	0	3			75	75	**150**
	Assignment Practices/ Student counseling/ Remedial classes/ Library/ Sports/ Extra- curricular & co curricular				4						
					36	**29**					**1050**
	HS134A	Contributor Personality Development		2	2	2			30	70	**100**
	EE346	Digital Signal Processing	3	2	5	4	30	70	25	25	**150**
	EE347	Programmable Logic Controllers and Industrial Automation	2	4	6	4	30	70	50	50	**200**
	EE348	Power Electronics & Drives II	3	2	5	4	30	70	25	25	**150**
	EE349	Fault Analysis and Switchgear	4	2	6	5	30	70	25	25	**150**
	EE360	Minor Project II	0	4	4	2			50	50	**100**
	EE376-EE377	Programme Elective II	3	2	5	4	30	70	25	25	**150**
	Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra- curricular & co curricular				3						
					36	**25**					**1000**

Level 4	EE441	Power System Operations and Control	4	2	6	5	30	70	25	25	**150**
	EE442	Power System Protection	4	2	6	5	30	70	25	25	**150**
	EE443	Electrical Machine Design	4	2	6	5	30	70	25	25	**150**
	EE444	Simulation Lab	0	4	4	2			50	50	**100**
	EE450	Summer Internship II				3			75	75	**150**
	EE471-EE473	Programme Elective III	4	2	6	5	30	70	25	25	**150**
	Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra-curricular & co curricular				8						
					36	**25**					**850**
	EE446	Commissioning and Testing of Electrical Equipment	4	2	6	5	30	70	25	25	**150**
	EE447	Modeling and Control of Renewable Energy Sources	4	2	6	5	30	70	25	25	**150**
	EE448	Major Project			18	9			250	250	**500**
	EE476-EE478	Programme Elective IV	4	2	6	5	30	70	25	25	**150**
					36	**27**	**90**	**210**	**325**	**325**	**950**

CHAROTAR UNIVERSITY OF SCIENCE & TECHNOLOGY (CHARUSAT)											
		Hours				Credits	Marks				
			Theory	Practical	Total						
					288	192					6900

LIST OF ELECTIVES FOR B TECH PROGRAMME IN ELECTRICAL ENGINEERING

University Electives for Level 2

University Elective 1		University Elective 2	
EE281	Electrical Engineering Materials	**EE282**	Electrical Power Utilisation and Traction

Electives for Level 3

	PROGRAMME ELECTIVE 1	PROGRAMME ELECTIVE 2	
EE371	Advanced Microcontrollers	**EE376**	Special Electrical Machines and Applications
EE372	VLSI Technology & Design	**EE377**	Embedded Systems

Electives for Level 4

	PROGRAMME ELECTIVE 3	PROGRAMME ELECTIVE 4	
EE471	Power Electronics Applications in Power System	**EE476**	Advances in Power System
EE472	Communication Engineering	**EE477**	Internet of Things
EE473	High Voltage Engineering	**EE478**	Energy Conservation and Management

University Elective I & II:

(Will be available in a Common Slot)

Occupational Health and Safety, IPR, Regulatory Affairs, Contract Management,

Energy Management, Research Methodology, Entrepreneurship, Project Management, First AID and Life Support

Risk Management, Disaster Management, Scientific Instrumentation & Measurement, Operation Research,
Business Environment, Quality Assurance, Computer Programming, Numerical Analysis, Web Designing, Cyber Security etc

M&V Patel Department of Electrical Engineering
Faculty of Technology & Engineering, CHARUSAT
14th Board of Studies Meeting

Date : July 28, 2018, Saturday
Time : 10:00 am onwards
Venue: Room No: 102, HOD (EE), CSPIT, CHARUSAT Campus

1	Mr. Nilay Patel	**Chairman;**	Assistant Professor & Head, Department of Electrical Engineering,	
2	Dr. Kartik Pandya	**Member;**	Professor, Department of Electrical Engineering,	
3	Mr. Maulik Shah	**Member;**	Assistant Professor Department of Electrical Engineering,	
4	Mr. Mhir Bhatt	**Member;**	Assistant Professor Department of Electrical Engineering,	
5	Mr. Jivanadhar Joshi	**Member;**	Assistant Professor Department of Electrical Engineering,	
6	Mr. Jigar Sarda	**Member;**	Assistant Professor Department of Electrical Engineering,	
7	Mr. Pratik Mochi	**Member;**	Assistant Professor, Department of Electrical Engineering,	
8	Dr. Sanjay R. Joshi	**External Member;**	Principal Government Engineering College, Valsad	
9	Dr. Bhavik Suthar	**External Member;**	~~Principal~~ Professor in EE Government Engineering College, bhuj	
10	Dr. Santosh Vora	**External Member;**	Professor Department of Electrical Engineering Nirma University, Ahmedabad	
11	Mr. Sanjay Mahagaokar	**External Member;**	Dy General Manager Engineering and Technology, Rotomag Power Drives. Napa Talpad.	
12	Prof. Prakash K. Shah	**External Member;**	Professor Department of Electrical Engineering LDRP, Ahmedabad	

Minutes –16th Board of Studies Meeting
M&V Patel Department of Electrical Engineering
Faculty of Technology & Engineering, CHARUSAT

Date : July 04, 2020, Saturday
Time : 10:00 am onwards
Venue: Online (Google Meet Platform)

The 16th meeting of Board of Studies, M&V Patel Department of Electrical Engineering, Faculty of Technology and Engineering (FTE), Charotar University of Science and Technology (CHARUSAT) was held on 04/07/2020 at 10:00 am. On online platform. Following members were present:

1	Dr. Nilay Patel	**Chairman;**	Assistant Professor & Head, Department of Electrical Engineering,
2	Dr. Kartik Pandya	**Member;**	Professor, Department of Electrical Engineering,
3	Mr. Maulik Shah	**Member;**	Assistant Professor Department of Electrical Engineering,
4	Mr. Mhir Bhatt	**Member;**	Assistant Professor Department of Electrical Engineering,
5	Mr. Jivanadhar Joshi	**Member;**	Assistant Professor, Department of Electrical Engineering,
6	Mr. Soaib Saiyad	**Member;**	Assistant Professor, Department of Electrical Engineering,
7	Mr. Jigar S Sarda	**Invitee Member;**	Assistant Professor, Department of Electrical Engineering,
8	Dr. Praghnesh Bhatt	**External Member;**	Associate Professor, SoT, PDPU, Gandhinagar
9	Dr. Naran Pindoriya	**External Member;**	Associate Professor, IIT, Gandhinagar.
10	Dr. Vijay K Shah	**External Member;**	Vice President, Senior Principal Engineer-Electrification Business. ABB India Ltd, Vadodara
11	Dr. Santosh Vora	**External Member;**	Professor Department of Electrical Engineering Nirma University, Ahmedabad

Initiation:

Dr. Nilay Patel welcomed all the members of Board of Studies. The minutes of the 15th Board of Studies meeting held on August 31, 2019 was summarized.

Agenda Proceedings & Resolutions: -

Item 16.01	To review and approve the Teaching & Examination scheme for B. Tech. and detailed syllabus of 5th and 6th semesters (Third Year) B. Tech. (CBCS) for Electrical Engineering, applicable for 2019-20 (Admission) Batch. (Total 176 credits)
	Proceedings 16.01: The teaching and examination scheme for all the semesters of B. Tech. CBCS courses effective from July- 2019 under Choice Based Credit System (CBCS) is prepared and reviewed. Following Revisions in B Tech programme are proposed. ▪ In 2nd year, there is no change in teaching and evaluation scheme decided in last BoS for AY2020-21, except HSS and Mathematics courses. ▪ Courses for B Tach Third year syllabus (July 2019 Entry) are discussed and finalized. ▪ In 2nd year, following one additional university elective courses are introduced for B Tech effective from AY2020-21. CL283: SDG Handprint Laboratory (For UG Semester-3) **Resolution 16.01:** The suggestions received from BoS members are incorporated and T & E Scheme for B Tech July 2019 Intake is approved and is attached in **Annexure – I**
Item 16.02	To review and approve Teaching and Examination scheme and syllabus for Final Year B. Tech program for 2018-2019 (Admission) Batch under Choice Based Credit System (CBCS).
	Proceedings 16.02: The teaching and examination scheme of Final Year B. Tech program for 2018-2019 under Choice Based Credit System (CBCS) is reviewed. **Suggestions Received:** ▪ No need to revise it. **Resolution 16.02:** Whatever the T & E scheme was applied for AY 2019-2020 for final year, the same scheme will be applicable for AY 2021-22. (The same scheme is applicable for AY 2020-21 Final year students, except HSS Courses.) The T & E scheme for Final Year B. Tech. (2018 entry students) is attached in **Annexure – II**
Item 16.03	**For Discussion**: To review and approve T&E scheme and syllabus for FY, SY and TY of B. Tech program for ACY 2020-2021 under Choice Based Credit System (CBCS). Particularly for physics,

	mathematics and HSS department.
	Proceedings 16.03: T&E scheme and syllabus for FY, SY and TY of B. Tech program for ACY 2020-2021 under Choice Based Credit System (CBCS) are reviewed. Particularly for physics, mathematics and HSS department. ▪ In 1st year, there is no change in teaching and evaluation scheme for AY2020-21, except HSS, Physics and Environmental Science courses • In first year B Tech, Humanities (HSS), Physics and environmental Science courses are revised in introduced with effective from AY 2020-21 1. HS101.02A Communicative English (Sem-1) 2. HS201.02A-HS210.02A (Courses on liberal Arts) (Sem-2) 3. CL144B Environmental Science course introduce in place of CL142.01 (will be offered in Sem-1) 4. PY142 Engineering Physics-I course introduce. (Sem-1) 5. PY143 Engineering Physics-II course introduce. (Sem-2) • In second year B Tech, Mathematics course is revised and replaced with effective from AY 2020-21 MA252 Advanced Engineering Mathematics (Sem-3) • In second year B Tech, Humanities (HSS) courses are revised in introduced with effective from AY 2020-21 1. HS121.02A Creativity, Problem Solving and Innovation (Sem-3) 2. HS111.02A Human Values and Professional Ethics (Sem-4) • In third Year B Tech, Humanities (HSS) courses are revised in introduced with effective from AY 2020-21 1. HS131.02A Communication and Soft Skills (Sem-5) 2. HS132.02A Contributory Personality Development (Sem-6) **Resolution 16.03:** The suggestions received from BoS members are incorporated and detailed syllabi / T & E Scheme for B Tech is as per **Annexure I** (July 2019 Admission/Entry), **Annexure III** (July 2020 Admission/Entry) and **Annexure II** (July 2018 Admission/Entry).
Item 16.04	To review and approve T&E scheme for all the semesters of M. Tech. (Electrical Power System) CBCS courses. Approval of online or off-campus B Tech & M Tech. Classes.

	Proceedings 16.04: The teaching and examination scheme for all the semesters of M. Tech. (Electrical Power System) CBCS courses effective from July- 2019 under Choice Based Credit System (CBCS) is reviewed. **Suggestions Received:** ▪ As per last academic council meeting, first year university elective course is dropped. **Resolution 16.04:** The suggestions received from BoS members are incorporated in T & E Scheme for M. Tech. (Electrical Power System) and T & E Scheme of M Tech (EPS) July 2020 Intake is approved and attached in **Annexure – IV** The classes of B Tech and M Tech can be taken online or off-campus mode.
Item 16.05	Analysis and discussion on the semester end results of the students and steps taken for the remedial actions
	Proceedings 16.05: The records of result analysis of both internal and university exams are maintained. The results of both the exams are generally discussed and analysed in the department meeting as soon as the exam gets over and the necessary actions are decided. The YoY comparisons of the results are also discussed and the figures are acceptable. The efforts should be given to again improve the results at all levels. The conduction of the remedial coaching for weaker students has been appreciated by the members. **Annexure –V**
Item 16.06	Analysis of campus placement and discussion of related activities to enhance them further. (Annexure-VI)
	Proceedings 16.06: The campus placement of the student needs to be increased. More efforts are required to invite the companies for placement. The aptitude sessions organized for the students are appreciated. It is advised to keep extra technical session to prepare the students for technical skills. **Annexure –VI**
Item 16.07	To add new University Elective and revise existing University Electives from Electrical Engineering Department for UG Program.
	Proceedings 16.07: Review the title of the UE courses offered by Electrical Engineering department and discussion on new UE course from EE department under Choice Based Credit System (CBCS). (Applicable from AY 2021-22) **Suggestions Received:** ▪ **EE284 Python Programming** replaces EE283 Python for Electrical Engineering course. (UE Sem-3)

	▪ **EE287 MATLAB Programming** replaces EE286 Computer Programming for Electrical Engineering. (UE Sem-4) ▪ **EE288 Maintenance of Household Apparatus** is introduced as new UE course from Electrical Engineering Department in Sem 4. **Resolution 16.07:** The suggestions received from BoS members are incorporated in T & E Scheme for B. Tech. (July 2020 Admission Batch, Effective from AY 2021-22) and is attached in **Annexure – III**
Item 16.08	To review and approve newly added and revised Elective courses of third year and final year for 2019-20 Admission batch under Choice Based Credit System (CBCS). Here main task to streamline the courses related to AI, Smart grid, machine learning etc.
	Proceedings 16.08: The syllabus for TY and Final Year of B. Tech. Elective courses effective from July- 2019 Admission batch under Choice Based Credit System (CBCS) is prepared and reviewed. Following Suggestions on Elective courses in B Tech programme are proposed. ▪ In 3rd and 4th year, comprehensive and contemporary elective courses are introduced for providing more choices to the students. ▪ The following courses that are in line with the current industry requirement and skill based are included in 3rd level and 4th level of curriculum. The listing is as under. The major topics of courses are discussed but detailed syllabus for 4th level will be prepared in next stage. ▪ The newly introduced electives are in track/stream of electives offered in previous semesters and hence students following track suggested by department will be able to get detailed knowledge of the selected stream. The may be given minor in following streams. ➢ **Python for Data Analytics** – **Machine Learning Fundamentals** – **Deep Learning Applications and AI** falls under one stream of electives. (Offered in 5th, 6th and 7th semester respectively.) ➢ Optimization Techniques ➢ Smart Grid Technology, IoT and Industry 4.0 ➢ Electric Vehicle Technologies The specialized courses taught from specialized faculties. Also, hands on practice needed for students. **Resolution 16.08:** The suggestions received from BoS members are incorporated and T & E Scheme for B. Tech. July 2019 and July 2020 Intake is approved and is attached in **Annexure – I & III**

Item 16.09

Preparation, Discussion, and approval of the Elective Courses (University, Institute, and Program Electives)

Proceedings 16.09:

T&E scheme and syllabus for First Year M Tech (EE) program for ACY 2020-2021 under Choice Based Credit System (CBCS) are reviewed. Particularly for HSS department.

In first year M Tech, Humanities (HSS) courses are revised in introduced with effective from AY 2020-21

1. HS141.02A Foreign Languages (French) (Sem-1)
2. HS105.02A Academic Speaking and Presentation Skills (Sem-1)
3. HS106.02A Academic Writing (Sem-2)

Resolution 16.09:

The suggestions received from BoS members are incorporated in T & E Scheme for M. Tech. (Electrical Power System). It is approved and is attached in **Annexure – IV**

Item 16.10

For Discussion:

To approve the PhD Synopsis of research scholar

Proceedings 16.10:

Department of Electrical Engineering, Faculty of Technology & Engineering has received following synopsis of research scholar during 2019-20.

Sr. No.	Research Scholar	Research Topic
1	Dharmesh Dabhi (16DREE007)	Developing Metaheuristic Optimization Techniques For Optimal Scheduling of Distributed Energy Resources on Smart Grid Environment.

Synopsis and panel referees of research scholars are placed before the BoS members.

Resolution- 16.10

Board of Studies members approved the synopsis & panel referees of Research Scholar(s) for further process.

Item 16.11

Proceedings 16.11:

Giving information about seat reduction in B. Tech. (Electrical) and closure of M. Tech. (PE) Programme.

From AY 2020-21, B Tech Electrical Engineering seats reduced to 60.
From AY 2020-21 M Tech (Power Electronics) program is closed.

Item 16.12

Proceedings 16.12:

Discussion on minor specialization in the EMERGING AREAS viz., Artificial Intelligence (AI), Internet of Things (IoT), Block chain, Robotics, Quantum Computing, Data Sciences, Machine Learning etc. in B Tech Electrical Engineering was done.

	All the members of BoS appreciated this move towards recent era skill needed.
	Resolution BoS chairman is given power to decide the additional 18 to 20 credit course as per latest trends and can be implemented from 4th semester of AY2020-21.

Additional Items

Sr. No	Agenda	Discussion/Suggestions
1	Review of Exam Question Papers	Question papers of internal and university examination have been reviewed. The briefings about the continuous evaluation, freedom for pedagogy selection for faculty and execution of the practical sessions have been given to external BoS members. The quality of question papers are found satisfactory, but it is suggested to increase the weightage on the questions that can increase the analytical and logical thinking ability of students. The question papers are as per blooms taxonomy. **Annexure –VII and VIII**
2	Discussion on effective implementation of Outcome Based Education (OBE) and ICT based Teaching-Learning	**Suggestions Received:** ▪ All faculty members must aware about each criteria defined by NBA and NAAC. ▪ The proper understanding of mapping of POs, PEOs, COs and their assessment tools is required. ▪ Faculty contribution should be increased for publication, funded projects and consultancy. ▪ The usage of open course from NPTEL, MIT and BISAC must be increased. Google classroom should be used as ICT platform.
3	Review Research Activities, Projects, Consultancy etc.	Every faculty must try to bring funded research projects and consultancy. Relation with industry must be made very strong Explore the new dimensions about research
4	Review of B. Tech and M. Tech Projects works	The project titles for B. Tech and M. Tech are reviewed and found satisfactory. It is suggested to give more emphasis on hardware based projects at B. Tech level. For M. Tech, the extensive use of licenses software may help the students to solve/reproduce the IEEE journal papers. Paper presentation for M. Tech students should be made compulsory.
5	Review of Feedback from Students, Identification of slow learners, Counseling activities	Review pattern for the students' feedback and actions after the feedback have been explained. It is a useful component to improve the performance of teacher and T-L practices. The student counseling activities are very appreciated by all the members.
6	Approval of Examiners' Panel	The examiners panels for B. Tech and M. Tech have been reviewed and approved. The approved examiner panel is attached in **Annexure IX**

7	Admissions	As per the experts, the Electrical branch interest is not reduced, but the interest towards CE/IT branch is increased, Hence Electrical Branch has to suffer for a complete one cycle.
8.	Audit Course	Electrical students can be offered audit course from CE/IT on IoT. Also Electrical department should offer audit course on Arduino. Apart from the regular teaching, by audit course, social activities and by taking parts in sports and co/extra-curricular activities, the holistic development of student will be possible.
9.	Sports, Cultural and Social activities.	The students are encouraged to take part in national and international level sports events. With social activities, the bonding and trust with society and CHARUSAT will increase. At least one week cultural programme to be organized by institute.
10.	Quality of research in dissertation and PhD. Panel of Ph D Supervisors	For PhD it is essential to publish at least to research papers in Scopus indexed journals, hence Quality will be there in research work. For PhD mentor or co-guide can be invited for research scholars of the department.
11.	Research publications, proposals and grants	Each faculty must publish at least two papers in high impact factor journal. By this the CV of the faulty become strengthen, hence chances of getting grants will increase. More efforts will be put to fetch the research grants. All the faculties are aware about funding agencies.
12.	NPTEL Course	Now as pert AICTE, NPTEL Course will be considered as FDP and according to that API point given to faculty.
13.	Innovation in Pedagogy	The educational goal must be discussed by student and teacher and according to that, A common strategies for class must be made and according to individual student's knowledge, individual strategies should be explained to each student. Learning while doing is best pedagogy.
14	Quality in Education and World Class Universities	By quality consultancy work, more practical knowledge and time-on-task learning strategy accelerates the quality education and movement towards the world class universities.
15	Outcome Based Education and Road-map 2023	The outcome of each course and program must be monitored effectively. If required outcome doesn't achieve in students, more quality efforts must be made. The main focus of road-map 2023 is, placement of eligible students must be reach up to 100%. **Annexure –X**
16.	Innovative Projects	The BoS members appreciated the department projects. The capacity of the department must be showcased to industry people.

Faculty Board Meeting:

Faculty board meeting was held at online platform of Google Meet at 12.00 noon.

The inputs given by expert of electrical field are as under.

1. Right now the interest of students is towards the computer related branch, hence the number of students in the electrical or other branch are less.

2. Dr. Praghnesh bhatt and Dr. Santosh Vora, FB Member, appreciated the course covered in curriculum. They suggested to introduce the students clubs at Electrical Engineering Department.
3. Dr. Santosh Vora insist on the inter institute collaboration.
4. Experts gave their opinion that, each branch has its cycle depending on market scenario. So within two years, again the interest of students towards the core branch will increase.
5. BoS of the respective branch discussed and agreed upon a common point to offer a minor degree in an emerging area as per the guideline of AICTE.
6. Additional 18 to 20 credit courses offered along with B. Tech. curriculum to earn a minor degree.
7. Concern board authorized the chairman of BoS of Civil Engineering, Mechanical Engineering, and Electrical Engineering to initiate the action related to offering minor specialization in emerging areas and subsequently inform the board after the finalization of course structure and syllabi.

Dr. Nilay A. Patel
Chairman
Board of Studies (EE)

HEAD OF DEPARTMENT
Dept. of Electrical Engg.
Chandubhai S. Patel Institute of Technology
At. & Po. Changa-388421., Ta. Petlad,
Dist. : Anand. (Gujarat)

CHAROTAR UNIVERSITY OF SCIENCE & TECHNOLOGY (CHARUSAT)

16.01 Annexure I TEACHING & EXAMINATION SCHEME FOR B TECH PROGRAMME IN ELECTRICAL ENGINEERING (CBCS) Entry Year: 2019

Level	Course Code	Course Title	Teaching Scheme					Examination Scheme				
			Contact Hours				Credit	Theory		Practical		Total
			Theory	Practical	Tutorial	Total		Internal	External	Internal	External	
Level 1	HS101.01 A-HS110.01A	A Course on Liberal Arts (Elective I)		2	0	2	2			30	70	**100**
	MA143	Engineering Mathematics I	4	0	1	5	4	30	70	0	0	**100**
	ME146	Engineering Graphics	2	2	1	5	3	30	70	25	25	**150**
	PY141.01	Engineering Physics	3	2	0	5	4	30	70	25	25	**150**
	CL143	Engineering Mechanics	3	2	1	6	4	30	70	25	25	**150**
	ME142	Workshop Practices	0	2		2	1			25	25	**50**
		Assignment Practices/Student counselling/Remedial classes/Library/Sports/Extra curricular & cocurricular				11						
			12	**10**		**36**	**18**	**120**	**280**	**130**	**170**	**700**
	HS126.01 A	Communication Skills -1	2		0	2	2	30	70			**100**
	CL142.01	Environmental Science		2	0	2	2			30	70	**100**
	MA144	Engineering Mathematics II	4	0	1	5	4	30	70			**100**
	IT143	Fundamentals of Computer Programming	2	2	0	4	3	30	70	25	25	**150**
	ME147	Basics of Civil & Mech Engineering	3	2	0	5	4	30	70	25	25	**150**
	EE145	Basics of Electronics & Electrical Engineering	3	2	0	5	4	30	70	25	25	**150**
		Assignment Practices/Student counselling/Remedial classes/Library/Sports/Extra curricular & cocurricular				13						
			14	**8**		**36**	**19**	**150**	**350**	**105**	**145**	**750**

CHAROTAR UNIVERSITY OF SCIENCE & TECHNOLOGY (CHARUSAT)

16.01 Annexure I TEACHING & EXAMINATION SCHEME FOR B TECH PROGRAMME IN ELECTRICAL ENGINEERING (CBCS) Entry Year: 2019

Level	Course Code	Course Title	Teaching Scheme					Examination Scheme				
			Contact Hours				Credit	Theory		Practical		Total
			Theory	Practical	Tutorial	Total		Internal	External	Internal	External	
Level 2	HS121.02A	Creativity, Problem Solving and Innovation		2		2	2	0	0	30	70	**100**
	MA252	Advanced Engineering Mathemathics	4	0	0	4	4	30	70			**100**
	EE251	Analog and Digital Electronics	3	2	0	5	4	30	70	25	25	**150**
	EE252	Circuit Theory	3	2	0	5	4	30	70	25	25	**150**
	EE243	Electrical Measurements and Industrial Instrumentation	4	2	0	6	5	30	70	25	25	**150**
	XXXXX	University Elective- I		2	0	2	2			30	70	**100**
		Assignment Practices/Student counselling/Remedial classes/Library/Sports/Extra curricular &cocurricular				12						
			14	**10**	**0**	**36**	**21**	**120**	**280**	**135**	**215**	**750**
	HS111.02A	Human Values and professional Ethics		2	0	2	2			30	70	**100**
	EE254	Electrical Power Generation and its Economics	3	0	0	3	3	30	70			**100**
	EE255	Control Systems	3	2	0	5	4	30	70	25	25	**150**
	EE246	Microprocessor & Microcontrollers	4	2	0	6	5	30	70	25	25	**150**
	EE247	Transformers and Induction Machines	4	4	0	8	6	30	70	50	50	**200**
	XXXXX	University Elective- II		2	0	2	2			30	70	**100**
		Assignment Practices/Student counselling/Remedial classes/Library/Sports/Extra curricular & cocurricular				10						
			14	**12**		**36**	**22**	**120**	**280**	**160**	**240**	**800**

CHAROTAR UNIVERSITY OF SCIENCE & TECHNOLOGY (CHARUSAT)

16.01 Annexure I TEACHING & EXAMINATION SCHEME FOR B TECH PROGRAMME IN ELECTRICAL ENGINEERING (CBCS) Entry Year: 2019

Level	Course Code	Course Title	Teaching Scheme					Examination Scheme				
			Contact Hours				Credit	Theory		Practical		Total
			Theory	Practical	Tutorial	Total		Internal	External	Internal	External	
Level 3	HS131.02A	Communication and Soft Skills		2	0	2	2			30	70	**100**
	EE351	Electrical Power Transmission and Distribution	3	0	0	3	3	30	70	0	0	**100**
	EE342	Synchronous and DC Machines	4	4	0	8	6	30	70	50	50	**200**
	EE353	Power Electronics & Drives I	3	2	0	5	4	30	70	25	25	**150**
	EE344	Minor Project I	0	4	0	4	2			50	50	**100**
	EE345	Electrical Product Survey	0	2	0	2	2			50	50	**100**
	EE371-EE375	Programme Elective I	4	2	0	6	5	30	70	25	25	**150**
	EE350	Summer Internship I	0	0	0	0	3			75	75	**150**
		Assignment Practices/Student counselling/Remedial classes/Library/Sports/Extra curricular & cocurricular				6						
			14	**16**	**0**	**36**	**27**	**120**	**280**	**305**	**345**	**1050**
	HS132.02A	Contributory Personality Development		2	0	2	2			30	70	**100**
	EE346	Digital Signal Processing	3	2	0	5	4	30	70	25	25	**150**
	EE347	Programmable Logic Controllers and Industrial Automation	2	4	0	6	4	30	70	50	50	**200**
	EE348	Power Electronics & Drives II	3	2	0	5	4	30	70	25	25	**150**
	EE349	Fault Analysis and Switchgear	4	2	0	6	5	30	70	25	25	**150**
	EE360	Minor Project II	0	4	0	4	2	0	0	50	50	**100**
	EE376-EE381	Programme Elective II	3	2	0	5	4	30	70	25	25	**150**
		Assignment Practices/Student counselling/Remedial classes/Library/Sports/Extra curricular & cocurricular				3						
			15	**18**		**36**	**25**	**150**	**350**	**230**	**270**	**1000**

CHAROTAR UNIVERSITY OF SCIENCE & TECHNOLOGY (CHARUSAT)												
16.01 Annexure I TEACHING & EXAMINATION SCHEME FOR B TECH PROGRAMME IN ELECTRICAL ENGINEERING (CBCS) Entry Year: 2019												
Level	**Course Code**	**Course Title**	**Teaching Scheme**					**Examination Scheme**				
			Contact Hours				**Credit**	**Theory**		**Practical**		**Total**
			Theory	**Practical**	**Tutorial**	**Total**		**Internal**	**External**	**Internal**	**External**	
Level 4	EE441	Power System Operations and Control	4	2	0	6	5	30	70	25	25	**150**
	EE442	Power System Protection	4	2	0	6	5	30	70	25	25	**150**
	EE443	Electrical Machine Design	4	2	0	6	5	30	70	25	25	**150**
	EE444	Simulation Lab	0	4	0	4	2			50	50	**100**
	EE450	Summer Internship II			0		3			**75**	**75**	**150**
	EE481/EE482/EE483/EE446.01/EE447.01/EE476.01	Programme Elective III	3	2	0	5	4	30	70	25	25	**150**
		Assignment Practices/Student counselling/Remedial classes/Library/Sports/Extra curricular &cocurricular				9						
			15	**12**	**0**	**36**	**24**	**120**	**280**	**225**	**225**	**850**
	EE458	Major Project	**0**	**36**	**0**	**36**	**20**			**400**	**400**	**800**

CHAROTAR UNIVERSITY OF SCIENCE & TECHNOLOGY (CHARUSAT)

16.01 Annexure I TEACHING & EXAMINATION SCHEME FOR B TECH PROGRAMME IN ELECTRICAL ENGINEERING (CBCS) Entry Year: 2019

Level	Course Code	Course Title	Teaching Scheme					Examination Scheme				
			Contact Hours				Credit	Theory		Practical		Total
			Theory	Practical	Tutorial	Total		Internal	External	Internal	External	

CHAROTAR UNIVERSITY OF SCIENCE & TECHNOLOGY (CHARUSAT)

		Hours					Credits	Marks				
		Total Teaching Hrs	Theory	Practical		Total						
		0	98	122		288	176	900	2100	1690	2010	6700

LIST OF ELECTIVES FOR B TECH PROGRAMME IN ELECTRICAL ENGINEERING

University Electives for Level 2

	Univestity Elective 1	Univestity Elective 2	
EE283	Python for Electrical Engineering	EE286	Computer Programming for Electrical Engineering

Electives for Level 3

	PROGRAMME ELECTIVE 1 (4+2)	PROGRAMME ELECTIVE 2 (3+2)	
EE371	Advanced Microcontrollers	EE376	Special Electrical Machines and Applications
EE372	VLSI Technology and Design	EE377	Embedded Systems
EE373	Optimization Techniques	EE378	Power Electronics Applications in Power System
EE374	Distributed Generation and Microgrid	EE379	High Voltage Engineering
EE375	Energy Conservation, Audit and Management	EE380	Internet of Things
		EE381	Hybrid and Electric Vehicles

Electives for Level 4

	PROGRAMME ELECTIVE 3 (3+2)
EE481	Industry 4.0
EE482	Smart Grid Technologies and Applications
EE483	Communication Engineering
EE446.01	Commissioning and Testing of Electrical Equipments
EE447.01	Modeling and Control of Renewable Energy Sources
EE476.01	Advances in Power System

CHARUSAT
CHAROTAR UNIVERSITY OF SCIENCE AND TECHNOLOGY

Head Electrical CHARUSAT <hod.ee@charusat.ac.in>

Approval of MoM of BoS

9 messages

Head Electrical CHARUSAT <hod.ee@charusat.ac.in> Wed, Jul 8, 2020 at 3:04 PM
To: Praghnesh.Bhatt@sot.pdpu.ac.in, Naran Pindoriya <naran@iitgn.ac.in>, Vijay Shah <vijay.shah@in.abb.com>, Prof Santosh Vora <santosh.vora@nirmauni.ac.in>

Respected sir,
Herewith I am sending you the Minutes of BoS meeting held on 4th July 2020.
You are requested to approve the same.
Regards,

--

Dr. Nilaykumar A. Patel
Assistant professor & Head,
Electrical Engineering Dept.
Chandubhai S. Patel Institute of Technology,
CHARUSAT,
Changa. 388421
Ta: Petlad.
Phone:02697 265041

My Web Page: https://sites.google.com/charusat.ac.in/nilaypatel/home

Minutes 16th BOS Meeting_04_07_2020.zip
469K

Praghnesh Bhatt <Praghnesh.Bhatt@sot.pdpu.ac.in> Thu, Jul 9, 2020 at 1:25 PM
To: Head Electrical CHARUSAT <hod.ee@charusat.ac.in>

Dear Sir

The MoM for BoS is approved from my end.

Regards

Dr Praghnesh Bhatt
Associate Professor & Head
Department of Electrical Engineering
School of Technology, PDPU
Ext: 079-2327-5664
Mo: +91-7567513461/+91-9427339896
https://scholar.google.com/citations?user=KpSDpKAAAAAJ&hl=en&oi=sra
https://orcid.org/0000-0002-0262-9991
https://www.scopus.com/authid/detail.uri?authorId=35589405600
https://app.webofknowledge.com/author/#/record/2378176

From: Head Electrical CHARUSAT [hod.ee@charusat.ac.in]
Sent: Wednesday, July 08, 2020 3:04 PM
To: Praghnesh Bhatt; Naran Pindoriya; Vijay Shah; Prof Santosh Vora
Subject: Approval of MoM of BoS

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Vijay Shah <vijay.shah@in.abb.com> Thu, Jul 9, 2020 at 2:53 PM
To: Head Electrical CHARUSAT <hod.ee@charusat.ac.in>

Dear Prof. Patel

MOM is approved from my side. Do you want any page to be signed -scanned and sent over mail or this approval itself is ok ?

Thanks and best regards

Vijay

From: Head Electrical CHARUSAT <hod.ee@charusat.ac.in>
Sent: Wednesday, July 8, 2020 3:05 PM
To: Praghnesh.Bhatt@sot.pdpu.ac.in; Naran Pindoriya <naran@iitgn.ac.in>; Vijay Shah <vijay.shah@in.abb.com>; Prof Santosh Vora <santosh.vora@nirmauni.ac.in>
Subject: Approval of MoM of BoS

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Prof Santosh Vora <santosh.vora@nirmauni.ac.in> Thu, Jul 9, 2020 at 4:49 PM
To: Head Electrical CHARUSAT <hod.ee@charusat.ac.in>
Cc: Praghnesh Bhatt <Praghnesh.Bhatt@sot.pdpu.ac.in>, Naran Pindoriya <naran@iitgn.ac.in>, Vijay Shah <vijay.shah@in.abb.com>

Dear Sir,

Thanks for the email. Please consider the BoS meeting minutes approved.

Regards,
Dr. S. C. Vora

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> [Quoted text hidden]
> [Quoted text hidden]

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Head Electrical CHARUSAT <hod.ee@charusat.ac.in> Sat, Feb 20, 2021 at 9:43 AM
To: Praghnesh.Bhatt@sot.pdpu.ac.in, Naran Pindoriya <naran@iitgn.ac.in>, Vijay Shah <vijay.shah@in.abb.com>, Prof Santosh Vora <santosh.vora@nirmauni.ac.in>, darshan.shukla@larsentoubro.com

Dear Sir,
As per the agenda Item and resolution 16.12 of BoS16, Our department has decided to offer two minor specialization to Electrical Engineering students.
1. Minor specialization in "Machine Learning and Artificial Intelligence".

2. Minor specialization in "Electrical Vehicle Systems".
The students can opt any of two. Taking minor specialization is not mandatory for students.
The minor specialization in "Electrical Vehicle Systems" will be offered from AY2021-22
The T&E scheme and 4th sem course of "Machine Learning and AI" is attached here for your reference and feedback. This course is offered from AY2020-21.

Regards,
[Quoted text hidden]

Dr. Nilaykumar A. Patel
Associate professor & Head,
[Quoted text hidden]

2 attachments

Teaching scheme B. Tech. Electrical Specialization AI ML 2020-21.pdf
13K

Python Programming Skills_Semester_4.pdf
554K

DARSHAN SHUKLA <DARSHAN.SHUKLA@larsentoubro.com> Sat, Feb 20, 2021 at 11:55 AM
To: "Praghnesh.Bhatt@sot.pdpu.ac.in" <Praghnesh.Bhatt@sot.pdpu.ac.in>, Naran Pindoriya <naran@iitgn.ac.in>, Vijay Shah <vijay.shah@in.abb.com>, Prof Santosh Vora <santosh.vora@nirmauni.ac.in>, Head Electrical CHARUSAT <hod.ee@charusat.ac.in>

Approved.

Together we win

From: Head Electrical CHARUSAT <hod.ee@charusat.ac.in>
Sent: Saturday, February 20, 2021 9:43:37 AM
To: Praghnesh.Bhatt@sot.pdpu.ac.in <Praghnesh.Bhatt@sot.pdpu.ac.in>; Naran Pindoriya <naran@iitgn.ac.in>; Vijay Shah <vijay.shah@in.abb.com>; Prof Santosh Vora <santosh.vora@nirmauni.ac.in>; DARSHAN SHUKLA <DARSHAN.SHUKLA@larsentoubro.com>
Subject: Re: Approval of MoM of BoS

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Vijay Shah <vijay.shah@in.abb.com> Sat, Feb 20, 2021 at 1:44 PM
To: Head Electrical CHARUSAT <hod.ee@charusat.ac.in>, "Praghnesh.Bhatt@sot.pdpu.ac.in" <Praghnesh.Bhatt@sot.pdpu.ac.in>, Naran Pindoriya <naran@iitgn.ac.in>, Prof Santosh Vora <santosh.vora@nirmauni.ac.in>, "darshan.shukla@larsentoubro.com" <darshan.shukla@larsentoubro.com>

Dear All,

If this needs approval from BOS, then yes from my side approved.

Best regards

Vijay

From: Head Electrical CHARUSAT <hod.ee@charusat.ac.in>
Sent: Saturday, February 20, 2021 9:44 AM
To: Praghnesh.Bhatt@sot.pdpu.ac.in; Naran Pindoriya <naran@iitgn.ac.in>; Vijay Shah <vijay.shah@in.abb.com>; Prof Santosh Vora <santosh.vora@nirmauni.ac.in>; darshan.shukla@larsentoubro.com
Subject: Re: Approval of MoM of BoS

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Praghnesh Bhatt <Praghnesh.Bhatt@sot.pdpu.ac.in> Sat, Feb 20, 2021 at 1:59 PM
To: Head Electrical CHARUSAT <hod.ee@charusat.ac.in>
Cc: Naran Pindoriya <naran@iitgn.ac.in>, Vijay Shah <vijay.shah@in.abb.com>, Prof Santosh Vora <santosh.vora@nirmauni.ac.in>, "darshan.shukla@larsentoubro.com" <darshan.shukla@larsentoubro.com>

Dear Sir

You may proceed further in the matter.

Regards

Dr Praghnesh Bhatt
Associate Professor & Head
Department of Electrical Engineering
School of Technology, PDPU
Ext: 079-2327-5664
Mo: +91-7567513461/+91-9427339896
https://scholar.google.com/citations?user=KpSDpKAAAAAJ&hl=en&oi=sra
https://orcid.org/0000-0002-0262-9991
https://www.scopus.com/authid/detail.uri?authorId=35589405600
https://app.webofknowledge.com/author/#/record/2378176

From: Head Electrical CHARUSAT [hod.ee@charusat.ac.in]
Sent: Saturday, February 20, 2021 9:43 AM
To: Praghnesh Bhatt; Naran Pindoriya; Vijay Shah; Prof Santosh Vora; darshan.shukla@larsentoubro.com
Subject: Re: Approval of MoM of BoS

[Quoted text hidden]

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[Quoted text hidden]

Prof Santosh Vora <santosh.vora@nirmauni.ac.in> Sat, Feb 20, 2021 at 2:07 PM
To: Head Electrical CHARUSAT <hod.ee@charusat.ac.in>
Cc: Praghnesh Bhatt <Praghnesh.Bhatt@sot.pdpu.ac.in>, Naran Pindoriya <naran@iitgn.ac.in>, Vijay Shah <vijay.shah@in.abb.com>, darshan.shukla@larsentoubro.com

Dear Sir,

Thanks for the email.

You may consider it as approved from my side.

Regards,
Dr. S. C. Vora

[Quoted text hidden]

> [Quoted text hidden]
>
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CHARUSAT
CHAROTAR UNIVERSITY OF SCIENCE AND TECHNOLOGY

M & V Patel Department of Electrical Engineering

Action taken report on the feedbacks received from different Stack Holders

For the AY 2017-18

The summary of the feedback and suggestions received from the stakeholder and corresponding action taken for AY 2017-18 is as below.

Sr. No.	Suggestion Received	Action Taken	Annexure Page No.
1	Include Project work	"Minor Project I" and "Minor Project II" introduced from AY 2018-19	28,29,36
2	Include Industrial Training	"Summer Internship I" introduced in Third Year from AY 2018-19, and "Summer Internship II" introduced in Fourth Year from AY 2019-20	28,36,53,62
3	Introduce Internship after 2nd year.	Taken care as per serial No. 2	28,36,53,62
4	It is good to see a specific course on " Renewable Energy Sources"	A course on "Modelling and Control of Renewable Energy Sources" Introduce from AY 2019-20 in Final Year	53,62
5.	Latest trends and technological developments can be included.	A course on "Advanced Microcontrollers" is revised and Introduce from AY 2018-19 in Third Year as elective course. A course on "Communication Engineering" is Introduce from AY 2019-20 in Final Year as elective course. A course on "Internet of Things" is Introduce from AY 2019-20 in Final Year as elective course.	28,38,53,63
6	Introduce some industry oriented courses	Taken care as per serial No. 2	28,36,53,62
7	Some courses should be merged to give the place for project	Courses were merged and introduced in Third Year (From AY 2018-19) and Final Year (From AY 2019-20) to give more space for Project. More Time and Credit given to Project from AY 2019-20	3,26
8	Include some skill based subjects	Every course has some skill development components either in technical side of in life skill. Dedicated skill development courses were introduced as elective form AY 2019-20 in Final year.	27,35,36,52,53,62,63

9.	To reduce no. of subjects in final year.	Form AY year 2019-20, final semester courses were reduced. Also, it is planned to offer only one course " Industrial Project" in final semester from AY 2022-23.	3,26
10.	More Lab hours and more software knowledge should be given.	A course on Electrical Machine is revised and offered with 4 hours/week practical time from AY 2018-19 in Third Year. A course on Programmable Logic Controller is revised and offered with 4 Hours/week practical time from AY 2018-19 in Third Year. Earlier both course was offered with scheme of 2 Hours/week practical time. A course on Software simulation is revised and offered with 4 hours/week practical time from AY 2019-20 in Final Year.	27,29,36,52,62

HEAD OF DEPARTMENT
Dept. of Electrical Engg.
Chandubhai S. Patel Institute of Technology
At. & Po. Changa-388421., Ta. Petlad,
Dist. : Anand. (Gujarat)

Minutes –12th Board of Studies Meeting
M&V Patel Department of Electrical Engineering
Faculty of Technology & Engineering, CHARUSAT

Date : September 3, 2016, Saturday
Time : 10:00 am onwards
Venue: Room No: 102, HOD (EE), CSPIT, CHARUSAT Campus

The 12th meeting of Board of Studies, M & V Patel Department of Electrical Engineering, Faculty of Technology and Engineering (FTE), Charotar University of Science and Technology (CHARUSAT) was held on 3/9/2016 at 10:00 a.m. at M & V Patel Department of Electrical Engineering, CSPIT, CHARUSAT Campus. Following members were present:

1	Dr. Praghnesh Bhatt	**Chairman;**	Professor & Head, Department of Electrical Engineering,	
2	Dr. Kartik Pandya	**Member;**	Professor, Department of Electrical Engineering,	
3	Dr. Bhinal Mehta	**Member;**	Assistant Professor Department of Electrical Engineering,	
4	Mr. Nilay Patel	**Member;**	Assistant Professor Department of Electrical Engineering,	
5	Ms. Pankita Mehta	**Member;**	Assistant Professor Department of Electrical Engineering,	
6	Mr. Jivanadhar Joshi	**Member;**	Assistant Professor, Department of Electrical Engineering,	
7	Dr. Sanjay R. Joshi	**External Member;**	Principal Government Engineering College, Valsad	
8	Dr. Bhavik Suthar	**External Member;**	Associate Professor Government Engineering College, Modasa	
9	Dr. Santosh Vora	**External Member;**	Professor Department of Electrical Engineering Nirma University, Ahmedabad	
10	Dr. Vijay Shah	**External Member;**	R&D Specialist, BU-PPMV, Vadodara	
11	Mr. Kirat Pandya	**External Member;**	AGM, Schneider Electricals Ltd, Vadodara	
12	Mr. Sanjay Mahagaokar	**External Member;**	Dy General Manager Engineering and Technology Rotomag Power Drives Ltd	

Initiation:

Dr. Praghnesh Bhatt welcomed all the members of Board of Studies.

Agenda Proceedings & Resolutions:-

Item 12.01:	To approve teaching and examination scheme of B. Tech program under Choice Based Credit System (CBCS) for 3rd to 8th Semester effective from ACY 2017-2018.
	Proceedings 12.01: The teaching and examination scheme of B. Tech program under Choice Based Credit System (CBCS) for 3rd to 8th Semester effective from ACY 2017-2018 has been discussed in details. **Suggestions Received:** ▪ The proposed structure of CBCS has been discussed in detail along with core and different elective courses. ▪ The courses are appropriately distributed among the major areas of electrical engineering such as power system, electrical machines, power electronics, microprocessors & microcontrollers along with required supplementary courses. ▪ It is appreciated to keep the more weightage to practical hours. ▪ The students must know the fundamental of the subjects and they must have knowledge about the various electrical products available in the market along with its specifications and prices. ▪ The students should have the opportunities to develop hardware based projects to learn the theoretical concepts more effectively. The preparation of the complete project report enhances their writing, presentation and communication skills. ▪ Power generation by renewable energy sources and its modeling concepts needs to be imparted as they are the present day demand. ▪ The operating paradigm of the distribution system has changed drastically and its concepts can be covered by offering the courses on smart grid, micro grid and distributed generation. ▪ Early exposure to practical/industrial training makes the students familiar with industrial developments and practices. The projects/training ▪ The department has purchased good number of licensed software. The knowledge of these licensed software will add values for industrial jobs as well as for the further studies.

	▪ The valuable suggestions are received from all invited members of BoS for finalizing the contact hours of 8th semester final year project. Different dimensions to keep the project for whole semester are discussed in detail considering industries' criteria to absorb the students for project. The possibilities to award in-house projects based on hardware development or simulations for 8th semester are also discussed. ▪ Handbooks, catalogs and IS & IEC standards, product manuals should be included for the course on Commissioning and Testing of Electrical Equipments. ▪ The curriculum structure of other universities such as GTU, Nirma, Amity, IITs, NIT, NUS, University of Illinois are also referred and discussed. The goal of designing curriculum structure is to prepare the students for GATE, other competitive exams and for further studies. ▪ The university core and elective courses are also reviewed and they are found suitable to inculcate values & ethics, to enhance critical thinking & logic, to improve communication skills and to increase basic analytical ability among the students. ▪ The vision and mission of the department, POs and PEOs are reviewed and redefined. For 2nd year courses effective from ACY 2017-2018, the individual course objectives and their outcomes are defined. **Resolution 12.01:** • Based on the extensive discussion and suggestion received from the BoS members, the teaching and examination scheme of B. Tech Program under CBCS is finalized and attached in **Annexure 12.I.**
Item 12.02:	To review and approve the detailed syllabus of 1st and 2nd year B. Tech program under CBCS which will be effective from ACY 2017-2018.
	Proceedings 12.02: The detailed syllabus of the courses for B Tech – 2nd Year (3rd and 4th Semesters) effective from 2017-2018 are reviewed. **Suggestions Received:** ▪ The depths of contents of different courses are discussed at length. ▪ The contact hours required to cover the proposed topics are verified and required changes are suggested. ▪ For **EE281** (Electrical Engineering Materials) (University Elective I): The concepts of different conducting, insulating, magnetics and semiconductor material will be given. This will help students in later stage at designing of machines. ▪ For **EE282** (Electrical Power Utilization and Traction) (University Elective II): Electric heating, welding, Fundamentals of illumination and traction can be covered in this course. ▪ For **EE241**: Analog and Digital Electronics, course contents are discussed and finalized.

	For this course, more useful and fundamental book "Design with Operational Amplifier and analog Integrated Circuits, Sergio Franco, McGraw Hill" is suggested. In addition to existing test kits in analog and digital electronics lab, "Analog Discovery Kit" is suggested. ▪ For **EE242**: Circuit Theory, the contents are found suitable. Following new books for circuit theory are proposed. 1. Electric Circuit Analysis, K.S. Sureshkumar, Pearson Education, India 2. Basic Circuit Theory, Charles A. Desoer and Ernest S. Kuh, McGraw Hill ▪ For **EE243**: Electrical Measurements and Industrial Instrumentation, the conventional topics on measurement such as resistance measurement, different AC bridges, shunts and multipliers should be incorporated. The digital methods for power measurement should be discussed. ▪ For **EE244**: Electrical Power Generation and its Economics, the contents are found suitable. ▪ For **EE245**: Control System, state space methods should be limited as compared to other methods. The methods for designing controller structure and compensator designs are suggested to include. ▪ For **EE246** Microprocessor & Microcontrollers, the syllabus is well designed. ▪ For **EE247**: Transformers and Induction Machines, the combination of two AC machines will work well; the portion of the commissioning of transformer and motors need not to be discussed at 4th semester. ▪ Revised course of MA241 Engineering Mathematics III, which is passed in respective BoS will be introduced in third semester of AY 2017-18 **Resolution 12.02:** ▪ The suggestions received from BoS members are incorporated and detailed syllabi for B Tech – 2nd Year (3rd and 4th Semesters) effective from 2017-2018 is approved and is attached in **Annexure – 12.II.**
Item 12.03	To approve the teaching and examination scheme of M. Tech program under Choice Based Credit System (CBCS) effective from ACY: 2016-2017
	Proceedings 12.03: The teaching and examination scheme of M. Tech program under Choice Based Credit System (CBCS) effective from ACY: 2016-2017 is reviewed. **Suggestions Received:** ▪ The different core and elective courses offered at university level are reviewed. The courses under program core, program electives and cluster electives are also reviewed. **Resolution 12.03:**

	University elective courses are introduced. The teaching and examination scheme of M. Tech program under Choice Based Credit System (CBCS) effective from ACY: 2016-2017 is approved and attached in **Annexure – 12.III.**
Item 12.04	To review and approve the detailed syllabus of 1st and 2nd year M. Tech program under CBCS effective from ACY 2016-2017.
	Proceedings 10.04: The detailed syllabus of 1st and 2nd year M. Tech program under CBCS effective from ACY 2016-2017 is reviewed. **Suggestions Received:** **EE781 Optimization Techniques and EE782** The contents of all the course of 1st and 2nd semester of M. Tech are discussed at length. The courses under program electives and cluster electives are good and syllabus contents are well designed. Very good university electives are constructed by various BoS and listed in annexure IV. **Resolution 12.04:** The detailed syllabus of 1st and 2nd year M. Tech program under CBCS effective from ACY 2016-2017 is approved and attached in **Annexure – 12.IV**.
Item 12.05	To review and approve (a) T&E scheme and the detailed syllabus of 3rd year B. Tech program for a batch of 2015 entry and (b) T&E scheme and detailed syllabus of 4th year B. Tech program for a batch of 2014 entry
	Resolution 10.05: (a) T&E scheme and the detailed syllabus of 3rd year B. Tech program for a batch of 2015 entry and (b) T&E scheme and detailed syllabus of 4th year B. Tech program for a batch of 2014 entry are approved and attached in **Annexure 12.V and Annexure 12.VI.**
Item 12.06	Discussion on effective implementation of Outcome Based Education (OBE) and ICT based Teaching-Learning
	Suggestions Received: ▪ All faculty members must aware about each criteria defined by NBA. ▪ The proper understanding of mapping of POs, PEOs, COs and their assessment tools is required. ▪ Faculty contribution should be increased for publication, funded projects and consultancy. ▪ The usage of open course ware from NPTEL, MIT and BISAC must be increased.
Item 12.07	Introducing the new PG program in Electrical Engineering
	Suggestions Received: Following PG programs in Electrical Engineering are proposed. (1) Power Electronics and Drives (2) Renewable Energy (3) Automation and Control
Item 12.08	Suggestion regarding new UG programs in new Institute of Technology of Faculty of

	Technology and Engineering, CHARUSAT
	Suggestions Received: Following new UG programs in can be proposed along with CE, IT, ICT. (1) Mechanical Engineering (2) Instrumentation and Control (3) Bio Informatics
Item 12.09	Discussion regarding recent approval from NBA and scope for the improvement
	All invited BoS members congratulated the University, Institute and Department for getting "A" graded from NAAC and KCG as well as for getting NBA for three departments
Item 12.10	Approval of Examiners' Panel
	The examiners panels for B. Tech and M. Tech have been reviewed and approved. The approved examiner panel is attached in **Annexure 12.VII.**

Additional Items

Sr. No	**Agenda**	**Discussion/Suggestions**
1	Review of Exam Question Papers	Question papers of internal and university examination have been reviewed. The briefings about the continuous evaluation, freedom for pedagogy selection for faculty and execution of the practical sessions have been given to external BoS members. The quality of question papers are found satisfactory, but it is suggested to increase the weighatge on the questions that can increase the analytical and logical thinking ability of students.
2	Review of Result Analysis	The records of result analysis of both internal and university exam are maintained. The results of both the exams are generally discussed and analyzed in the department meeting as soon as the exam gets over and the necessary actions are decided. The YoY comparisons of the results are also discussed and the figures are acceptable. The efforts should be given to again improve the results at all levels. The conduction of the remedial coaching for weaker students has been appreciated by the members.
3	Review of Placement Records	The campus placement of the student needs to be increased. More efforts are required to invite the companies for placement. The aptitude sessions organized for the students are appreciated. It is advised to keep extra technical session to prepare the students for technical skills.
4	Review of B. Tech and M. Tech Projects works	The project titles for B. Tech and M. Tech are reviewed and found satisfactory. It is suggested to give more emphasis on hardware based projects at B. Tech level. For M. Tech, the extensive use of licenses software may help the students to solve/reproduce the IEEE journal papers. Paper presentation for M. Tech students should be made compulsory.
5	Review of Feedback from Students, Identification of slow learners, Counseling	Review pattern for the students feedback and actions after the feedback have been explained. It is an useful component to improve the performance of teacher and T-L practices. The student counseling activities are very appreciated by all the members.

	activities	

Dr. Praghnesh Bhatt
Chairman
Board of Studies (EE)

HEAD OF DEPARTMENT
Dept. of Electrical Engg.
Chandubhai S. Patel Institute of Technology
At. & Po. Changa-388421., Ta. Petlad,
Dist. : Anand. (Gujarat)

Annexure 12.I & II: TEACHING & EXAMINATION SCHEME FOR B TECH PROGRAMME IN ELECTRICAL ENGINEERING (CBCS) Entry Year: 2016

CHAROTAR UNIVERSITY OF SCIENCE & TECHNOLOGY (CHARUSAT)											
TEACHING & EXAMINATION SCHEME FOR B TECH PROGRAMME IN ELECTRICAL ENGINEERING (CBCS) Entry Year: 2016											
Level	**Course Code**	**Course Title**	**Teaching Scheme**				**Examination Scheme**				
			Contact Hours			**Credit**	**Theory**		**Practical**		**Total**
			Theory	**Practical/Tutorial**	**Total**		**Internal**	**External**	**Internal**	**External**	
Level 1	HS101A- HS106A	A Course on Liberal Arts	2		2	2			50	50	**100**
	MA141	Engineering Mathematics I	4	1	5	4	30	70	0	0	**100**
	ME141	Engineering Graphics	2	4	6	4	30	70	50	50	**200**
	PY141	Engineering Physics	3	2	5	4	30	70	25	25	**150**
	CL141	Engineering Mechanics	4	2	6	5	30	70	25	25	**150**
	ME142	Workshop Practices	0	2	2	1			25	25	**50**
		Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra-curricular &co curricular			10						
			15	**11**	**36**	**20**	**120**	**280**	**175**	**175**	**750**
	HS 121A	English Language & Literature	2		2	2	25	25	25	25	**100**
	MA142	Engineering Mathematics II	4	1	5	4	30	70			**100**
	CL142	Environmental Science	2	0	2	2	30	70			**100**
	IT141	Fundamentals of Computer Programming	3	2	5	4	30	70	25	25	**150**
	ME143	Basics of Civil & Mechanical Engineering	4	2	6	5	30	70	25	25	**150**
	EE141	Basics of Electronics & Electrical Engineering	4	2	6	5	30	70	25	25	**150**
		Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra-curricular &co curricular			10						
			19	**7**	**36**	**22**	**175**	**375**	**100**	**100**	**750**

	HS122A/HS131A	Values and Ethics/Philosophy	2		2	2	30	70			**100**
	MA241	Engineering Mathematics III	4	0	4	4	30	70			**100**
	EE241	Analog and Digital Electronics	4	2	6	5	30	70	25	25	**150**
	EE242	Circuit Theory	4	2	6	5	30	70	25	25	**150**
	EE243	Electrical Measurements and Industrial Instrumentation	4	2	6	5	30	70	25	25	**150**
	XXXXX	University Elective- I	2	0	2	2	30	70			**100**
		Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra-curricular &co curricular			10						
Level 2			**20**	**6**	**36**	**23**	**180**	**420**	**75**	**75**	**750**
	HS127.01A/HS133A/ HS123.01A	Communication Skills-2/ Creativity, problem Solving and Innovation/ Critical Thinking and Logic	2		2	2	50	50			**100**
	EE244	Electrical Power Generation and its Economics	4	0	4	4	30	70			**100**
	EE245	Control Systems	4	2	6	5	30	70	25	25	**150**
	EE246	Microprocessor & Microcontrollers	4	2	6	5	30	70	25	25	**150**
	EE247	Transformers and Induction Machines	4	4	8	6	30	70	50	50	**200**
	XXXXX	University Elective- II	2	0	2	2	30	70			**100**
		Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra-curricular &co curricular			7						
			20	**8**	**35**	**24**	**200**	**400**	**100**	**100**	**800**

Level 3	HS124.01A	Professional Communication I	2		2	2			30	70	**100**
	EE341	Electrical Power Transmission and Distribution	4	2	6	5	30	70	25	25	**150**
	EE342	Synchronous and DC Machines	4	4	8	6	30	70	50	50	**200**
	EE343	Power Electronics & Drives I	4	2	6	5	30	70	25	25	**150**
	EE344	Minor Project I	0	4	4	2			50	50	**100**
	EE345	Electrical Product Survey				2			50	50	**100**
	EE350	Summer Internship I		.3	3	3			75	75	**150**
	EE371-EE372	Programme Elective I	3	2	5	4	30	70	25	25	**150**
		Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra-curricular &co curricular			6						
			17	**14**	**37**	**26**	**120**	**280**	**255**	**295**	**950**
	HS125A	**Society, Governance and International Studies**	2		2	2	25	25	25	25	**100**
	EE346	Digital Signal Processing	3	2	5	4	30	70	25	25	**150**
	EE347	Programmable Logic Controllers and Industrial Automation	3	2	5	4	30	70	25	25	**150**
	EE348	Power Electronics & Drives II	3	2	5	4	30	70	25	25	**150**
	EE349	Fault Analysis and Switchgear	4	2	6	5	30	70	25	25	**150**
	EE360	Minor Project II	0	4	4	2	0	0	50	50	**100**
	EE376-EE377	Programme Elective II	3	2	5	4	30	70	25	25	**150**

		Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra-curricular &co curricular			4						
			18	**14**	**36**	**25**	**175**	**375**	**200**	**200**	**950**
Level 4	EE441	Power System Operations and Control	4	2	6	5	30	70	25	25	**150**
	EE442	Power System Protection	4	2	6	5	30	70	25	25	**150**
	EE443	Electrical Machine Design	4	4	8	6	30	70	25	25	**150**
	EE444	Simulation Lab	0	2	2	1			50	50	**100**
	EE445	Summer Practical Training				3			50	50	**100**
	EE471-EE472	Programme Elective III	4	2	6	5	30	70	25	25	**150**
		Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra-curricular &co curricular			2						
			16	**12**	**30**	**25**	**120**	**280**	**200**	**200**	**800**
	EE446	Commissioning and Testing of Electrical Equipment	4	2	6	5	30	70	25	25	**150**
	EE447	Modeling and Control of Renewable Energy Sources	4	2	6	5	30	70	25	25	**150**
	EE448	Major Project				9			250	250	**500**
	EE473-EE474	Programme Elective IV	4	2	6	5	30	70	25	25	**150**
			12	**6**	**18**	**27**	**90**	**210**	**325**	**325**	**950**

CHAROTAR UNIVERSITY OF SCIENCE & TECHNOLOGY (CHARUSAT)											
		Hours				Credits	Marks				
			Theory	Practical	Total						
			137	78	264	192	1180	2620	1430	1470	6700

LIST OF ELECTIVES FOR B TECH PROGRAMME IN ELECTRICAL ENGINEERING

University Electives for Level 2

	UNIVERSITY ELECTIVE 1	UNIVERSITY ELECTIVE 2	
EE281	Electrical Engineering Materials	EE282	Electrical Power Utilization and Traction

Electives for Level 3

	PROGRAMME ELECTIVE 1	PROGRAMME ELECTIVE 2	
EE371	Advanced Microcontrollers	**EE376**	Special Electrical Machines and Applications
EE372	VLSI Technology and Design	**EE377**	Embedded System

Electives for Level 4

	PROGRAMME ELECTIVE 3	PROGRAMME ELECTIVE 4	
EE471	Power Electronics Applications in Power System	**EE473**	Smart Grid and Distribution Generation
EE472	Advances in Power System	**EE474**	Energy Auditing and Management

University Elective I & II:	**Occupational Health and Safety, IPR, Regulatory Affairs, Contract Management,**
(Will be available in a Common Slot)	**Energy Management, Research Methodology, Entrepreneurship, Project Management, First AID and Life Support**
	Risk Management, Disaster Management, Scientific Instrumentation & Measurement, Operation Research, **Business Environment, Quality Assurance, Computer Programming, Numerical Analysis, Web Designing, Cyber Security etc**

Annexure 12.III & IV TEACHING AND EXAMINATION SCHEME FOR M Tech in Electrical Engineering (Electrical Power Systems)

Semester	Course Code	Course Title	Teaching Scheme				Examination Scheme				
			Theory	Practical/Tutorial	Total	Credit	Theory		Practical		Total
							Internal	External	Internal	External	
Sem 1	EE741	Modeling & Simulation of Electrical Machines (PC - 1)	4	2	6	5	30	70	25	25	150
	EE742	Modern Power System Operations (PC - 2)	3	2	5	4	30	70	25	25	150
	EE743	Advanced Power Electronics in Power Systems (PC - 3)	3	2	5	4	30	70	25	25	150
	EE7XX	Programme Elective-1 (PE - 1)	3	2	5	4	30	70	25	25	150
	EE7XX	Program Cluster Elective - 1 (PCT - 1)	3	2	5	4	30	70	25	25	150
	HS701	Advanced Critical Thinking & Logic (UC - 1)	2	0	2	2	30	70	0	0	100
	XXXXX	University Elective 1 (UE - 1)	2	0	2	2	30	70	0	0	100
			20	**10**	**30**	**25**	**210**	**490**	**125**	**125**	**950**
Sem 2	EE744	Advanced Power System Dynamics & Stability (PC - 4)	4	2	6	5	30	70	25	25	150
	EE745	FACTS & HVDC Transmission (PC - 5)	3	2	5	4	30	70	25	25	150

	EE746	Advanced Power System Protection (PC - 6)	3	2	5	4	30	70	25	25	150
	EE7XX	Programme Elective - 2 (PE - 2)	3	2	5	4	30	70	25	25	150
	EE7XX	Program Cluster Elective – 2skills	3	2	5	4	30	70	25	25	150
	HS702	Academic Writing & communication (UC-2)	0	2	2	2	0	0	30	70	100
	XXXXX	University Elective 2 (UE - 2)	2	0	2	2	30	70	0	0	100
			18	**12**	**30**	**25**	**180**	**420**	**155**	**195**	**950**

Programme Electives of Semester 1 and 2

Programme Electives 1 (PE 1) for Semester 1			**Programme Electives 2 (PE 2) for Semester 2**	
EE761	Control System Engineering		EE763	Modeling and Simulation of Renewable Energy Sources
EE762	Engineering Optimization Techniques		EE764	Distributed Generation and Smart Grid

Cluster Electives of Semester 1 and 2

Program Cluster Electives 1 (CT 1) for Semester 1			**Program Cluster Electives 2 (CT 2) for Semester 2**	
EE771	Digital Signal Processing & its Application		EE772	Restructuring & Deregulation of Power Systems
IT767	Micro device Programming		IT768	Applied Cryptography
EC767	Embedded System Design		EC768	Digital Image & Speech Processing
CE767	Operating System Design & Concepts		CE768	Software Project Management & Quality Assurance

University Electives of Semester 1 and 2

University Electives (UE 1) for Semester 1			**University Electives (UE 2) for Semester 2**	
MA771	Reliability and Risk Analysis		EE782	Energy Audit and Management
EE781	Optimization Techniques		CE771	Project Management
ME781	Occupational Health and Safety		IT771	Cyber Security and Laws
CE772	Research Methodology		CA 842	Mobile Application Development
CA730	Internet & Web Designing		PT796	Fitness & Nutrition
PT795	Health & Physical Activity		NR 752	Epidemiology and Community Health
NR 751	Women's Health		OC733	Introduction to Polymer Science
RD701	Introduction to Analytical Techniques		MB651	Software based Statistical Analysis
RD702	Introduction to Nano science& Technology		PH826	Intellectual Property Rights

MB650	Creative Leadership		MA772	Design of Experiments	
PH825	Community Pharmacy Ownership				

Semester	Course Code	Course Title	Credit	Examination Scheme					
				Internal		External			Total
				Progress Report	Progress Seminar	Report	Seminar	Viva	
Sem 3	EE811	Project Preliminaries	4	50	50	0	50	50	200
	EE812	Project Phase 1	18	100	100	100	100	100	500
			22	**150**	**150**	**100**	**150**	**150**	**700**
Sem 4	EE813	Project Phase 2	30	200	200	200	200	200	1000
			30	**200**	**200**	**200**	**200**	**200**	**1000**
		Grand Total	**102**						**3600**

Annexure 12.V TEACHING AND EXAMINATION SCHEME FOR Final Year B Tech in Electrical Engineering Entry Year: 2014

Sem	Course Code	Course title	Teaching Scheme				Examination Scheme				Total
			Contact Hrs.			Credits	Theory		Practical		
			Theory	Practical	Total		Internal	External	Internal	External	
Final Sem-VII	EE 401.01	Electrical Machine Design - I	3	2	5	4	30	70	25	25	150
	EE 402	Electrical Power System - IV	3	2	5	4	30	70	25	25	150
	EE 403	Power Electronics & Drives - II	4	2	6	5	30	70	25	25	150
	EE 404	Energy Conservation and Management	3	0	3	3	30	70			100
	EE 405	Power System Protection	4	2	6	5	30	70	25	25	150
		Elective - I	4	2	6	5	30	70	25	25	150
			21	**10**	**31**	**26**	**180**	**420**	**125**	**125**	**850**
Final Sem-VIII	EE 406.01	Electrical Machine Design - II	3	2	5	4	30	70	25	25	150
	EE 407	Commissioning of Electrical Equipments	3	2	5	4	30	70	25	25	150
	EE 408	Power System Stability & Control	4	2	6	5	30	70	25	25	150
	EE 409	Digital Signal Processing	3	2	5	4	30	70	25	25	150
		Elective - II	4	2	6	5	30	70	25	25	150
	EE 410.01	Project	0	6	6	3	0	0	50	100	150
			17	**16**	**33**	**25**	**150**	**350**	**175**	**175**	**900**

Code	Elective - I		Code	Elective - II
EE 414	Power System Operations		EE 415	Advances in Power System
EE 418	Applications of Advanced Microcontrollers in Electrical Engineering-I		EE 419	Applications of Advanced Microcontrollers in Electrical Engineering-II

Annexure 12.VI TEACHING AND EXAMINATION SCHEME FOR THIRD Year B Tech in Electrical Engineering Entry Year: 2015

Sem	Course Code	Course Title	Teaching Scheme					Examination Scheme				
			Contact Hours				Credit	Theory		Practical		Total
			Theory	Practical	Tutorial	Total		Internal	External	Internal	External	
TY Sem-V	EE301	Electrical Machines-II	4	2	0	6	5	30	70	25	25	150
	EE302.01	Electrical Power System-II	4	0	0	4	4	30	70	0	0	100
	EE303.01	Microcontrollers and Applications	3	2	0	5	4	30	70	25	25	150
	EE304.01	Industrial Instrumentation	3	2	0	5	4	30	70	25	25	150
	EE305	Power Electronics & Drives-I	4	2	0	6	5	30	70	25	25	150
	EE311	Simulation Lab-I	0	2	0	2	1	0	0	25	25	50
	HS124.01A	Professional Communication	**2**		**0**	**2**	**2**	**0**	**0**	**30**	**70**	**100**
			20	**10**		**30**	**25**	**150**	**350**	**155**	**195**	**850**
TY Sem-VI	EE306.01	Electrical Machines-III	4	2	0	6	5	30	70	25	25	150
	EE307	Electrical Power System-III	4	2	0	6	5	30	70	25	25	150
	EE308.01	High Voltage Engineering	3	2	0	5	4	30	70	25	25	150
	EE309.01	Electrical Power Utilisation & Traction	3	0	0	3	3	30	70			100
	EE310.01	Programmable Logic Controllers and Industrial Automation	4	2	0	6	5	30	70	25	25	150
	EE312	Simulation Lab-II	0	2	0	2	1	0	0	25	25	50
	HS125.01A/ HS130A/ HS134A	Society, Governance and International Studies/ Law and Justice/ Contributor Personality Development	2		**0**	**2**	**2**	**25**	**25**	**25**	**25**	**100**

			20	**10**		**30**	**25**	**175**	**375**	**150**	**150**	**850**

Annexure 12.VII Examiner Panel List for B. Tech and M. Tech Examination

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Examiner Panel for Electrical Engineering (Internal Examiners)

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Minutes – 12th Board of Studies Meeting
M&V Patel Department of Electrical Engineering
Faculty of Technology & Engineering, CHARUSAT

Date : September 3, 2016, Saturday
Time : 10:00 am onwards
Venue: Room No: 102, HOD (EE), CSPIT, CHARUSAT Campus

The 12th meeting of Board of Studies, M&V Patel Department of Electrical Engineering, Faculty of Technology and Engineering (FTE), Charotar University of Science and Technology (CHARUSAT) was held on 3/9/2016 at 10:00 a.m. at Department of Electrical Engineering, CSPIT, CHARUSAT Campus. Following members were present:

1	Dr. Praghnesh Bhatt	**Chairman;**	Professor & Head, Department of Electrical Engineering,	
2	Dr. Kartik Pandya	**Member;**	Professor, Department of Electrical Engineering,	
3	Dr. Bhinal Mehta	**Member;**	Assistant Professor Department of Electrical Engineering,	
4	Mr. Nilay Patel	**Member;**	Assistant Professor Department of Electrical Engineering,	
5	Ms. Pankita Mehta	**Member;**	Assistant Professor Department of Electrical Engineering,	Pankita
6	Mr. Jeevanadhar Joshi	**Member;**	Assistant Professor, Department of Electrical Engineering,	
7	Dr. Sanjay R. Joshi	**External Member;**	Principal Government Engineering College, Valsad	
8	Dr. Bhavik Suthar	**External Member;**	Associate Professor Government Engineering College, Modasa	
9	Dr Santosh Vora	**External Member;**	Professor Department of Electrical Engineering Nirma University, Ahmedabad	
10	Dr Vijay Shah	**External Member;**	R&D Specialist, BU-PPMV, Vadodara	
11	Mr. Kirat Pandya	**External Member;**	AGM, Schneider Electricals Ltd, Vadodara	
12	Mr. Sanjay Mahagaokar	**External Member;**	Dy General Manager Engineering and Technology Rotomag Power Drives Ltd	

Minutes –14th Board of Studies Meeting
M&V Patel Department of Electrical Engineering
Faculty of Technology & Engineering, CHARUSAT

Date : August 26, 2017, Saturday
Time : 10:00am onwards
Venue: Room No: 102, HOD (EE), CSPIT, CHARUSAT Campus

The 14thmeeting of Board of Studies, M&V Patel Department of Electrical Engineering, Faculty of Technology and Engineering (FTE), Charotar University of Science and Technology (CHARUSAT) was held on 26/8/2017 at 10:00 a.m. at M&V Patel Department of Electrical Engineering, CSPIT, CHARUSAT Campus. Following members were present:

1	Dr. Praghnesh Bhatt	**Chairman;**	Professor & Head, Department of Electrical Engineering,	
2	Dr. KartikPandya	**Member;**	Professor, Department of Electrical Engineering,	
3	Dr. Bhinal Mehta	**Member;**	Assistant Professor Department of Electrical Engineering,	
4	Mr. Nilay Patel	**Member;**	Assistant Professor Department of Electrical Engineering,	
5	Mr. Maulik Shah	**Member;**	Assistant Professor Department of Electrical Engineering,	
6	Mr. Mhir Bhatt	**Member;**	Assistant Professor Department of Electrical Engineering,	
7	Mr. Jivanadhar Joshi	**Member;**	Assistant Professor, Department of Electrical Engineering,	
8	Mr. Pratik Mochi	**Member;**	Assistant Professor, Department of Electrical Engineering,	
9	Dr. Sanjay R. Joshi	**External Member;**	Principal Government Engineering College, Valsad	
10	Dr. BhavikSuthar	**External Member;**	Associate Professor Government Engineering College, Modasa	
11	Dr. Santosh Vora	**External Member;**	Professor, Department of Electrical Engineering Nirma University, Ahmedabad	
12	Dr. Vijay Shah	**External Member;**	R&D Specialist, BU-PPMV, Vadodara	
13	Mr. Kirat Pandya	**External Member;**	AGM, Schneider Electricals Ltd, Vadodara	

14	Mr. Sanjay Mahagaokar	**External Member;**	Dy General Manager Engineering and Technology, Rotomag Power Drives.	

Initiation:

Dr. Kartik Pandya welcomed all the members of Board of Studies.

Agenda Proceedings & Resolutions:-

Item 14.01:	To review the T & E scheme for entire B TECH and MTECH programs under CBCS. Suggestions are invited to change T & E scheme of 3rd -8th semester of BTECH
	Proceedings 14.01: The teaching and examination scheme of B. Tech and M. Tech. programs under Choice Based Credit System (CBCS) for 3rd to 8th Semester effective from ACY 2017-2018 had been discussed in details. **Suggestions Received:** ▪ The proposed structure of CBCS has been discussed in detail along with core and different elective courses. ▪ The courses are appropriately distributed among the major areas of electrical engineering such as power system, electrical machines, power electronics, microprocessors & microcontrollers along with required supplementary courses. ▪ More program electives should be incorporated in the third year and final year of B. Tech. program. ▪ The students must know the fundamental of the subjects and they must have knowledge about the various electrical products available in the market along with its specifications and prices. ▪ The students should have the opportunities to develop hardware-based projects to learn the theoretical concepts more effectively. The preparation of the complete project report enhances their writing, presentation and communication skills. ▪ Power generation by renewable energy sources and its modeling concepts needs to be imparted, as they are the present day demand. ▪ The operating paradigm of the distribution system has changed drastically and its concepts can be covered by offering the courses on smart grid, micro grid and distributed generation. ▪ Early exposure to practical/industrial training makes the students familiar with industrial developments and practices. The projects/training. ▪ The curriculum structure of other universities such as GTU, Nirma, Amity, IITs, NIT, NUS, and University of Illinois are also referred and discussed. The goal of designing curriculum structure is to prepare the students for GATE, other competitive exams and for further studies.

	▪ The university core and elective courses are also reviewed and they are found suitable to inculcate values & ethics, to enhance critical thinking & logic, to improve communication skills and to increase basic analytical ability among the students. New subjects of Humanities are incorporated in second year level from AY 2017-18 as the courses were discussed in respective BoS. The courses are listed as under. HS131A Philosophy HS122A Values and Ethics HS133A Creativity, Problem Solving and Innovation HS127.01 Communication Skills II HS123.01 Critical Thinking and Logic **Resolution 14.01:** ▪ Based on the extensive discussion and suggestion received from the BoS members, the teaching and examination scheme of B. Tech Program under CBCS is finalized and attached in **Annexure 14.I.**
Item 14.02:	To prepare and review the detailed syllabus of 3rd year B.TECH program under CBCS.
	Proceedings 14.02: The detailed syllabus of the courses for B Tech – 3rdYear (5thand 6thSemesters) is reviewed. **Suggestions Received:** **EE341: Electrical Power Transmission and Distribution** 1 Role of vector group for design purpose should be included. 2 Before design of transmission line, transmission line geometry and type of field should be included. 3 Visit to sub-station should be reflected in syllabus. 4 Most of experiments are study experiments. 5 Study of cable should be included. 6 Restrict the transmission line parameters to lower values. **EE342: Synchronous and DC Machines** 1 Four hour of lab session is good decision. 2 Applications of machines should be included by case study. 3 DC machine should be covered first and then Synchronous machine later in the syllabus. 4 Chapter numbers should be changed accordingly. 5 Subject is too long. 6 Machine winding portion should be excluded from theory and should be included in lab. 7 Number of lab experiments can be increased up to 20.

	8	A small topic of machine materials and permanent magnet can be included.
	9	Universal motor should be included in this course.
	10	For visualization, a print or drawing sheet can be prepared for machine winding.
	11	Machine re-winder can be demonstrated in lab.
	12	Visit can be arranged for students to see winding process of machine.
		Transform theory should be included in this course so it can help in Drives.

EE343:Power Electronics & Drives I

1	Define subtopics of MOSFET and IGBTs.
2	Addition of datasheets of All devices.
3	Experiments should be hands on like Choppers, Controlled rectifier.
4	Addition of experiments based on driver circuits and SCR firing circuits.
5	Real time Application should be included.
6	AC-DC converter is for 10 hours which is very less.
7	Mention components in detail in syllabus. Define attributes.
8	comparative analysis of various component should be included.

EE344: Minor Project I

1	Students will be given minor project.
2	The level of project should be primary knowledge level.

EE345: Electrical Product Survey

1	Specification, market survey, identification of different products like wire, cable, switchgear can be done.
2	Electronic component and IC data sheets can be studied by students.
3	Student groups should be formed to understand above concepts and evaluated based on presentation.

EE350: Summer Internship I

1	This course can be added in 5^{th} semester.
2	Summer break between 4^{th} and 5^{th} semester can be effectively utilized by students.

EE371: Advanced Microcontroller (Programme Elective I)

1	Embedded C Language Programming for Microcontroller and keil will be taught.
2	PCA and its application and communication protocol can be added in syllabus.

EE372: VLSI Technology and Design (Programme Elective I)

1	Introduction and fabrication of MOSFET must be covered.

2 MOS combination and sequential circuits can be added in this course.

EE346:Digital Signal Processing

1 There should be a separate compulsory subject for learning science of ' Signals & System's'
2 Its not better idea to cover the above as a part of a chapter in course of Digital Signal Processing.
3 The Last chapter may be removed with more emphasis on first chapter.

EE347:Programmable Logic Controllers and Industrial Automation

1 Syllabus should have Fulfillment/justification of course title.
2 It can be an Elective Course.
3 Ladder diagram portion can be reduced in terms of time.
4 Include SMI, graphical Language.

EE348:Power Electronics & Drives II

1 Syllabus is very compressive.
2 Adding of Advanced Power Electronics in Elective courses. So multilevel inverters and other advanced topics can be include in this course.

EE349: Fault Analysis and Switchgear

1 Symmetrical component should be given less hour.
2 Time can be increased for Types of CB.
3 More reference books can be added.

EE360: Minor Project II

1 Students will be given minor project.
2 The level of project should be moderate knowledge level.
3 Arduino based/ microcontroller based project will enhance the skill of students.

EE376: Special Electrical Machines and Applications (Programme Elective II)

1 Basics of magnetic theory and need of magnets should be included.
2 More text book to be included for Induction Generator.
3 More time should be given to permanent magnet materials and PM motors.
4 Schrage motor portion can be given less time.
5 Servo motor should be given more time regarding their characteristic, response time etc.
6 For special machine, a book entitled "Special Electrical Machine" by D. G. Miller can be included.
7 Stepper motor, servo-motor, PM motor should be in lab experiment.
8 Switched reluctance motor should be included as a topic in details.

	9 BLDC motor connected with solar power should be included. 10 Use of special machine with renewable energy can be included. **EE377: Embedded System (Programme Elective II)** 1 The syllabus is well organized and almost covering everything required in simpler manner. **Resolution 14.02:** ▪ The suggestions received from BoS members are incorporated and detailed syllabi for B Tech – 3rdYear (5thand 6thSemesters) effective from 2018-2019 is approved and is attached in **Annexure – 14.I.**
Item 14.03	To review the detailed syllabus of 1st year M.TECH program under CBCS for any necessary changes.
	Proceedings 14.03: The teaching and examination scheme of M. Tech program under Choice Based Credit System (CBCS) effective from ACY: 2016-2017 is reviewed. T & E scheme and courses of M. Tech. (PE) are discussed. This program may start from AY 2018-19. **Suggestions Received:** **EE751: Power Electronics Devices and Circuits** 1 Basics of all semiconductors must be included 2 Time can be increased for Design of magnetics circuits. 3 Resonant convertors should cover all convertors. 4. Driver circuits should be cover more topics. **EE766: Power Quality** 1 Harmonics should be given more weightage. 2 Power frequency and hogh frequency phenomena should be included 3 Importance of power quality issue should be introduced. **EE767: Digital Control Systems** 1 Time response and frequency response topic will be given more importance 2 State-space analysis should be given more weightage. 3 Controller design. **EE756: Control of Electric Drives**

	1 Syllabus designed is fine **EE757: Advanced Power Electronic Convertors** 1 Syllabus designed is fine 2 More books can be suggested **EE768: Power Electronics for Renewable Energy Sources** 1 Power convertors for Solar and PV should be discussed in depth. 2 Reference theory concept must be included. **EE769: Control of Special Electrical Machines** 1 Syllabus designed is fine 2. More time can be spend for basic topics. ▪ New subjects of Humanities are incorporated from AY 2017-18 as the courses were discussed and approved in respective BoS. ▪ HS704A Academic Speaking ▪ HS705A Academic Writing **Resolution 14.03:** The suggestions received from BoS members are incorporated and the teaching and examination scheme of M. Tech (Electrical Power System) program under Choice Based Credit System (CBCS) effective from ACY: 2016-2017 is approved and attached in **Annexure – 14.II.** The teaching and examination scheme of M. Tech (Power Electronics) program under Choice Based Credit System (CBCS) effective from ACY: 2016-2017 is approved and attached in **Annexure – 14.III.**
Item 14.04	Discussion on effective implementation of Outcome Based Education (OBE) and ICT based Teaching-Learning
	Suggestions Received: ▪ All faculty members must aware about each criteria defined by NBA. ▪ The proper understanding of mapping of POs, PEOs, Cos and their assessment tools is required. ▪ Faculty contribution should be increased for publication, funded projects and consultancy. ▪ The usage of open course ware from NPTEL, MIT and BISAC must be increased.
Item	Introducing the new PG program in Electrical Engineering

14.05	**Suggestions Received:** Following PG programs in Electrical Engineering are proposed. (1) Power Electronics and Drives (2) Renewable Energy (3) Automation and Control
Item 14.06	Discussion regarding recent approval from NBA and scope for the improvement
	All invited BoS members congratulated the University, Institute and Department for getting "A" graded from NAAC and KCG as well as for getting NBA for three departments
Item 14.07	Approval of Examiners' Panel
	The examiners panels for B. Tech and M. Tech have been reviewed and approved. The approved examiner panel is attached in **Annexure 14.VII.**

Additional Items

Sr. No	Agenda	Discussion/Suggestions
1	Review of Exam Question Papers	Question papers of internal and university examination have been reviewed. The briefings about the continuous evaluation, freedom for pedagogy selection for faculty and execution of the practical sessions have been given to external BoS members. The quality of question papers are found satisfactory, but it is suggested to increase the weighatge on the questions that can increase the analytical and logical thinking ability of students.
2	Review of Result Analysis	The records of result analysis of both internal and university exam are maintained. The results of both the exams are generally discussed and analyzed in the department meeting as soon as the exam gets over and the necessary actions are decided. The YoYcomparisons of the results are also discussed and the figures are acceptable. The efforts should be given to again improve the results at all levels. The conduction of the remedial coaching for weaker students has been appreciated by the members.
3	Review of Placement Records	The campus placement of the student needs to be increased. More efforts are required to invite the companies for placement. The aptitude sessions organized for the students are appreciated. It is advised to keep extra technical session to prepare the students for technical skills.
4	Review of B. Tech and M. Tech Projects works	The project titles for B. Tech and M. Tech are reviewed and found satisfactory. It is suggested to give more emphasis on hardware based projects at B. Tech level. For M. Tech, the extensive use of licenses software may help the students to solve/reproduce the IEEE journal papers. Paper presentation for M. Tech students should be made compulsory.
5	Review of	Review pattern for the students feedback and actions after the feedback have been

	Feedback from Students, Identification of slow learners, Counseling activities	explained. It is an useful component to improve the performance of teacher and T-L practices. The student counseling activities are very appreciated by all the members.

Dr. Praghnesh Bhatt
Chairman
Board of Studies (EE)

HEAD OF DEPARTMENT
Dept. of Electrical Engg.
Chandubhai S. Patel Institute of Technology
At. & Po. Changa-388421., Ta. Petlad,
Dist. : Anand. (Gujarat)

Annexure 14.I: TEACHING & EXAMINATION SCHEME FOR B TECH PROGRAMME IN ELECTRICAL ENGINEERING (CBCS) Entry Year: 2016

CHAROTAR UNIVERSITY OF SCIENCE & TECHNOLOGY (CHARUSAT)											
TEACHING & EXAMINATION SCHEME FOR B TECH PROGRAMME IN ELECTRICAL ENGINEERING (CBCS) Entry Year: 2016											
Level	**Course Code**	**Course Title**	**Teaching Scheme**				**Examination Scheme**				
			Contact Hours			**Credit**	**Theory**		**Practical**		**Total**
			Theory	**Practical/Tutorial**	**Total**		**Internal**	**External**	**Internal**	**External**	
Level 1	HS101A-HS106A	A Course on Liberal Arts	2		2	2			50	50	**100**
	MA141	Engineering Mathematics I	4	1	5	4	30	70	0	0	**100**
	ME141	Engineering Graphics	2	4	6	4	30	70	50	50	**200**
	PY141	Engineering Physics	3	2	5	4	30	70	25	25	**150**
	CL141	Engineering Mechanics	4	2	6	5	30	70	25	25	**150**
	ME142	Workshop Practices	0	2	2	1			25	25	**50**
		Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra-curricular & co curricular			10						
			15	**11**	**36**	**20**	**120**	**280**	**175**	**175**	**750**
	HS 121A	English Language & Literature	2		2	2	25	25	25	25	**100**
	MA142	Engineering Mathematics II	4	1	5	4	30	70			**100**
	CL142	Environmental Science	2	0	2	2	30	70			**100**
	IT141	Fundamentals of Computer Programming	3	2	5	4	30	70	25	25	**150**
	ME143	Basics of Civil & Mechanical Engineering	4	2	6	5	30	70	25	25	**150**
	EE141	Basics of Electronics & Electrical Engineering	4	2	6	5	30	70	25	25	**150**
		Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra-curricular &co curricular			10						
			19	**7**	**36**	**22**	**175**	**375**	**100**	**100**	**750**

	HS122A/HS131A	Values and Ethics/Philosophy	2		2	2	30	70			**100**
	MA241	Engineering Mathematics III	4	0	4	4	30	70			**100**
	EE241	Analog and Digital Electronics	4	2	6	5	30	70	25	25	**150**
	EE242	Circuit Theory	4	2	6	5	30	70	25	25	**150**
	EE243	Electrical Measurements and Industrial Instrumentation	4	2	6	5	30	70	25	25	**150**
	XXXXX	University Elective- I	2	0	2	2	30	70			**100**
		Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra-curricular & co curricular			10						
			20	**6**	**36**	**23**	**180**	**420**	**75**	**75**	**750**
Level 2	HS123.01A/ HS127.01A/ HS133A	Critical Thinking and Logic/ Communication skill 2/ Creativity, Problem Solving and Innovation	2		2	2	50	50			**100**
	EE244	Electrical Power Generation and its Economics	4	0	4	4	30	70			**100**
	EE245	Control Systems	4	2	6	5	30	70	25	25	**150**
	EE246	Microprocessor & Microcontrollers	4	2	6	5	30	70	25	25	**150**
	EE247	Transformers and Induction Machines	4	4	8	6	30	70	50	50	**200**
	XXXXX	University Elective- II	2	0	2	2	30	70			**100**
		Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra-curricular & co curricular			7						
			20	**8**	**35**	**24**	**200**	**400**	**100**	**100**	**800**

	HS124.01A	Professional Communication	2		2	2			30	70	**100**
	EE341	Electrical Power Transmission and Distribution	4		4	4	30	70			**100**
	EE342	Synchronous and DC Machines	4	4	8	6	30	70	50	50	**200**
	EE343	Power Electronics & Drives I	4	2	6	5	30	70	25	25	**150**
	EE344	Minor Project I	0	4	4	2			50	50	**100**
	EE345	Electrical Product Survey				2			50	50	**100**
	EE350	Summer Internship I		3	3	3			75	75	**150**
	EE371-EE372	Programme Elective I	4	2	6	5	30	70	25	25	**150**
	Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra curricular & co curricular				3						
			17	**14**	**36**	**29**	**120**	**280**	**255**	**295**	**1050**
Level 3	HS134A	**Contributor Personality Development**	2		2	2			30	70	**100**
	EE346	Digital Signal Processing	3	2	5	4	30	70	25	25	**150**
	EE347	Programmable Logic Controllers and Industrial Automation	2	4	6	4	30	70	50	50	**200**
	EE348	Power Electronics & Drives II	3	2	5	4	30	70	25	25	**150**
	EE349	Fault Analysis and Switchgear	4	2	6	5	30	70	25	25	**150**
	EE360	Minor Project II	0	4	4	2	0	0	50	50	**100**
	EE376-EE377	Programme Elective II	3	2	5	4	30	70	25	25	**150**
	Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra curricular & co curricular				4						
			18	**14**	**36**	**25**	**175**	**375**	**200**	**200**	**950**

Level 4	EE441	Power System Operations and Control	4	2	6	5	30	70	25	25	**150**
	EE442	Power System Protection	4	2	6	5	30	70	25	25	**150**
	EE443	Electrical Machine Design	4	4	8	6	30	70	25	25	**150**
	EE444	Simulation Lab	0	2	2	1			50	50	**100**
	EE450	Summer Internship II				3			75	75	**100**
	EE471-EE473	Programme Elective III	4	2	6	5	30	70	25	25	**150**
		Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra curricular & co curricular			2						
			16	**12**	**30**	**25**	**120**	**280**	**200**	**200**	**800**
	EE446	Commissioning and Testing of Electrical Equipment	4	2	6	5	30	70	25	25	**150**
	EE447	Modeling and Control of Renewable Energy Sources	4	2	6	5	30	70	25	25	**150**
	EE448	Major Project				9			250	250	**500**
	EE476-EE478	Programme Elective IV	4	2	6	5	30	70	25	25	**150**
			12	**6**	**18**	**24**	**90**	**210**	**325**	**325**	**950**

CHAROTAR UNIVERSITY OF SCIENCE & TECHNOLOGY (CHARUSAT)											
		Hours				Credits	Marks				
			Theory	Practical	Total						
			137	78	264	192	1180	2620	1430	1470	6700

LIST OF ELECTIVES FOR B TECH PROGRAMME IN ELECTRICAL ENGINEERING

Electives for Level 2

	UNIVERSITY ELECTIVE 1	UNIVERSITY ELECTIVE 2	
EE281	Electrical Engineering Materials	EE282	Electrical Power Utilization and Traction

Electives for Level 3

	PROGRAMME ELECTIVE 1	PROGRAMME ELECTIVE 2	
EE371	Advanced Microcontrollers	**EE376**	Special Electrical Machines and Applications
EE372	VLSI Technology and Design	**EE377**	Embedded Systems

Electives for Level 4

	PROGRAMME ELECTIVE 3	PROGRAMME ELECTIVE 4	
EE471	Power Electronics Applications in Power System	**EE476**	Advances in power system
EE472	Communication Engineering	**EE477**	Internet of Things
EE473	High Voltage Engineering	**EE478**	Energy Conservation and Management

University Elective I & II:

(Will be available in a Common Slot)

Occupational Health and Safety, IPR, Regulatory Affairs, Contract Management,

Energy Management, Research Methodology, Entrepreneurship, Project Management, First AID and Life Support

Risk Management, Disaster Management, Scientific Instrumentation & Measurement, Operation Research,
Business Environment, Quality Assurance, Computer Programming, Numerical Analysis, Web Designing, Cyber Security etc

Annexure:14. II TEACHING AND EXAMINATION SCHEME FOR M Tech in Electrical Engineering (Electrical Power Systems)
Entry year 2017

Sem	Course Code	Course Title	Teaching Scheme				Examination Scheme				
			Theory	Practical/Tutorial	Total	Credit	Theory		Practical		Total
							Internal	External	Internal	External	
Sem 1	EE741	Modeling & Simulation of Electrical Machines (PC - 1)	4	2	6	5	30	70	25	25	150
	EE742	Modern Power System Operations (PC - 2)	3	2	5	4	30	70	25	25	150
	EE743	Advanced Power Electronics in Power Systems (PC - 3)	3	2	5	4	30	70	25	25	150
	EE7XX	Programme Elective-1 (PE - 1)	3	2	5	4	30	70	25	25	150
	EE7XX	Programme Cluster Elective - 1 (CT - 1)	3	2	5	4	30	70	25	25	150
	XXXX	University Elective 1 (UE - 1)	2	0	2	2	30	70	0	0	100
	HSXXX	HSS Elective -I	2		2	2	30	70	0	0	100
			20	10	30	25	210	490	125	125	950

Sem	Course Code	Course Title	Teaching Scheme				Examination Scheme				
			Theory	Practical/Tutorial	Total	Credit	Theory		Practical		Total
Sem 2	EE744	Advanced Power System Dynamics & Stability (PC - 4)	4	2	6	5	30	70	25	25	150
	EE745	FACTS & HVDC Transmission (PC - 5)	3	2	5	4	30	70	25	25	150
	EE746	Advanced Power System Protection (PC - 6)	3	2	5	4	30	70	25	25	150
	EE7XX	Programme Elective - 2 (PE - 2)	3	2	5	4	30	70	25	25	150
	EE7XX	Programme Cluster Elective - 2 (CT - 2)	3	2	5	4	30	70	25	25	150
	HS705A	Academic Writing	0	2	2	2	0	0	30	70	100
	XXXX	University Elective 2 (UE - 2)	2	0	2	2	30	70	0	0	100
			18	12	30	25	180	420	155	195	950

Semester	Course Code	Course Title	Credit	Examination Scheme					
				Internal		External			Total
				Progress Report	Progress Seminar	Report	Seminar	Viva	
Sem 3	EE811	Project Preliminaries/Summer Industrial Training	4	50	50	0	50	50	200
	EE812	Project Phase 1	18	100	100	100	100	100	500
			22	**150**	**150**	**100**	**150**	**150**	**700**
Sem 4	EE813	Project Phase 2	30	200	200	200	200	200	1000
			30	**200**	**200**	**200**	**200**	**200**	**1000**
		Grand Total	**102**						**3600**

Programme Electives of Semester 1 and 2					
Programme Electives 1 (PE 1) for Semester 1			**Programme Electives 2 (PE 2) for Semester 2**		
EE761	Control System Engineering		EE763	Modeling and Simulation of Renewable Energy Sources	
EE762	Engineering Optimization Techniques		EE764	Distributed Generation and Smart Grid	

Cluster Electives of Semester 1 and 2					
Cluster Electives 1 (CT 1) for Semester 1			**Cluster Electives 2 (CT 2) for Semester 2**		
EE771	Digital Signal Processing & its Application		EE772	Restructuring & Deregulation of Power Systems	
IT767	Micro device Programming		IT768	Applied Cryptography	
EC767	Embedded System Design		EC768	Digital Image & Speech Processing	
CE767	Operating System Design & Concepts		CE768	Software Project Management & Quality Assurance	

University Electives of Semester 1 and 2			
University Electives (UE 1) for Semester 1		**University Electives (UE 2) for Semester 2**	
MA771	Reliability and Risk Analysis	EE782	Energy Audit and Management
EE781	Optimization Techniques	CE771	Project Management
ME781	Occupational Health and Safety	IT771	Cyber Security and Laws
CE772	Research Methodology	CA 842	Mobile Application Development
CA730	Internet & Web Designing	PT796	Fitness & Nutrition
PT795	Health & Physical Activity	NR 752	Epidemiology and Community Health
NR 751	Women's Health	OC733	Introduction to Polymer Science
RD701	Introduction to Analytical Techniques	MB651	Software based Statistical Analysis
RD702	Introduction to Nanoscience& Technology	PH826	Intellectual Property Rights
MB650	Creative Leadership	MA772	Design of Experiments
PH825	Community Pharmacy Ownership		

HSS Elective for Semester 1	
HS701 A	Advance Critical Thinking and Logic
HS703.01 A	Languages (French/ German)
HS704 A	Academic Speaking

Annexure:14 III TEACHING AND EXAMINATION SCHEME FOR M Tech in Electrical Engineering (Power Electronics)
Entry year July 2018

CHAROTAR UNIVERSITY OF SCIENCE AND TECHNOLOGY

CHOICE BASED CREDIT SYSTEM SCHEME (July 2018)

Semester	Course Code	Course Title	Teaching Scheme				Examination Scheme				
							Theory		Practical		
			Theory	Practical/ Tutorial	Total	Credit	Internal	External	Internal	External	Total
Sem 1	EE741	Modeling & Simulation of Electrical Machines (PC - 1)	4	2	6	5	30	70	25	25	150
	EE743	Advanced Power Electronics in Power Systems (PC-2)	3	2	5	4	30	70	25	25	150
	EE751	Power Electronics Devices and Circuits (PC - 3)	3	2	5	4	30	70	25	25	150
	EE7XX	Programme Elective-1 (PE - 1)	3	2	5	4	30	70	25	25	150
	EE7XX	Cluster Elective - 1 (CT - 1)	3	2	5	4	30	70	25	25	150
	HSXXX	HSS Elective -I	2	0	2	2	30	70	0	0	100
	XXXXX	University Elective 1 (UE - 1)	0	2	2	2	30	70	0	0	100
					30	**25**					**950**
Sem 2	EE745	FACTS & HVDC Transmission (PC-4)	3	2	5	4	30	70	25	25	150
	EE756	Control of Electric Drives (PC - 5)	3	2	5	4	30	70	25	25	150
	EE757	Advanced Power Electronics Converters (PC-6)	4	2	6	5	30	70	25	25	150
	EE7XX	Programme Elective - 2 (PE - 2)	3	2	5	4	30	70	25	25	150
	EE7XX	Cluster Elective - 2 (CT - 2)	3	2	5	4	30	70	25	25	150
	HS705A	Academic Writing	0	2	2	2			30	70	100

	XXXXX	University Elective 2 (UE - 2)	2	0	2	2	30	70	0	0	100
					30	**25**					**950**

Programme Electives of Semester 1 and 2				
Programme Electives 1 (PE 1) for Semester 1			**Programme Electives 2 (PE 2) for Semester 2**	
EE766	Power Quality		EE768	Power Electronics for Renewable Energy Sources
EE767	Digital Control Systems		EE769	Control of Special Electrical Machines

Cluster Electives of Semester 1 and 2				
Cluster Electives 1 (CT 1) for Semester 1			**Cluster Electives 2 (CT 2) for Semester 2**	
EE771	Digital Signal Processing & its Application		EE772	Restructuring & Deregulation of Power Systems
IT767	Micro device Programming		IT768	Applied Cryptography
EC767	Embedded System Design		EC768	Digital Image & Speech Processing
CE767	Operating System Design & Concepts		CE768	Software Project Management & Quality Assurance

University Electives of Semester 1 and 2				
University Electives (UE 1) for Semester 1			**University Electives (UE 2) for Semester 2**	
MA771.01	Reliability and Risk Analysis		EE782.01	Energy Audit and Management
EE781.01	Optimization Techniques		CE771.01	Project Management
ME781.01	Occupational Health and Safety		IT771.01	Cyber Security and Laws
CE772.01	Research Methodology		CA 842	Mobile Application Development
CA730	Internet & Web Designing		PT796.01	Fitness & Nutrition
PT795.01	Health & Physical Activity		NR 752.01	Epidemiology and Community Health
NR 755	First Aid and Life Support		OC733.01	Introduction to Polymer Science

RD701.01	Introduction to Analytical Techniques
RD702.01	Introduction to Nanoscience& Technology
MB650	Creative Leadership
PH891	Community Pharmacy Ownership

MB651	Software based Statistical Analysis
PH892	Intellectual Property Rights
MA772.01	Design of Experiments

HSS Elective for Semester 1	
HS701 A	Advance Critical Thinking and Logic
HS703.01 A	Languages (French/ German)
HS704 A	Academic Speaking

Semester	**Course Code**	**Course Title**	**Credit**	**Examination Scheme**					
				Internal		**External**			**Total**
				Progress Report	Progress Seminar	Report	Seminar	Viva	
Sem 3	EE811	Project Preliminaries	4	50	50	0	50	50	200
	EE812	Project Phase 1	18	100	100	100	100	100	500
			22	**150**	**150**	**100**	**150**	**150**	**700**
Sem 4	EE813	Project Phase 2	30	200	200	200	200	200	1000
			30	**200**	**200**	**200**	**200**	**200**	**1000**
		Grand Total	**102**						**3600**

Annexure 14.VII Examiner Panel List for B. Tech and M. Tech Examination

Examiner Panel for Electrical Engineering (External Examiners)

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M&V Patel Department of Electrical Engineering
Faculty of Technology & Engineering, CHARUSAT
14th Board of Studies Meeting

Date : August 26, 2017, Saturday
Time : 10:00am onwards
Venue: Room No: 102, HOD (EE), CSPIT, CHARUSAT Campus

1	Dr. Praghnesh Bhatt	**Chairman;**	Professor & Head, Department of Electrical Engineering,	
2	Dr. KartikPandya	**Member;**	Professor, Department of Electrical Engineering,	
3	Dr. Bhinal Mehta	**Member;**	Assistant Professor Department of Electrical Engineering,	
4	Mr. Nilay Patel	**Member;**	Assistant Professor Department of Electrical Engineering,	
5	Mr. Maulik Shah	**Member;**	Assistant Professor Department of Electrical Engineering,	
6	Mr. Mhir Bhatt	**Member;**	Assistant Professor Department of Electrical Engineering,	
7	Mr. Jivanadhar Joshi	**Member;**	Assistant Professor, Department of Electrical Engineering,	
8	Mr. Pratik Mochi	**Member;**	Assistant Professor, Department of Electrical Engineering,	
9	Dr. Sanjay R. Joshi	**External Member;**	Principal Government Engineering College, Valsad	
10	Dr. BhavikSuthar	**External Member;**	Associate Professor Government Engineering College, Modasa	
11	Dr. Santosh Vora	**External Member;**	Professor, Department of Electrical Engineering Nirma University, Ahmedabad	
12	Dr. Vijay Shah	**External Member;**	R&D Specialist, BU-PPMV, Vadodara	
13	Mr. Kirat Pandya	**External Member;**	AGM, Schneider Electricals Ltd, Vadodara	
14	Mr. Sanjay Mahagaokar	**External Member;**	Dy General Manager Engineering and Technology, Rotomag Power Drives.	

Minutes –14-Ath Board of Studies Meeting
M&V Patel Department of Electrical Engineering
Faculty of Technology & Engineering, CHARUSAT

Date : July 28, 2018, Saturday
Time : 10:00 am onwards
Venue: Room No: 102, HOD (EE), CSPIT, CHARUSAT Campus

The 14th meeting of Board of Studies, M&V Patel Department of Electrical Engineering, Faculty of Technology and Engineering (FTE), Charotar University of Science and Technology (CHARUSAT) was held on 28/7/2018 at 10:00 am. at M&V Patel Department of Electrical Engineering, CSPIT, CHARUSAT Campus. Following members were present:

1	Mr. Nilay Patel	**Chairman;**	Assistant Professor & Head, Department of Electrical Engineering,	
2	Dr. Kartik Pandya	**Member;**	Professor, Department of Electrical Engineering,	
3	Mr. Maulik Shah	**Member;**	Assistant Professor Department of Electrical Engineering,	
4	Mr. Mhir Bhatt	**Member;**	Assistant Professor Department of Electrical Engineering,	
5	Mr. Jivanadhar Joshi	**Member;**	Assistant Professor, Department of Electrical Engineering,	
6	Mr. Pratik Mochi	**Member;**	Assistant Professor, Department of Electrical Engineering,	
7	Mr. Jigar S Sarda	**Member;**	Assistant Professor, Department of Electrical Engineering,	
8	Dr. Bhavik Suthar	**External Member;**	Professor, Government Engineering College, Bhuj	
9	Dr. Sanjay R. Joshi	**External Member;**	Principal Government Engineering College, Valsad	
10	Prof. P. K. Shah	**External Member;**	Professor LDRP, Modasa	
11	Dr. Santosh Vora	**External Member;**	Professor Department of Electrical Engineering Nirma University, Ahmedabad	

Initiation:

Mr. Nilay Patel welcomed all the members of Board of Studies.

Agenda Proceedings & Resolutions:-

Item 14.01: To prepare and review the detailed syllabus of 4th year B.TECH program under CBCS.

Proceedings 14.01:

The detailed syllabus of the courses for B Tech – 4th Year (7thand 8thSemesters) is reviewed.

Suggestions Received:

EE441: Power System Operations and Control

1	Topics on State Estimation & Load forecasting should be incorporated.
2	Syllabus is lengthy.
3	Chapter of transients should be removed or modified
4	Text books and reference books should be swapped.
5	Year of the book can be removed as it seems to be old version of book.
6	Voltage stability part can be removed.
7	Add contingency analysis method
8	Use B.R..Gupta as a text book

EE442: Power System Protection

1	Chapter 9 should be removed.
2	16 hours of transmission can be reduced.
3	Add Earthing of power system

EE443: Electrical Machine Design

1	DC machine design part can be reduced/removed.

EE444: Simulation Lab

1	Hours distribution modify
2	20 hours are more.
3	Keep basic experiments.
4	Experiments of machine are tough for students.
5	It should be "Suggested" list of experiment in syllabus booklet.
6	Fault analysis experiments can be added.
7	Linear equation solution can be added.
8	Multiple faculties should be involved in framing the experiments and conducting lab.
9	It should be kept simple for students.
10	Numerical Methods, RLC series and Parallel operation and its Transients type Practical should be included.

EE471: Power Electronics Applications in Power System (Programme Elective III)

1	Power quality can be removed. SSSC and UPFC can be removed.
2	Chapter 2 should be up to topic "converter transformer testing"
3	Problems in transmission line should be involved.

EE472: Communication Engineering (Programme Elective III)

1	Syllabus designed is fine

EE473: High Voltage Engineering (Programme Elective III)

1	Contents of chapter 07 can be reduced.
2	Remove power quality problems & standard chapter

EE446: Commissioning and Testing of Electrical Equipment

1	Syllabus is lengthy.
2	Chapter of DC machine can be removed.
3	Commissioning part should be more rather than testing.

EE447: Modeling and Control of Renewable Energy Sources

1	Name of the subject should be modified as Renewable Energy Sources and offer as elective subject
2	Content of Solar and Wind should be more.
3	Chapter 5 can be removed.
4	Course can be offered as **programme elective.**

EE448: Major Project

1 Project should be in line with innovation or today's' need.

EE450: Summer Internship II

1 On the same line of summer Internship-I, this course will follow.

EE476: Advances in Power System (Programme Elective IV)

1	Remove probabilistic power flow chapter
2	Add Restructuring in power system

EE477: Internet of Things (Programme Elective IV)

1 Syllabus designed is fine.

EE478: Energy Conservation and Management (Programme Elective IV)

	1 No Comments **Resolution 14.01:** ▪ The suggestions received from BoS members are incorporated and detailed syllabi / T & E Scheme for B Tech – 4th Year (7th and 8th Semesters) effective from 2019-2020 is approved and is attached in **Annexure – I**
Item 14.02	To review and approve T&E scheme and syllabus for FY, SY and TY of B. Tech program for ACY 2018-2019 under Choice Based Credit System (CBCS).
	Proceedings 14.02: The teaching and examination scheme of FY, SY and TY of B. Tech program for ACY 2018-2019 under Choice Based Credit System (CBCS) is reviewed. **Suggestions Received:** The second year university electives offered by electrical engineering department should be more in line with current scenario and it must be changed. **EE283: Python for Electrical Engineering (University Elective I)** 1 Basics of python programming taught here. 2 Various problems can be solved using python programming. **EE286: Computer Programming for Electrical Engineering (University Elective I)** 1 MATLAB and other software introduced here to solve simple circuit. 2 Linear equations, non-linear equations, ODE and matrices should be solved by software. **Resolution 14.02:** Above two courses introduce from AY 2018-19, remaining electives can be kept as it is. For the 2018 entry students, the first year and second year syllabus is reviewed and approved. Physics course PY141.01 is approved in respective BoS and introduced in first year. The T & E scheme is approved for third year and fourth year. It is decided that the total credit must be equal to 192. The T & E scheme for 2018 entry student is attached in **Annexure – II**
Item 14.03	To review and approve T&E scheme of M. Tech in Power Electronics for ACY 2018-2019 under CBCS
	Proceedings 14.03: The teaching and examination scheme of M. Tech in Power Electronics for ACY 2018-2019 under CBCS is reviewed.

	Suggestions Received: ▪ No Suggestion. It is already draft one year back and approved. Attached in **Annexure – III**
Item 14.04	To review T&E Scheme for existing M. Tech program under CBCS for any necessary changes
	Proceedings 14.04: The teaching and examination scheme of M. Tech in EPS for ACY 2018-2019 under CBCS is reviewed. **Suggestions Received:** ▪ No Suggestion. It is already draft one year back and approved. Attached in **Annexure –IV**
Item 14.05	**Proceedings 14.05:** Discussion on effective implementation of Outcome Based Education (OBE) and ICT based Teaching-Learning
	Suggestions Received: ▪ All faculty members must aware about each criteria defined by NBA. ▪ The proper understanding of mapping of POs, PEOs, COs and their assessment tools is required. ▪ Faculty contribution should be increased for publication, funded projects and consultancy. ▪ The usage of open course ware from NPTEL, MIT and BISAC must be increased.
Item 14.06	**Proceedings 14.06:** Introducing the new UG program in Electrical Engineering
	Suggestions Received: Not needed right now.
Item 14.07	**Proceedings 14.07:** Discussion regarding approval from NBA and scope for the improvement
	All invited BoS members congratulated the University, Institute and Department for getting "A" graded from NAAC and KCG as well as for getting NBA for three departments. **Suggestion received:** Cadre ratio and student- teacher ratio along with research in department are most affected factors.
Item 14.08 14.09	**Proceedings 14.08 and 14.09:** To approve the syllabus of M Tech (Newly Introduced Programs) **Resolution** This agenda is duplicated as per agenda number 2 & 3
Item 14.10	**Proceedings 14.10:** To incorporate the revised syllabus of Mathematics and Physics in first year **Resolution**

	The syllabus is already designed and passed in the respective BoS and added to FY syllabus.
Item 14.11	**Proceedings 14.11:** To implement summer internship in 3rd semester of B Tech (Same Credit, same Marks) **Resolution** It is not possible due to D2D students.
	Other Agendas are discussed and listed in additional Items

Additional Items

Sr. No	Agenda	Discussion/Suggestions
1	Review of Exam Question Papers	Question papers of internal and university examination have been reviewed. The briefings about the continuous evaluation, freedom for pedagogy selection for faculty and execution of the practical sessions have been given to external BoS members. The quality of question papers are found satisfactory, but it is suggested to increase the weighatge on the questions that can increase the analytical and logical thinking ability of students. The question papers are as per blooms taxonomy. **Annexure –V and VIII**
2	Review of Result Analysis	The records of result analysis of both internal and university exam are maintained. The results of both the exams are generally discussed and analyzed in the department meeting as soon as the exam gets over and the necessary actions are decided. The YoY comparisons of the results are also discussed and the figures are acceptable. The efforts should be given to again improve the results at all levels. The conduction of the remedial coaching for weaker students has been appreciated by the members. **Annexure –IX**
3	Review of Placement Records	The campus placement of the student needs to be increased. More efforts are required to invite the companies for placement. The aptitude sessions organized for the students are appreciated. It is advised to keep extra technical session to prepare the students for technical skills. **Annexure –X**
4	Review of B. Tech and M. Tech Projects works	The project titles for B. Tech and M. Tech are reviewed and found satisfactory. It is suggested to give more emphasis on hardware based projects at B. Tech level. For M. Tech, the extensive use of licenses software may help the students to solve/reproduce the IEEE journal papers. Paper presentation for M. Tech students should be made compulsory.
5	Review of Feedback from Students, Identification of slow learners, Counseling activities	Review pattern for the students feedback and actions after the feedback have been explained. It is an useful component to improve the performance of teacher and T-L practices. The student counseling activities are very appreciated by all the members.
6	Approval of Examiners'	The examiners panels for B. Tech and M. Tech have been reviewed and approved. The approved examiner panel is attached in **Annexure VII.**

	Panel	
7	Admissions	As per the experts, the Electrical branch interest is not reduced, but the interest towards CE/IT branch is increased, Hence Electrical Branch has to suffer for a complete one cycle.
8.	Audit Course	Electrical students can be offered audit course from CE/IT on IoT. Also Electrical department should offer audit course on arduino. Apart from the regular teaching, by audit course, social activities and by taking parts in sports and co/extra-curricular activities, the holistic development of student will be possible.
9.	Sports, Cultural and Social activities.	The students are encouraged to take part in national and international level sports events. With social activities the bonding and trust with society and CHARUSAT will increase. At least one week cultural programme to be organized by institute.
10.	Quality of research in dissertation and PhD.	For PhD it is essential to publish at least to research papers in scopus indexed journals, hence Quality will be there in research work.
11.	Research Papers and Research funding	Each faculty must publish at least two papers in high impact factor journal. By this the CV of the faulty become strengthen, hence chances of getting grants will increase. More efforts will be put to fetch the research grants. All the faculties are aware about funding agencies.
12.	NPTEL Course	Now as pert AICTE, NPTEL Course will be considered as FDP and according to that API point given to faculty.
13.	Innovation in Pedagogy	The educational goal must be discussed by student and teacher and according to that, A common strategies for class must be made and according to individual student's knowledge, individual strategies should be explained to each student. Learning while doing is best pedagogy.
14	Quality in Education and World Class Universities	By quality consultancy work, more practical knowledge and time-on-task learning strategy accelerates the quality education and movement towards the world class universities.
15	Outcome Based Education and Road-map 2023	The outcome of each course and program must be monitored effectively. If required outcome doesn't achieve in students, more quality efforts must be made. The main focus of road-map 2013 is, placement of eligible students must be reach up to 100%. **Annexure –VI**
16.	Innovative Projects	The BoS members appreciated the department projects. The capacity of the department must be showcased to industry people.

Faculty Board Meeting:

Faculty board meeting was held at conference room, DEPSTAR College.

The inputs given by expert of electrical field are as under.

1. Right now the interest of students are towards the computer related branch, hence the number of students in the electrical or other branch are less.

2. Day by day the students in A group of 12th standards are decreasing due to lack of interest in mathematics subject. So students must be motivated to take interest in maths subject right from school level.
3. Experts gave their opinion that, each branch has its cycle depending on market scenario. So within two years, again the interest f students towards the core branch will increase.

Mr. Nilay A. Patel
Chairman
Board of Studies (EE)

HEAD OF DEPARTMENT
Dept. of Electrical Engg.
Chandubhai S. Patel Institute of Technology
At. & Po. Changa-388421., Ta. Petlad,
Dist. : Anand. (Gujarat)

14A

Annexure I: TEACHING & EXAMINATION SCHEME FOR B TECH PROGRAMME IN ELECTRICAL ENGINEERING (CBCS) Entry Year: 2016

CHAROTAR UNIVERSITY OF SCIENCE & TECHNOLOGY (CHARUSAT)											
TEACHING & EXAMINATION SCHEME FOR B TECH PROGRAMME IN ELECTRICAL ENGINEERING (CBCS) Entry Year: 2016											
Level	**Course Code**	**Course Title**	**Teaching Scheme**				**Examination Scheme**				
			Contact Hours			**Credit**	**Theory**		**Practical**		**Total**
			Theory	**Practical/Tutorial**	**Total**		**Internal**	**External**	**Internal**	**External**	
Level 1	HS101A- HS106A	A Course on Liberal Arts		2	2	2			50	50	**100**
	MA141	Engineering Mathematics I	4	1 (T)	4	4	30	70			**100**
	ME141	Engineering Graphics	2	4	6	4	30	70	50	50	**200**
	PY141	Engineering Physics	3	2	5	4	30	70	25	25	**150**
	CL141	Engineering Mechanics	4	2	6	5	30	70	25	25	**150**
	ME142	Workshop Practices	0	2	2	1			25	25	**50**
	Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra- curricular &co curricular				11						
					36	**20**					**750**
	HS 121A	English Language and Literature	1	1	2	2	25	25	25	25	**100**
	MA142	Engineering Mathematics II	4	1 (T)	4	4	30	70			**100**
	CL142	Environmental Science	2		2	2	30	70			**100**
	IT141	Fundamentals of Computer Programming	3	2	5	4	30	70	25	25	**150**
	ME143	Basics of Civil & Mechanical Engineering	4	2	6	5	30	70	25	25	**150**
	EE141	Basics of Electronics & Electrical Engineering	4	2	6	5	30	70	25	25	**150**
	Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra- curricular & co curricular				11						
					36	**22**					**750**

	HS122A/HS131A	Values and Ethics/Philosophy	2		2	2	30	70			**100**
	MA241	Engineering Mathematics III	4		4	4	30	70			**100**
	EE241	Analog and Digital Electronics	4	2	6	5	30	70	25	25	**150**
	EE242	Circuit Theory	4	2	6	5	30	70	25	25	**150**
	EE243	Electrical Measurements and Industrial Instrumentation	4	2	6	5	30	70	25	25	**150**
	XXXXX	University Elective- I	2		2	2	30-70				**100**
	Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra- curricular & co curricular				10						
					36	**23**					**750**
Level 2	HS123.01A/ HS 127.01A/ HS133A	Critical Thinking and Logic/ Communication skills 2/ Creativity, Problem Solving and Innovation	2		2	2	30-70				**100**
	EE244	Electrical Power Generation and its Economics	4		4	4	30	70			**100**
	EE245	Control Systems	4	2	6	5	30	70	25	25	**150**
	EE246	Microprocessor & Microcontrollers	4	2	6	5	30	70	25	25	**150**
	EE247	Transformers and Induction Machines	4	4	8	6	30	70	50	50	**200**
	XXXXX	University Elective- II	2		2	2	30-70				**100**
	Assignment Practices/Student counseling/Remedial classes/Library/Sports /Extra- curricular & co-curricular				8						
					36	**24**					**800**

Level 3	HS124.01A	Professional Communication		2	2	2			30	70	**100**
	EE341	Electrical Power Transmission and Distribution	4		4	4	30	70			**100**
	EE342	Synchronous and DC Machines	4	4	8	6	30	70	50	50	**200**
	EE343	Power Electronics & Drives I	4	2	6	5	30	70	25	25	**150**
	EE344	Minor Project I	0	4	4	2			50	50	**100**
	EE345	Electrical Product Survey	0	2	2	2			50	50	**100**
	EE371-EE372	Programme Elective I	4	2	6	5	30	70	25	25	**150**
	EE350	Summer Internship I	0	0	0	3			75	75	**150**
	Assignment Practices/ Student counseling/ Remedial classes/ Library/ Sports/ Extra- curricular & co curricular				4						
					36	**29**					**1050**
	HS134A	Contributor Personality Development		2	2	2			30	70	**100**
	EE346	Digital Signal Processing	3	2	5	4	30	70	25	25	**150**
	EE347	Programmable Logic Controllers and Industrial Automation	2	4	6	4	30	70	50	50	**200**
	EE348	Power Electronics & Drives II	3	2	5	4	30	70	25	25	**150**
	EE349	Fault Analysis and Switchgear	4	2	6	5	30	70	25	25	**150**
	EE360	Minor Project II	0	4	4	2			50	50	**100**
	EE376-EE377	Programme Elective II	3	2	5	4	30	70	25	25	**150**
	Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra- curricular & co curricular				3						
					36	**25**					**1000**

Level 4	EE441	Power System Operations and Control	4	2	6	5	30	70	25	25	**150**
	EE442	Power System Protection	4	2	6	5	30	70	25	25	**150**
	EE443	Electrical Machine Design	4	2	6	5	30	70	25	25	**150**
	EE444	Simulation Lab	0	4	4	2			50	50	**100**
	EE450	Summer Internship II				3			75	75	**150**
	EE471-EE473	Programme Elective III	4	2	6	5	30	70	25	25	**150**
	Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra-curricular & co curricular				8						
					36	**25**					**850**
	EE446	Commissioning and Testing of Electrical Equipment	4	2	6	5	30	70	25	25	**150**
	EE447	Modeling and Control of Renewable Energy Sources	4	2	6	5	30	70	25	25	**150**
	EE448	Major Project			18	9			250	250	**500**
	EE476-EE478	Programme Elective IV	4	2	6	5	30	70	25	25	**150**
					36	**27**	**90**	**210**	**325**	**325**	**950**

CHAROTAR UNIVERSITY OF SCIENCE & TECHNOLOGY (CHARUSAT)											
		Hours				Credits	Marks				
			Theory	Practical	Total						
					288	192					6900

LIST OF ELECTIVES FOR B TECH PROGRAMME IN ELECTRICAL ENGINEERING

University Electives for Level 2

University Elective 1		University Elective 2	
EE281	Electrical Engineering Materials	**EE282**	Electrical Power Utilisation and Traction

Electives for Level 3

	PROGRAMME ELECTIVE 1	PROGRAMME ELECTIVE 2	
EE371	Advanced Microcontrollers	**EE376**	Special Electrical Machines and Applications
EE372	VLSI Technology & Design	**EE377**	Embedded Systems

Electives for Level 4

	PROGRAMME ELECTIVE 3	PROGRAMME ELECTIVE 4	
EE471	Power Electronics Applications in Power System	**EE476**	Advances in Power System
EE472	Communication Engineering	**EE477**	Internet of Things
EE473	High Voltage Engineering	**EE478**	Energy Conservation and Management

University Elective I & II:

(Will be available in a Common Slot)

Occupational Health and Safety, IPR, Regulatory Affairs, Contract Management,

Energy Management, Research Methodology, Entrepreneurship, Project Management, First AID and Life Support

Risk Management, Disaster Management, Scientific Instrumentation & Measurement, Operation Research,
Business Environment, Quality Assurance, Computer Programming, Numerical Analysis, Web Designing, Cyber Security etc

M&V Patel Department of Electrical Engineering
Faculty of Technology & Engineering, CHARUSAT
14th Board of Studies Meeting

Date : July 28, 2018, Saturday
Time : 10:00 am onwards
Venue: Room No: 102, HOD (EE), CSPIT, CHARUSAT Campus

1	Mr. Nilay Patel	**Chairman;**	Assistant Professor & Head, Department of Electrical Engineering,	
2	Dr. Kartik Pandya	**Member;**	Professor, Department of Electrical Engineering,	
3	Mr. Maulik Shah	**Member;**	Assistant Professor Department of Electrical Engineering,	
4	Mr. Mhir Bhatt	**Member;**	Assistant Professor Department of Electrical Engineering,	
5	Mr. Jivanadhar Joshi	**Member;**	Assistant Professor Department of Electrical Engineering,	
6	Mr. Jigar Sarda	**Member;**	Assistant Professor Department of Electrical Engineering,	
7	Mr. Pratik Mochi	**Member;**	Assistant Professor, Department of Electrical Engineering,	
8	Dr. Sanjay R. Joshi	**External Member;**	Principal Government Engineering College, Valsad	
9	Dr. Bhavik Suthar	**External Member;**	~~Principal~~ Professor in EE Government Engineering College, bhuj	
10	Dr. Santosh Vora	**External Member;**	Professor Department of Electrical Engineering Nirma University, Ahmedabad	
11	Mr. Sanjay Mahagaokar	**External Member;**	Dy General Manager Engineering and Technology, Rotomag Power Drives. Napa Talpad.	
12	Prof. Prakash K. Shah	**External Member;**	Professor Department of Electrical Engineering LDRP, Ahmedabad	

CHARUSAT
CHAROTAR UNIVERSITY OF SCIENCE AND TECHNOLOGY

M & V Patel Department of Electrical Engineering

Action taken report on the feedbacks received from different Stack Holders

For the AY 2018-19

The summary of the feedback and suggestions received from the stakeholder and corresponding action taken for AY 2018-19 is as below.

Sr. No.	Suggestion Received	Action Taken	Annexure Page No
1	Final year students should get opportunity to take project in industry	More Time and Credit given to Project along with no. of courses reduction from AY 2019-20. Hence student can go to industry for project. Full final semester project will be implemented from AY 2022-23.	3,11
2	Artificial Intelligence course should be incorporated.	It is offered as minor specialization from AY 2020-21.	94,95
3	Lesser subjects in final semester.	Taken care as per serial No. 1	3,11
4	Distribution of syllabus in proper way	From AY 2016-17, it has been taken care. Also, distribution of elective courses are taken care with addition of new electives wef AY 2018-19	66,76,82,91
5	Curriculum needs updation which include industrial training and project work.	Taken care as per serial No. 1, 2 and 7 (Table of AY 2017-18 feedback)	3,11
6	More latest technology exposure, New methodology adoption	A course on "Advanced Microcontrollers" is revised and Introduce from AY 2018-19 in Third Year as elective course. A course on "Communication Engineering" is Introduce from AY 2019-20 in Final Year as elective course. A course on "Internet of Things" is Introduce from AY 2019-20 in Final Year as elective course.	28,36,38,53,63

HEAD OF DEPARTMENT
Dept. of Electrical Engg.
Chandubhai S. Patel Institute of Technology
At. & Po. Changa-388421., Ta. Petlad,
Dist. : Anand. (Gujarat)

Minutes –12th Board of Studies Meeting
M&V Patel Department of Electrical Engineering
Faculty of Technology & Engineering, CHARUSAT

Date : September 3, 2016, Saturday
Time : 10:00 am onwards
Venue: Room No: 102, HOD (EE), CSPIT, CHARUSAT Campus

The 12th meeting of Board of Studies, M & V Patel Department of Electrical Engineering, Faculty of Technology and Engineering (FTE), Charotar University of Science and Technology (CHARUSAT) was held on 3/9/2016 at 10:00 a.m. at M & V Patel Department of Electrical Engineering, CSPIT, CHARUSAT Campus. Following members were present:

1	Dr. Praghnesh Bhatt	**Chairman;**	Professor & Head, Department of Electrical Engineering,	
2	Dr. Kartik Pandya	**Member;**	Professor, Department of Electrical Engineering,	
3	Dr. Bhinal Mehta	**Member;**	Assistant Professor Department of Electrical Engineering,	
4	Mr. Nilay Patel	**Member;**	Assistant Professor Department of Electrical Engineering,	
5	Ms. Pankita Mehta	**Member;**	Assistant Professor Department of Electrical Engineering,	
6	Mr. Jivanadhar Joshi	**Member;**	Assistant Professor, Department of Electrical Engineering,	
7	Dr. Sanjay R. Joshi	**External Member;**	Principal Government Engineering College, Valsad	
8	Dr. Bhavik Suthar	**External Member;**	Associate Professor Government Engineering College, Modasa	
9	Dr. Santosh Vora	**External Member;**	Professor Department of Electrical Engineering Nirma University, Ahmedabad	
10	Dr. Vijay Shah	**External Member;**	R&D Specialist, BU-PPMV, Vadodara	
11	Mr. Kirat Pandya	**External Member;**	AGM, Schneider Electricals Ltd, Vadodara	
12	Mr. Sanjay Mahagaokar	**External Member;**	Dy General Manager Engineering and Technology Rotomag Power Drives Ltd	

Initiation:

Dr. Praghnesh Bhatt welcomed all the members of Board of Studies.

Agenda Proceedings & Resolutions:-

Item 12.01:	To approve teaching and examination scheme of B. Tech program under Choice Based Credit System (CBCS) for 3rd to 8th Semester effective from ACY 2017-2018.
	Proceedings 12.01: The teaching and examination scheme of B. Tech program under Choice Based Credit System (CBCS) for 3rd to 8th Semester effective from ACY 2017-2018 has been discussed in details. **Suggestions Received:** ▪ The proposed structure of CBCS has been discussed in detail along with core and different elective courses. ▪ The courses are appropriately distributed among the major areas of electrical engineering such as power system, electrical machines, power electronics, microprocessors & microcontrollers along with required supplementary courses. ▪ It is appreciated to keep the more weightage to practical hours. ▪ The students must know the fundamental of the subjects and they must have knowledge about the various electrical products available in the market along with its specifications and prices. ▪ The students should have the opportunities to develop hardware based projects to learn the theoretical concepts more effectively. The preparation of the complete project report enhances their writing, presentation and communication skills. ▪ Power generation by renewable energy sources and its modeling concepts needs to be imparted as they are the present day demand. ▪ The operating paradigm of the distribution system has changed drastically and its concepts can be covered by offering the courses on smart grid, micro grid and distributed generation. ▪ Early exposure to practical/industrial training makes the students familiar with industrial developments and practices. The projects/training ▪ The department has purchased good number of licensed software. The knowledge of these licensed software will add values for industrial jobs as well as for the further studies.

	▪ The valuable suggestions are received from all invited members of BoS for finalizing the contact hours of 8th semester final year project. Different dimensions to keep the project for whole semester are discussed in detail considering industries' criteria to absorb the students for project. The possibilities to award in-house projects based on hardware development or simulations for 8th semester are also discussed. ▪ Handbooks, catalogs and IS & IEC standards, product manuals should be included for the course on Commissioning and Testing of Electrical Equipments. ▪ The curriculum structure of other universities such as GTU, Nirma, Amity, IITs, NIT, NUS, University of Illinois are also referred and discussed. The goal of designing curriculum structure is to prepare the students for GATE, other competitive exams and for further studies. ▪ The university core and elective courses are also reviewed and they are found suitable to inculcate values & ethics, to enhance critical thinking & logic, to improve communication skills and to increase basic analytical ability among the students. ▪ The vision and mission of the department, POs and PEOs are reviewed and redefined. For 2nd year courses effective from ACY 2017-2018, the individual course objectives and their outcomes are defined. **Resolution 12.01:** • Based on the extensive discussion and suggestion received from the BoS members, the teaching and examination scheme of B. Tech Program under CBCS is finalized and attached in **Annexure 12.I.**
Item 12.02:	To review and approve the detailed syllabus of 1st and 2nd year B. Tech program under CBCS which will be effective from ACY 2017-2018.
	Proceedings 12.02: The detailed syllabus of the courses for B Tech – 2nd Year (3rd and 4th Semesters) effective from 2017-2018 are reviewed. **Suggestions Received:** ▪ The depths of contents of different courses are discussed at length. ▪ The contact hours required to cover the proposed topics are verified and required changes are suggested. ▪ For **EE281** (Electrical Engineering Materials) (University Elective I): The concepts of different conducting, insulating, magnetics and semiconductor material will be given. This will help students in later stage at designing of machines. ▪ For **EE282** (Electrical Power Utilization and Traction) (University Elective II): Electric heating, welding, Fundamentals of illumination and traction can be covered in this course. ▪ For **EE241**: Analog and Digital Electronics, course contents are discussed and finalized.

	For this course, more useful and fundamental book "Design with Operational Amplifier and analog Integrated Circuits, Sergio Franco, McGraw Hill" is suggested. In addition to existing test kits in analog and digital electronics lab, "Analog Discovery Kit" is suggested. ▪ For **EE242**: Circuit Theory, the contents are found suitable. Following new books for circuit theory are proposed. 1. Electric Circuit Analysis, K.S. Sureshkumar, Pearson Education, India 2. Basic Circuit Theory, Charles A. Desoer and Ernest S. Kuh, McGraw Hill ▪ For **EE243**: Electrical Measurements and Industrial Instrumentation, the conventional topics on measurement such as resistance measurement, different AC bridges, shunts and multipliers should be incorporated. The digital methods for power measurement should be discussed. ▪ For **EE244**: Electrical Power Generation and its Economics, the contents are found suitable. ▪ For **EE245**: Control System, state space methods should be limited as compared to other methods. The methods for designing controller structure and compensator designs are suggested to include. ▪ For **EE246** Microprocessor & Microcontrollers, the syllabus is well designed. ▪ For **EE247**: Transformers and Induction Machines, the combination of two AC machines will work well; the portion of the commissioning of transformer and motors need not to be discussed at 4th semester. ▪ Revised course of MA241 Engineering Mathematics III, which is passed in respective BoS will be introduced in third semester of AY 2017-18 **Resolution 12.02:** ▪ The suggestions received from BoS members are incorporated and detailed syllabi for B Tech – 2nd Year (3rd and 4th Semesters) effective from 2017-2018 is approved and is attached in **Annexure – 12.II.**
Item 12.03	To approve the teaching and examination scheme of M. Tech program under Choice Based Credit System (CBCS) effective from ACY: 2016-2017
	Proceedings 12.03: The teaching and examination scheme of M. Tech program under Choice Based Credit System (CBCS) effective from ACY: 2016-2017 is reviewed. **Suggestions Received:** ▪ The different core and elective courses offered at university level are reviewed. The courses under program core, program electives and cluster electives are also reviewed. **Resolution 12.03:**

	University elective courses are introduced. The teaching and examination scheme of M. Tech program under Choice Based Credit System (CBCS) effective from ACY: 2016-2017 is approved and attached in **Annexure – 12.III.**
Item 12.04	To review and approve the detailed syllabus of 1st and 2nd year M. Tech program under CBCS effective from ACY 2016-2017.
	Proceedings 10.04: The detailed syllabus of 1st and 2nd year M. Tech program under CBCS effective from ACY 2016-2017 is reviewed. **Suggestions Received:** **EE781 Optimization Techniques and EE782** The contents of all the course of 1st and 2nd semester of M. Tech are discussed at length. The courses under program electives and cluster electives are good and syllabus contents are well designed. Very good university electives are constructed by various BoS and listed in annexure IV. **Resolution 12.04:** The detailed syllabus of 1st and 2nd year M. Tech program under CBCS effective from ACY 2016-2017 is approved and attached in **Annexure – 12.IV**.
Item 12.05	To review and approve (a) T&E scheme and the detailed syllabus of 3rd year B. Tech program for a batch of 2015 entry and (b) T&E scheme and detailed syllabus of 4th year B. Tech program for a batch of 2014 entry
	Resolution 10.05: (a) T&E scheme and the detailed syllabus of 3rd year B. Tech program for a batch of 2015 entry and (b) T&E scheme and detailed syllabus of 4th year B. Tech program for a batch of 2014 entry are approved and attached in **Annexure 12.V and Annexure 12.VI.**
Item 12.06	Discussion on effective implementation of Outcome Based Education (OBE) and ICT based Teaching-Learning
	Suggestions Received: ▪ All faculty members must aware about each criteria defined by NBA. ▪ The proper understanding of mapping of POs, PEOs, COs and their assessment tools is required. ▪ Faculty contribution should be increased for publication, funded projects and consultancy. ▪ The usage of open course ware from NPTEL, MIT and BISAC must be increased.
Item 12.07	Introducing the new PG program in Electrical Engineering
	Suggestions Received: Following PG programs in Electrical Engineering are proposed. (1) Power Electronics and Drives (2) Renewable Energy (3) Automation and Control
Item 12.08	Suggestion regarding new UG programs in new Institute of Technology of Faculty of

	Technology and Engineering, CHARUSAT
	Suggestions Received: Following new UG programs in can be proposed along with CE, IT, ICT. (1) Mechanical Engineering (2) Instrumentation and Control (3) Bio Informatics
Item 12.09	Discussion regarding recent approval from NBA and scope for the improvement
	All invited BoS members congratulated the University, Institute and Department for getting "A" graded from NAAC and KCG as well as for getting NBA for three departments
Item 12.10	Approval of Examiners' Panel
	The examiners panels for B. Tech and M. Tech have been reviewed and approved. The approved examiner panel is attached in **Annexure 12.VII.**

Additional Items

Sr. No	**Agenda**	**Discussion/Suggestions**
1	Review of Exam Question Papers	Question papers of internal and university examination have been reviewed. The briefings about the continuous evaluation, freedom for pedagogy selection for faculty and execution of the practical sessions have been given to external BoS members. The quality of question papers are found satisfactory, but it is suggested to increase the weighatge on the questions that can increase the analytical and logical thinking ability of students.
2	Review of Result Analysis	The records of result analysis of both internal and university exam are maintained. The results of both the exams are generally discussed and analyzed in the department meeting as soon as the exam gets over and the necessary actions are decided. The YoY comparisons of the results are also discussed and the figures are acceptable. The efforts should be given to again improve the results at all levels. The conduction of the remedial coaching for weaker students has been appreciated by the members.
3	Review of Placement Records	The campus placement of the student needs to be increased. More efforts are required to invite the companies for placement. The aptitude sessions organized for the students are appreciated. It is advised to keep extra technical session to prepare the students for technical skills.
4	Review of B. Tech and M. Tech Projects works	The project titles for B. Tech and M. Tech are reviewed and found satisfactory. It is suggested to give more emphasis on hardware based projects at B. Tech level. For M. Tech, the extensive use of licenses software may help the students to solve/reproduce the IEEE journal papers. Paper presentation for M. Tech students should be made compulsory.
5	Review of Feedback from Students, Identification of slow learners, Counseling	Review pattern for the students feedback and actions after the feedback have been explained. It is an useful component to improve the performance of teacher and T-L practices. The student counseling activities are very appreciated by all the members.

	activities	

Dr. Praghnesh Bhatt
Chairman
Board of Studies (EE)

HEAD OF DEPARTMENT
Dept. of Electrical Engg.
Chandubhai S. Patel Institute of Technology
At. & Po. Changa-388421., Ta. Petlad,
Dist. : Anand. (Gujarat)

Annexure 12.I & II: TEACHING & EXAMINATION SCHEME FOR B TECH PROGRAMME IN ELECTRICAL ENGINEERING (CBCS) Entry Year: 2016

CHAROTAR UNIVERSITY OF SCIENCE & TECHNOLOGY (CHARUSAT)											
TEACHING & EXAMINATION SCHEME FOR B TECH PROGRAMME IN ELECTRICAL ENGINEERING (CBCS) Entry Year: 2016											
Level	**Course Code**	**Course Title**	**Teaching Scheme**				**Examination Scheme**				
			Contact Hours			**Credit**	**Theory**		**Practical**		**Total**
			Theory	**Practical/Tutorial**	**Total**		**Internal**	**External**	**Internal**	**External**	
Level 1	HS101A- HS106A	A Course on Liberal Arts	2		2	2			50	50	**100**
	MA141	Engineering Mathematics I	4	1	5	4	30	70	0	0	**100**
	ME141	Engineering Graphics	2	4	6	4	30	70	50	50	**200**
	PY141	Engineering Physics	3	2	5	4	30	70	25	25	**150**
	CL141	Engineering Mechanics	4	2	6	5	30	70	25	25	**150**
	ME142	Workshop Practices	0	2	2	1			25	25	**50**
		Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra-curricular &co curricular			10						
			15	**11**	**36**	**20**	**120**	**280**	**175**	**175**	**750**
	HS 121A	English Language & Literature	2		2	2	25	25	25	25	**100**
	MA142	Engineering Mathematics II	4	1	5	4	30	70			**100**
	CL142	Environmental Science	2	0	2	2	30	70			**100**
	IT141	Fundamentals of Computer Programming	3	2	5	4	30	70	25	25	**150**
	ME143	Basics of Civil & Mechanical Engineering	4	2	6	5	30	70	25	25	**150**
	EE141	Basics of Electronics & Electrical Engineering	4	2	6	5	30	70	25	25	**150**
		Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra-curricular &co curricular			10						
			19	**7**	**36**	**22**	**175**	**375**	**100**	**100**	**750**

	HS122A/HS131A	Values and Ethics/Philosophy	2		2	2	30	70			**100**
	MA241	Engineering Mathematics III	4	0	4	4	30	70			**100**
	EE241	Analog and Digital Electronics	4	2	6	5	30	70	25	25	**150**
	EE242	Circuit Theory	4	2	6	5	30	70	25	25	**150**
	EE243	Electrical Measurements and Industrial Instrumentation	4	2	6	5	30	70	25	25	**150**
	XXXXX	University Elective- I	2	0	2	2	30	70			**100**
		Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra-curricular &co curricular			10						
Level 2			**20**	**6**	**36**	**23**	**180**	**420**	**75**	**75**	**750**
	HS127.01A/HS133A/ HS123.01A	Communication Skills-2/ Creativity, problem Solving and Innovation/ Critical Thinking and Logic	2		2	2	50	50			**100**
	EE244	Electrical Power Generation and its Economics	4	0	4	4	30	70			**100**
	EE245	Control Systems	4	2	6	5	30	70	25	25	**150**
	EE246	Microprocessor & Microcontrollers	4	2	6	5	30	70	25	25	**150**
	EE247	Transformers and Induction Machines	4	4	8	6	30	70	50	50	**200**
	XXXXX	University Elective- II	2	0	2	2	30	70			**100**
		Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra-curricular &co curricular			7						
			20	**8**	**35**	**24**	**200**	**400**	**100**	**100**	**800**

Level 3	HS124.01A	Professional Communication I	2		2	2			30	70	**100**
	EE341	Electrical Power Transmission and Distribution	4	2	6	5	30	70	25	25	**150**
	EE342	Synchronous and DC Machines	4	4	8	6	30	70	50	50	**200**
	EE343	Power Electronics & Drives I	4	2	6	5	30	70	25	25	**150**
	EE344	Minor Project I	0	4	4	2			50	50	**100**
	EE345	Electrical Product Survey				2			50	50	**100**
	EE350	Summer Internship I		.3	3	3			75	75	**150**
	EE371-EE372	Programme Elective I	3	2	5	4	30	70	25	25	**150**
		Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra-curricular &co curricular			6						
			17	**14**	**37**	**26**	**120**	**280**	**255**	**295**	**950**
	HS125A	**Society, Governance and International Studies**	2		2	2	25	25	25	25	**100**
	EE346	Digital Signal Processing	3	2	5	4	30	70	25	25	**150**
	EE347	Programmable Logic Controllers and Industrial Automation	3	2	5	4	30	70	25	25	**150**
	EE348	Power Electronics & Drives II	3	2	5	4	30	70	25	25	**150**
	EE349	Fault Analysis and Switchgear	4	2	6	5	30	70	25	25	**150**
	EE360	Minor Project II	0	4	4	2	0	0	50	50	**100**
	EE376-EE377	Programme Elective II	3	2	5	4	30	70	25	25	**150**

		Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra-curricular &co curricular			4						
			18	**14**	**36**	**25**	**175**	**375**	**200**	**200**	**950**
Level 4	EE441	Power System Operations and Control	4	2	6	5	30	70	25	25	**150**
	EE442	Power System Protection	4	2	6	5	30	70	25	25	**150**
	EE443	Electrical Machine Design	4	4	8	6	30	70	25	25	**150**
	EE444	Simulation Lab	0	2	2	1			50	50	**100**
	EE445	Summer Practical Training				3			50	50	**100**
	EE471-EE472	Programme Elective III	4	2	6	5	30	70	25	25	**150**
		Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra-curricular &co curricular			2						
			16	**12**	**30**	**25**	**120**	**280**	**200**	**200**	**800**
	EE446	Commissioning and Testing of Electrical Equipment	4	2	6	5	30	70	25	25	**150**
	EE447	Modeling and Control of Renewable Energy Sources	4	2	6	5	30	70	25	25	**150**
	EE448	Major Project				9			250	250	**500**
	EE473-EE474	Programme Elective IV	4	2	6	5	30	70	25	25	**150**
			12	**6**	**18**	**27**	**90**	**210**	**325**	**325**	**950**

CHAROTAR UNIVERSITY OF SCIENCE & TECHNOLOGY (CHARUSAT)											
		Hours				Credits	Marks				
			Theory	Practical	Total						
			137	78	264	192	1180	2620	1430	1470	6700

LIST OF ELECTIVES FOR B TECH PROGRAMME IN ELECTRICAL ENGINEERING

University Electives for Level 2

	UNIVERSITY ELECTIVE 1	UNIVERSITY ELECTIVE 2	
EE281	Electrical Engineering Materials	EE282	Electrical Power Utilization and Traction

Electives for Level 3

	PROGRAMME ELECTIVE 1	PROGRAMME ELECTIVE 2	
EE371	Advanced Microcontrollers	**EE376**	Special Electrical Machines and Applications
EE372	VLSI Technology and Design	**EE377**	Embedded System

Electives for Level 4

	PROGRAMME ELECTIVE 3	PROGRAMME ELECTIVE 4	
EE471	Power Electronics Applications in Power System	**EE473**	Smart Grid and Distribution Generation
EE472	Advances in Power System	**EE474**	Energy Auditing and Management

University Elective I & II:	**Occupational Health and Safety, IPR, Regulatory Affairs, Contract Management,**
(Will be available in a Common Slot)	**Energy Management, Research Methodology, Entrepreneurship, Project Management, First AID and Life Support**
	Risk Management, Disaster Management, Scientific Instrumentation & Measurement, Operation Research, **Business Environment, Quality Assurance, Computer Programming, Numerical Analysis, Web Designing, Cyber Security etc**

Annexure 12.III & IV TEACHING AND EXAMINATION SCHEME FOR M Tech in Electrical Engineering (Electrical Power Systems)

Semester	Course Code	Course Title	Teaching Scheme				Examination Scheme				
			Theory	Practical/Tutorial	Total	Credit	Theory		Practical		Total
							Internal	External	Internal	External	
Sem 1	EE741	Modeling & Simulation of Electrical Machines (PC - 1)	4	2	6	5	30	70	25	25	150
	EE742	Modern Power System Operations (PC - 2)	3	2	5	4	30	70	25	25	150
	EE743	Advanced Power Electronics in Power Systems (PC - 3)	3	2	5	4	30	70	25	25	150
	EE7XX	Programme Elective-1 (PE - 1)	3	2	5	4	30	70	25	25	150
	EE7XX	Program Cluster Elective - 1 (PCT - 1)	3	2	5	4	30	70	25	25	150
	HS701	Advanced Critical Thinking & Logic (UC - 1)	2	0	2	2	30	70	0	0	100
	XXXXX	University Elective 1 (UE - 1)	2	0	2	2	30	70	0	0	100
			20	**10**	**30**	**25**	**210**	**490**	**125**	**125**	**950**
Sem 2	EE744	Advanced Power System Dynamics & Stability (PC - 4)	4	2	6	5	30	70	25	25	150
	EE745	FACTS & HVDC Transmission (PC - 5)	3	2	5	4	30	70	25	25	150

	EE746	Advanced Power System Protection (PC - 6)	3	2	5	4	30	70	25	25	150
	EE7XX	Programme Elective - 2 (PE - 2)	3	2	5	4	30	70	25	25	150
	EE7XX	Program Cluster Elective – 2skills	3	2	5	4	30	70	25	25	150
	HS702	Academic Writing & communication (UC-2)	0	2	2	2	0	0	30	70	100
	XXXXX	University Elective 2 (UE - 2)	2	0	2	2	30	70	0	0	100
			18	**12**	**30**	**25**	**180**	**420**	**155**	**195**	**950**

Programme Electives of Semester 1 and 2

Programme Electives 1 (PE 1) for Semester 1			**Programme Electives 2 (PE 2) for Semester 2**	
EE761	Control System Engineering		EE763	Modeling and Simulation of Renewable Energy Sources
EE762	Engineering Optimization Techniques		EE764	Distributed Generation and Smart Grid

Cluster Electives of Semester 1 and 2

Program Cluster Electives 1 (CT 1) for Semester 1			**Program Cluster Electives 2 (CT 2) for Semester 2**	
EE771	Digital Signal Processing & its Application		EE772	Restructuring & Deregulation of Power Systems
IT767	Micro device Programming		IT768	Applied Cryptography
EC767	Embedded System Design		EC768	Digital Image & Speech Processing
CE767	Operating System Design & Concepts		CE768	Software Project Management & Quality Assurance

University Electives of Semester 1 and 2

University Electives (UE 1) for Semester 1			**University Electives (UE 2) for Semester 2**	
MA771	Reliability and Risk Analysis		EE782	Energy Audit and Management
EE781	Optimization Techniques		CE771	Project Management
ME781	Occupational Health and Safety		IT771	Cyber Security and Laws
CE772	Research Methodology		CA 842	Mobile Application Development
CA730	Internet & Web Designing		PT796	Fitness & Nutrition
PT795	Health & Physical Activity		NR 752	Epidemiology and Community Health
NR 751	Women's Health		OC733	Introduction to Polymer Science
RD701	Introduction to Analytical Techniques		MB651	Software based Statistical Analysis
RD702	Introduction to Nano science& Technology		PH826	Intellectual Property Rights

MB650	Creative Leadership		MA772	Design of Experiments	
PH825	Community Pharmacy Ownership				

Semester	Course Code	Course Title	Credit	Examination Scheme					
				Internal		External			Total
				Progress Report	Progress Seminar	Report	Seminar	Viva	
Sem 3	EE811	Project Preliminaries	4	50	50	0	50	50	200
	EE812	Project Phase 1	18	100	100	100	100	100	500
			22	**150**	**150**	**100**	**150**	**150**	**700**
Sem 4	EE813	Project Phase 2	30	200	200	200	200	200	1000
			30	**200**	**200**	**200**	**200**	**200**	**1000**
		Grand Total	**102**						**3600**

Annexure 12.V TEACHING AND EXAMINATION SCHEME FOR Final Year B Tech in Electrical Engineering Entry Year: 2014

Sem	Course Code	Course title	Teaching Scheme				Examination Scheme				Total
			Contact Hrs.			Credits	Theory		Practical		
			Theory	Practical	Total		Internal	External	Internal	External	
Final Sem-VII	EE 401.01	Electrical Machine Design - I	3	2	5	4	30	70	25	25	150
	EE 402	Electrical Power System - IV	3	2	5	4	30	70	25	25	150
	EE 403	Power Electronics & Drives - II	4	2	6	5	30	70	25	25	150
	EE 404	Energy Conservation and Management	3	0	3	3	30	70			100
	EE 405	Power System Protection	4	2	6	5	30	70	25	25	150
		Elective - I	4	2	6	5	30	70	25	25	150
			21	**10**	**31**	**26**	**180**	**420**	**125**	**125**	**850**
Final Sem-VIII	EE 406.01	Electrical Machine Design - II	3	2	5	4	30	70	25	25	150
	EE 407	Commissioning of Electrical Equipments	3	2	5	4	30	70	25	25	150
	EE 408	Power System Stability & Control	4	2	6	5	30	70	25	25	150
	EE 409	Digital Signal Processing	3	2	5	4	30	70	25	25	150
		Elective - II	4	2	6	5	30	70	25	25	150
	EE 410.01	Project	0	6	6	3	0	0	50	100	150
			17	**16**	**33**	**25**	**150**	**350**	**175**	**175**	**900**

Code	Elective - I		Code	Elective - II
EE 414	Power System Operations		EE 415	Advances in Power System
EE 418	Applications of Advanced Microcontrollers in Electrical Engineering-I		EE 419	Applications of Advanced Microcontrollers in Electrical Engineering-II

Annexure 12.VI TEACHING AND EXAMINATION SCHEME FOR THIRD Year B Tech in Electrical Engineering Entry Year: 2015

Sem	Course Code	Course Title	Teaching Scheme					Examination Scheme				
			Contact Hours				Credit	Theory		Practical		Total
			Theory	Practical	Tutorial	Total		Internal	External	Internal	External	
TY Sem-V	EE301	Electrical Machines-II	4	2	0	6	5	30	70	25	25	150
	EE302.01	Electrical Power System-II	4	0	0	4	4	30	70	0	0	100
	EE303.01	Microcontrollers and Applications	3	2	0	5	4	30	70	25	25	150
	EE304.01	Industrial Instrumentation	3	2	0	5	4	30	70	25	25	150
	EE305	Power Electronics & Drives-I	4	2	0	6	5	30	70	25	25	150
	EE311	Simulation Lab-I	0	2	0	2	1	0	0	25	25	50
	HS124.01A	Professional Communication	**2**		**0**	**2**	**2**	**0**	**0**	**30**	**70**	**100**
			20	**10**		**30**	**25**	**150**	**350**	**155**	**195**	**850**
TY Sem-VI	EE306.01	Electrical Machines-III	4	2	0	6	5	30	70	25	25	150
	EE307	Electrical Power System-III	4	2	0	6	5	30	70	25	25	150
	EE308.01	High Voltage Engineering	3	2	0	5	4	30	70	25	25	150
	EE309.01	Electrical Power Utilisation & Traction	3	0	0	3	3	30	70			100
	EE310.01	Programmable Logic Controllers and Industrial Automation	4	2	0	6	5	30	70	25	25	150
	EE312	Simulation Lab-II	0	2	0	2	1	0	0	25	25	50
	HS125.01A/ HS130A/ HS134A	Society, Governance and International Studies/ Law and Justice/ Contributor Personality Development	2		**0**	**2**	**2**	**25**	**25**	**25**	**25**	**100**

			20	**10**		**30**	**25**	**175**	**375**	**150**	**150**	**850**

Annexure 12.VII Examiner Panel List for B. Tech and M. Tech Examination

Examiner Panel for Electrical Engineering (External Examiners)

Sr.No.	Examiner Name	Institute	Contact No	Email id
1	Dr. B.R.Parekh	BVM Engg. College	9879256663	brp_bvm@yahoo.co.in
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Examiner Panel for Electrical Engineering (Internal Examiners)

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Minutes – 12th Board of Studies Meeting
M&V Patel Department of Electrical Engineering
Faculty of Technology & Engineering, CHARUSAT

Date : September 3, 2016, Saturday
Time : 10:00 am onwards
Venue: Room No: 102, HOD (EE), CSPIT, CHARUSAT Campus

The 12th meeting of Board of Studies, M&V Patel Department of Electrical Engineering, Faculty of Technology and Engineering (FTE), Charotar University of Science and Technology (CHARUSAT) was held on 3/9/2016 at 10:00 a.m. at Department of Electrical Engineering, CSPIT, CHARUSAT Campus. Following members were present:

1	Dr. Praghnesh Bhatt	**Chairman;**	Professor & Head, Department of Electrical Engineering,	
2	Dr. Kartik Pandya	**Member;**	Professor, Department of Electrical Engineering,	
3	Dr. Bhinal Mehta	**Member;**	Assistant Professor Department of Electrical Engineering,	
4	Mr. Nilay Patel	**Member;**	Assistant Professor Department of Electrical Engineering,	
5	Ms. Pankita Mehta	**Member;**	Assistant Professor Department of Electrical Engineering,	Pankita
6	Mr. Jeevanadhar Joshi	**Member;**	Assistant Professor, Department of Electrical Engineering,	
7	Dr. Sanjay R. Joshi	**External Member;**	Principal Government Engineering College, Valsad	
8	Dr. Bhavik Suthar	**External Member;**	Associate Professor Government Engineering College, Modasa	
9	Dr Santosh Vora	**External Member;**	Professor Department of Electrical Engineering Nirma University, Ahmedabad	
10	Dr Vijay Shah	**External Member;**	R&D Specialist, BU-PPMV, Vadodara	
11	Mr. Kirat Pandya	**External Member;**	AGM, Schneider Electricals Ltd, Vadodara	
12	Mr. Sanjay Mahagaokar	**External Member;**	Dy General Manager Engineering and Technology Rotomag Power Drives Ltd	

Minutes –14th Board of Studies Meeting
M&V Patel Department of Electrical Engineering
Faculty of Technology & Engineering, CHARUSAT

Date : August 26, 2017, Saturday
Time : 10:00am onwards
Venue: Room No: 102, HOD (EE), CSPIT, CHARUSAT Campus

The 14thmeeting of Board of Studies, M&V Patel Department of Electrical Engineering, Faculty of Technology and Engineering (FTE), Charotar University of Science and Technology (CHARUSAT) was held on 26/8/2017 at 10:00 a.m. at M&V Patel Department of Electrical Engineering, CSPIT, CHARUSAT Campus. Following members were present:

1	Dr. Praghnesh Bhatt	**Chairman;**	Professor & Head, Department of Electrical Engineering,	
2	Dr. KartikPandya	**Member;**	Professor, Department of Electrical Engineering,	
3	Dr. Bhinal Mehta	**Member;**	Assistant Professor Department of Electrical Engineering,	
4	Mr. Nilay Patel	**Member;**	Assistant Professor Department of Electrical Engineering,	
5	Mr. Maulik Shah	**Member;**	Assistant Professor Department of Electrical Engineering,	
6	Mr. Mhir Bhatt	**Member;**	Assistant Professor Department of Electrical Engineering,	
7	Mr. Jivanadhar Joshi	**Member;**	Assistant Professor, Department of Electrical Engineering,	
8	Mr. Pratik Mochi	**Member;**	Assistant Professor, Department of Electrical Engineering,	
9	Dr. Sanjay R. Joshi	**External Member;**	Principal Government Engineering College, Valsad	
10	Dr. BhavikSuthar	**External Member;**	Associate Professor Government Engineering College, Modasa	
11	Dr. Santosh Vora	**External Member;**	Professor, Department of Electrical Engineering Nirma University, Ahmedabad	
12	Dr. Vijay Shah	**External Member;**	R&D Specialist, BU-PPMV, Vadodara	
13	Mr. Kirat Pandya	**External Member;**	AGM, Schneider Electricals Ltd, Vadodara	

14	Mr. Sanjay Mahagaokar	**External Member;**	Dy General Manager Engineering and Technology, Rotomag Power Drives.	

Initiation:

Dr. Kartik Pandya welcomed all the members of Board of Studies.

Agenda Proceedings & Resolutions:-

Item 14.01:	To review the T & E scheme for entire B TECH and MTECH programs under CBCS. Suggestions are invited to change T & E scheme of 3rd -8th semester of BTECH
	Proceedings 14.01: The teaching and examination scheme of B. Tech and M. Tech. programs under Choice Based Credit System (CBCS) for 3rd to 8th Semester effective from ACY 2017-2018 had been discussed in details. **Suggestions Received:** ▪ The proposed structure of CBCS has been discussed in detail along with core and different elective courses. ▪ The courses are appropriately distributed among the major areas of electrical engineering such as power system, electrical machines, power electronics, microprocessors & microcontrollers along with required supplementary courses. ▪ More program electives should be incorporated in the third year and final year of B. Tech. program. ▪ The students must know the fundamental of the subjects and they must have knowledge about the various electrical products available in the market along with its specifications and prices. ▪ The students should have the opportunities to develop hardware-based projects to learn the theoretical concepts more effectively. The preparation of the complete project report enhances their writing, presentation and communication skills. ▪ Power generation by renewable energy sources and its modeling concepts needs to be imparted, as they are the present day demand. ▪ The operating paradigm of the distribution system has changed drastically and its concepts can be covered by offering the courses on smart grid, micro grid and distributed generation. ▪ Early exposure to practical/industrial training makes the students familiar with industrial developments and practices. The projects/training ▪ The curriculum structure of other universities such as GTU, Nirma, Amity, IITs, NIT, NUS, and University of Illinois are also referred and discussed. The goal of designing curriculum structure is to prepare the students for GATE, other competitive exams and for further studies.

	▪ The university core and elective courses are also reviewed and they are found suitable to inculcate values & ethics, to enhance critical thinking & logic, to improve communication skills and to increase basic analytical ability among the students. New subjects of Humanities are incorporated in second year level from AY 2017-18 as the courses were discussed in respective BoS. The courses are listed as under. HS131A Philosophy HS122A Values and Ethics HS133A Creativity, Problem Solving and Innovation HS127.01 Communication Skills II HS123.01 Critical Thinking and Logic **Resolution 14.01:** ▪ Based on the extensive discussion and suggestion received from the BoS members, the teaching and examination scheme of B. Tech Program under CBCS is finalized and attached in **Annexure 14.I.**
Item 14.02:	To prepare and review the detailed syllabus of 3rd year B.TECH program under CBCS.
	Proceedings 14.02: The detailed syllabus of the courses for B Tech – 3rdYear (5thand 6thSemesters) is reviewed. **Suggestions Received:** **EE341: Electrical Power Transmission and Distribution** 1 Role of vector group for design purpose should be included. 2 Before design of transmission line, transmission line geometry and type of field should be included. 3 Visit to sub-station should be reflected in syllabus. 4 Most of experiments are study experiments. 5 Study of cable should be included. 6 Restrict the transmission line parameters to lower values. **EE342: Synchronous and DC Machines** 1 Four hour of lab session is good decision. 2 Applications of machines should be included by case study. 3 DC machine should be covered first and then Synchronous machine later in the syllabus. 4 Chapter numbers should be changed accordingly. 5 Subject is too long. 6 Machine winding portion should be excluded from theory and should be included in lab. 7 Number of lab experiments can be increased up to 20.

	8 A small topic of machine materials and permanent magnet can be included. 9 Universal motor should be included in this course. 10 For visualization, a print or drawing sheet can be prepared for machine winding. 11 Machine re-winder can be demonstrated in lab. 12 Visit can be arranged for students to see winding process of machine. Transform theory should be included in this course so it can help in Drives. **EE343:Power Electronics & Drives I** 1 Define subtopics of MOSFET and IGBTs. 2 Addition of datasheets of All devices. 3 Experiments should be hands on like Choppers, Controlled rectifier. 4 Addition of experiments based on driver circuits and SCR firing circuits. 5 Real time Application should be included. 6 AC-DC converter is for 10 hours which is very less. 7 Mention components in detail in syllabus. Define attributes. 8 comparative analysis of various component should be included. **EE344: Minor Project I** 1 Students will be given minor project. 2 The level of project should be primary knowledge level. **EE345: Electrical Product Survey** 1 Specification, market survey, identification of different products like wire, cable, switchgear can be done. 2 Electronic component and IC data sheets can be studied by students. 3 Student groups should be formed to understand above concepts and evaluated based on presentation. **EE350: Summer Internship I** 1 This course can be added in 5^{th} semester. 2 Summer break between 4^{th} and 5^{th} semester can be effectively utilized by students. **EE371: Advanced Microcontroller (Programme Elective I)** 1 Embedded C Language Programming for Microcontroller and keil will be taught. 2 PCA and its application and communication protocol can be added in syllabus. **EE372: VLSI Technology and Design (Programme Elective I)** 1 Introduction and fabrication of MOSFET must be covered.

2 MOS combination and sequential circuits can be added in this course.

EE346:Digital Signal Processing

1 There should be a separate compulsory subject for learning science of ' Signals & System's'
2 Its not better idea to cover the above as a part of a chapter in course of Digital Signal Processing.
3 The Last chapter may be removed with more emphasis on first chapter.

EE347:Programmable Logic Controllers and Industrial Automation

1 Syllabus should have Fulfillment/justification of course title.
2 It can be an Elective Course.
3 Ladder diagram portion can be reduced in terms of time.
4 Include SMI, graphical Language.

EE348:Power Electronics & Drives II

1 Syllabus is very compressive.
2 Adding of Advanced Power Electronics in Elective courses. So multilevel inverters and other advanced topics can be include in this course.

EE349: Fault Analysis and Switchgear

1 Symmetrical component should be given less hour.
2 Time can be increased for Types of CB.
3 More reference books can be added.

EE360: Minor Project II

1 Students will be given minor project.
2 The level of project should be moderate knowledge level.
3 Arduino based/ microcontroller based project will enhance the skill of students.

EE376: Special Electrical Machines and Applications (Programme Elective II)

1 Basics of magnetic theory and need of magnets should be included.
2 More text book to be included for Induction Generator.
3 More time should be given to permanent magnet materials and PM motors.
4 Schrage motor portion can be given less time.
5 Servo motor should be given more time regarding their characteristic, response time etc.
6 For special machine, a book entitled "Special Electrical Machine" by D. G. Miller can be included.
7 Stepper motor, servo-motor, PM motor should be in lab experiment.
8 Switched reluctance motor should be included as a topic in details.

	9 BLDC motor connected with solar power should be included. 10 Use of special machine with renewable energy can be included. **EE377: Embedded System (Programme Elective II)** 1 The syllabus is well organized and almost covering everything required in simpler manner. **Resolution 14.02:** ▪ The suggestions received from BoS members are incorporated and detailed syllabi for B Tech – 3rdYear (5thand 6thSemesters) effective from 2018-2019 is approved and is attached in **Annexure – 14.I.**
Item 14.03	To review the detailed syllabus of 1st year M.TECH program under CBCS for any necessary changes.
	Proceedings 14.03: The teaching and examination scheme of M. Tech program under Choice Based Credit System (CBCS) effective from ACY: 2016-2017 is reviewed. T & E scheme and courses of M. Tech. (PE) are discussed. This program may start from AY 2018-19. **Suggestions Received:** **EE751: Power Electronics Devices and Circuits** 1 Basics of all semiconductors must be included 2 Time can be increased for Design of magnetics circuits. 3 Resonant convertors should cover all convertors. 4. Driver circuits should be cover more topics. **EE766: Power Quality** 1 Harmonics should be given more weightage. 2 Power frequency and hogh frequency phenomena should be included 3 Importance of power quality issue should be introduced. **EE767: Digital Control Systems** 1 Time response and frequency response topic will be given more importance 2 State-space analysis should be given more weightage. 3 Controller design. **EE756: Control of Electric Drives**

	1 Syllabus designed is fine **EE757: Advanced Power Electronic Convertors** 1 Syllabus designed is fine 2 More books can be suggested **EE768: Power Electronics for Renewable Energy Sources** 1 Power convertors for Solar and PV should be discussed in depth. 2 Reference theory concept must be included. **EE769: Control of Special Electrical Machines** 1 Syllabus designed is fine 2. More time can be spend for basic topics. ▪ New subjects of Humanities are incorporated from AY 2017-18 as the courses were discussed and approved in respective BoS. ▪ HS704A Academic Speaking ▪ HS705A Academic Writing **Resolution 14.03:** The suggestions received from BoS members are incorporated and the teaching and examination scheme of M. Tech (Electrical Power System) program under Choice Based Credit System (CBCS) effective from ACY: 2016-2017 is approved and attached in **Annexure – 14.II.** The teaching and examination scheme of M. Tech (Power Electronics) program under Choice Based Credit System (CBCS) effective from ACY: 2016-2017 is approved and attached in **Annexure – 14.III.**
Item 14.04	Discussion on effective implementation of Outcome Based Education (OBE) and ICT based Teaching-Learning
	Suggestions Received: ▪ All faculty members must aware about each criteria defined by NBA. ▪ The proper understanding of mapping of POs, PEOs, Cos and their assessment tools is required. ▪ Faculty contribution should be increased for publication, funded projects and consultancy. ▪ The usage of open course ware from NPTEL, MIT and BISAC must be increased.
Item	Introducing the new PG program in Electrical Engineering

14.05	**Suggestions Received:** Following PG programs in Electrical Engineering are proposed. (1) Power Electronics and Drives (2) Renewable Energy (3) Automation and Control
Item 14.06	Discussion regarding recent approval from NBA and scope for the improvement
	All invited BoS members congratulated the University, Institute and Department for getting "A" graded from NAAC and KCG as well as for getting NBA for three departments
Item 14.07	Approval of Examiners' Panel
	The examiners panels for B. Tech and M. Tech have been reviewed and approved. The approved examiner panel is attached in **Annexure 14.VII.**

Additional Items

Sr. No	Agenda	Discussion/Suggestions
1	Review of Exam Question Papers	Question papers of internal and university examination have been reviewed. The briefings about the continuous evaluation, freedom for pedagogy selection for faculty and execution of the practical sessions have been given to external BoS members. The quality of question papers are found satisfactory, but it is suggested to increase the weighatge on the questions that can increase the analytical and logical thinking ability of students.
2	Review of Result Analysis	The records of result analysis of both internal and university exam are maintained. The results of both the exams are generally discussed and analyzed in the department meeting as soon as the exam gets over and the necessary actions are decided. The YoYcomparisons of the results are also discussed and the figures are acceptable. The efforts should be given to again improve the results at all levels. The conduction of the remedial coaching for weaker students has been appreciated by the members.
3	Review of Placement Records	The campus placement of the student needs to be increased. More efforts are required to invite the companies for placement. The aptitude sessions organized for the students are appreciated. It is advised to keep extra technical session to prepare the students for technical skills.
4	Review of B. Tech and M. Tech Projects works	The project titles for B. Tech and M. Tech are reviewed and found satisfactory. It is suggested to give more emphasis on hardware based projects at B. Tech level. For M. Tech, the extensive use of licenses software may help the students to solve/reproduce the IEEE journal papers. Paper presentation for M. Tech students should be made compulsory.
5	Review of	Review pattern for the students feedback and actions after the feedback have been

	Feedback from Students, Identification of slow learners, Counseling activities	explained. It is an useful component to improve the performance of teacher and T-L practices. The student counseling activities are very appreciated by all the members.

Dr. Praghnesh Bhatt
Chairman
Board of Studies (EE)

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Annexure 14.I: TEACHING & EXAMINATION SCHEME FOR B TECH PROGRAMME IN ELECTRICAL ENGINEERING (CBCS) Entry Year: 2016

CHAROTAR UNIVERSITY OF SCIENCE & TECHNOLOGY (CHARUSAT)											
TEACHING & EXAMINATION SCHEME FOR B TECH PROGRAMME IN ELECTRICAL ENGINEERING (CBCS) Entry Year: 2016											
Level	**Course Code**	**Course Title**	**Teaching Scheme**				**Examination Scheme**				
			Contact Hours			**Credit**	**Theory**		**Practical**		**Total**
			Theory	**Practical/Tutorial**	**Total**		**Internal**	**External**	**Internal**	**External**	
Level 1	HS101A-HS106A	A Course on Liberal Arts	2		2	2			50	50	**100**
	MA141	Engineering Mathematics I	4	1	5	4	30	70	0	0	**100**
	ME141	Engineering Graphics	2	4	6	4	30	70	50	50	**200**
	PY141	Engineering Physics	3	2	5	4	30	70	25	25	**150**
	CL141	Engineering Mechanics	4	2	6	5	30	70	25	25	**150**
	ME142	Workshop Practices	0	2	2	1			25	25	**50**
		Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra-curricular & co curricular			10						
			15	**11**	**36**	**20**	**120**	**280**	**175**	**175**	**750**
	HS 121A	English Language & Literature	2		2	2	25	25	25	25	**100**
	MA142	Engineering Mathematics II	4	1	5	4	30	70			**100**
	CL142	Environmental Science	2	0	2	2	30	70			**100**
	IT141	Fundamentals of Computer Programming	3	2	5	4	30	70	25	25	**150**
	ME143	Basics of Civil & Mechanical Engineering	4	2	6	5	30	70	25	25	**150**
	EE141	Basics of Electronics & Electrical Engineering	4	2	6	5	30	70	25	25	**150**
		Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra-curricular &co curricular			10						
			19	**7**	**36**	**22**	**175**	**375**	**100**	**100**	**750**

	HS122A/HS131A	Values and Ethics/Philosophy	2		2	2	30	70			**100**
	MA241	Engineering Mathematics III	4	0	4	4	30	70			**100**
	EE241	Analog and Digital Electronics	4	2	6	5	30	70	25	25	**150**
	EE242	Circuit Theory	4	2	6	5	30	70	25	25	**150**
	EE243	Electrical Measurements and Industrial Instrumentation	4	2	6	5	30	70	25	25	**150**
	XXXXX	University Elective- I	2	0	2	2	30	70			**100**
		Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra-curricular & co curricular			10						
			20	**6**	**36**	**23**	**180**	**420**	**75**	**75**	**750**
Level 2	HS123.01A/ HS127.01A/ HS133A	Critical Thinking and Logic/ Communication skill 2/ Creativity, Problem Solving and Innovation	2		2	2	50	50			**100**
	EE244	Electrical Power Generation and its Economics	4	0	4	4	30	70			**100**
	EE245	Control Systems	4	2	6	5	30	70	25	25	**150**
	EE246	Microprocessor & Microcontrollers	4	2	6	5	30	70	25	25	**150**
	EE247	Transformers and Induction Machines	4	4	8	6	30	70	50	50	**200**
	XXXXX	University Elective- II	2	0	2	2	30	70			**100**
		Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra-curricular & co curricular			7						
			20	**8**	**35**	**24**	**200**	**400**	**100**	**100**	**800**

	HS124.01A	Professional Communication	2		2	2			30	70	**100**
	EE341	Electrical Power Transmission and Distribution	4		4	4	30	70			**100**
	EE342	Synchronous and DC Machines	4	4	8	6	30	70	50	50	**200**
	EE343	Power Electronics & Drives I	4	2	6	5	30	70	25	25	**150**
	EE344	Minor Project I	0	4	4	2			50	50	**100**
	EE345	Electrical Product Survey				2			50	50	**100**
	EE350	Summer Internship I		3	3	3			75	75	**150**
	EE371-EE372	Programme Elective I	4	2	6	5	30	70	25	25	**150**
	Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra curricular & co curricular				3						
			17	**14**	**36**	**29**	**120**	**280**	**255**	**295**	**1050**
Level 3	HSA134A	**Contributor Personality Development**	2		2	2			30	70	**100**
	EE346	Digital Signal Processing	3	2	5	4	30	70	25	25	**150**
	EE347	Programmable Logic Controllers and Industrial Automation	2	4	6	4	30	70	50	50	**200**
	EE348	Power Electronics & Drives II	3	2	5	4	30	70	25	25	**150**
	EE349	Fault Analysis and Switchgear	4	2	6	5	30	70	25	25	**150**
	EE360	Minor Project II	0	4	4	2	0	0	50	50	**100**
	EE376-EE377	Programme Elective II	3	2	5	4	30	70	25	25	**150**
	Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra curricular & co curricular				4						
			18	**14**	**36**	**25**	**175**	**375**	**200**	**200**	**950**

Level 4	EE441	Power System Operations and Control	4	2	6	5	30	70	25	25	**150**
	EE442	Power System Protection	4	2	6	5	30	70	25	25	**150**
	EE443	Electrical Machine Design	4	4	8	6	30	70	25	25	**150**
	EE444	Simulation Lab	0	2	2	1			50	50	**100**
	EE450	Summer Internship II				3			75	75	**100**
	EE471-EE473	Programme Elective III	4	2	6	5	30	70	25	25	**150**
		Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra curricular & co curricular			2						
			16	**12**	**30**	**25**	**120**	**280**	**200**	**200**	**800**
	EE446	Commissioning and Testing of Electrical Equipment	4	2	6	5	30	70	25	25	**150**
	EE447	Modeling and Control of Renewable Energy Sources	4	2	6	5	30	70	25	25	**150**
	EE448	Major Project				9			250	250	**500**
	EE476-EE478	Programme Elective IV	4	2	6	5	30	70	25	25	**150**
			12	**6**	**18**	**24**	**90**	**210**	**325**	**325**	**950**

CHAROTAR UNIVERSITY OF SCIENCE & TECHNOLOGY (CHARUSAT)											
		Hours				Credits	Marks				
			Theory	Practical	Total						
			137	78	264	192	1180	2620	1430	1470	6700

LIST OF ELECTIVES FOR B TECH PROGRAMME IN ELECTRICAL ENGINEERING

Electives for Level 2

	UNIVERSITY ELECTIVE 1	UNIVERSITY ELECTIVE 2	
EE281	Electrical Engineering Materials	EE282	Electrical Power Utilization and Traction

Electives for Level 3

	PROGRAMME ELECTIVE 1	PROGRAMME ELECTIVE 2	
EE371	Advanced Microcontrollers	**EE376**	Special Electrical Machines and Applications
EE372	VLSI Technology and Design	**EE377**	Embedded Systems

Electives for Level 4

	PROGRAMME ELECTIVE 3	PROGRAMME ELECTIVE 4	
EE471	Power Electronics Applications in Power System	**EE476**	Advances in power system
EE472	Communication Engineering	**EE477**	Internet of Things
EE473	High Voltage Engineering	**EE478**	Energy Conservation and Management

University Elective I & II:

(Will be available in a Common Slot)

Occupational Health and Safety, IPR, Regulatory Affairs, Contract Management,

Energy Management, Research Methodology, Entrepreneurship, Project Management, First AID and Life Support

Risk Management, Disaster Management, Scientific Instrumentation & Measurement, Operation Research,
Business Environment, Quality Assurance, Computer Programming, Numerical Analysis, Web Designing, Cyber Security etc

Annexure:14. II TEACHING AND EXAMINATION SCHEME FOR M Tech in Electrical Engineering (Electrical Power Systems)
Entry year 2017

Sem	Course Code	Course Title	Teaching Scheme				Examination Scheme				
			Theory	Practical/Tutorial	Total	Credit	Theory		Practical		Total
							Internal	External	Internal	External	
Sem 1	EE741	Modeling & Simulation of Electrical Machines (PC - 1)	4	2	6	5	30	70	25	25	150
	EE742	Modern Power System Operations (PC - 2)	3	2	5	4	30	70	25	25	150
	EE743	Advanced Power Electronics in Power Systems (PC - 3)	3	2	5	4	30	70	25	25	150
	EE7XX	Programme Elective-1 (PE - 1)	3	2	5	4	30	70	25	25	150
	EE7XX	Programme Cluster Elective - 1 (CT - 1)	3	2	5	4	30	70	25	25	150
	XXXX	University Elective 1 (UE - 1)	2	0	2	2	30	70	0	0	100
	HSXXX	HSS Elective -I	2		2	2	30	70	0	0	100
			20	10	30	25	210	490	125	125	950

Sem	Course Code	Course Title	Teaching Scheme				Examination Scheme				
			Theory	Practical/Tutorial	Total	Credit	Theory		Practical		Total
Sem 2	EE744	Advanced Power System Dynamics & Stability (PC - 4)	4	2	6	5	30	70	25	25	150
	EE745	FACTS & HVDC Transmission (PC - 5)	3	2	5	4	30	70	25	25	150
	EE746	Advanced Power System Protection (PC - 6)	3	2	5	4	30	70	25	25	150
	EE7XX	Programme Elective - 2 (PE - 2)	3	2	5	4	30	70	25	25	150
	EE7XX	Programme Cluster Elective - 2 (CT - 2)	3	2	5	4	30	70	25	25	150
	HS705A	Academic Writing	0	2	2	2	0	0	30	70	100
	XXXX	University Elective 2 (UE - 2)	2	0	2	2	30	70	0	0	100
			18	12	30	25	180	420	155	195	950

Semester	Course Code	Course Title	Credit	Examination Scheme					
				Internal		External			Total
				Progress Report	Progress Seminar	Report	Seminar	Viva	
Sem 3	EE811	Project Preliminaries/Summer Industrial Training	4	50	50	0	50	50	200
	EE812	Project Phase 1	18	100	100	100	100	100	500
			22	**150**	**150**	**100**	**150**	**150**	**700**
Sem 4	EE813	Project Phase 2	30	200	200	200	200	200	1000
			30	**200**	**200**	**200**	**200**	**200**	**1000**
		Grand Total	**102**						**3600**

Programme Electives of Semester 1 and 2					
Programme Electives 1 (PE 1) for Semester 1			**Programme Electives 2 (PE 2) for Semester 2**		
EE761	Control System Engineering		EE763	Modeling and Simulation of Renewable Energy Sources	
EE762	Engineering Optimization Techniques		EE764	Distributed Generation and Smart Grid	

Cluster Electives of Semester 1 and 2					
Cluster Electives 1 (CT 1) for Semester 1			**Cluster Electives 2 (CT 2) for Semester 2**		
EE771	Digital Signal Processing & its Application		EE772	Restructuring & Deregulation of Power Systems	
IT767	Micro device Programming		IT768	Applied Cryptography	
EC767	Embedded System Design		EC768	Digital Image & Speech Processing	
CE767	Operating System Design & Concepts		CE768	Software Project Management & Quality Assurance	

University Electives of Semester 1 and 2			
University Electives (UE 1) for Semester 1		**University Electives (UE 2) for Semester 2**	
MA771	Reliability and Risk Analysis	EE782	Energy Audit and Management
EE781	Optimization Techniques	CE771	Project Management
ME781	Occupational Health and Safety	IT771	Cyber Security and Laws
CE772	Research Methodology	CA 842	Mobile Application Development
CA730	Internet & Web Designing	PT796	Fitness & Nutrition
PT795	Health & Physical Activity	NR 752	Epidemiology and Community Health
NR 751	Women's Health	OC733	Introduction to Polymer Science
RD701	Introduction to Analytical Techniques	MB651	Software based Statistical Analysis
RD702	Introduction to Nanoscience& Technology	PH826	Intellectual Property Rights
MB650	Creative Leadership	MA772	Design of Experiments
PH825	Community Pharmacy Ownership		

HSS Elective for Semester 1	
HS701 A	Advance Critical Thinking and Logic
HS703.01 A	Languages (French/ German)
HS704 A	Academic Speaking

Annexure:14 III TEACHING AND EXAMINATION SCHEME FOR M Tech in Electrical Engineering (Power Electronics)
Entry year July 2018

CHAROTAR UNIVERSITY OF SCIENCE AND TECHNOLOGY

CHOICE BASED CREDIT SYSTEM SCHEME (July 2018)

Semester	Course Code	Course Title	Teaching Scheme				Examination Scheme				
							Theory		Practical		
			Theory	Practical/ Tutorial	Total	Credit	Internal	External	Internal	External	Total
Sem 1	EE741	Modeling & Simulation of Electrical Machines (PC - 1)	4	2	6	5	30	70	25	25	150
	EE743	Advanced Power Electronics in Power Systems (PC-2)	3	2	5	4	30	70	25	25	150
	EE751	Power Electronics Devices and Circuits (PC - 3)	3	2	5	4	30	70	25	25	150
	EE7XX	Programme Elective-1 (PE - 1)	3	2	5	4	30	70	25	25	150
	EE7XX	Cluster Elective - 1 (CT - 1)	3	2	5	4	30	70	25	25	150
	HSXXX	HSS Elective -I	2	0	2	2	30	70	0	0	100
	XXXXX	University Elective 1 (UE - 1)	0	2	2	2	30	70	0	0	100
					30	**25**					**950**
Sem 2	EE745	FACTS & HVDC Transmission (PC-4)	3	2	5	4	30	70	25	25	150
	EE756	Control of Electric Drives (PC - 5)	3	2	5	4	30	70	25	25	150
	EE757	Advanced Power Electronics Converters (PC-6)	4	2	6	5	30	70	25	25	150
	EE7XX	Programme Elective - 2 (PE - 2)	3	2	5	4	30	70	25	25	150
	EE7XX	Cluster Elective - 2 (CT - 2)	3	2	5	4	30	70	25	25	150
	HS705A	Academic Writing	0	2	2	2			30	70	100

	XXXXX	University Elective 2 (UE - 2)	2	0	2	2	30	70	0	0	100
					30	**25**					**950**

Programme Electives of Semester 1 and 2				
Programme Electives 1 (PE 1) for Semester 1			**Programme Electives 2 (PE 2) for Semester 2**	
EE766	Power Quality		EE768	Power Electronics for Renewable Energy Sources
EE767	Digital Control Systems		EE769	Control of Special Electrical Machines

Cluster Electives of Semester 1 and 2				
Cluster Electives 1 (CT 1) for Semester 1			**Cluster Electives 2 (CT 2) for Semester 2**	
EE771	Digital Signal Processing & its Application		EE772	Restructuring & Deregulation of Power Systems
IT767	Micro device Programming		IT768	Applied Cryptography
EC767	Embedded System Design		EC768	Digital Image & Speech Processing
CE767	Operating System Design & Concepts		CE768	Software Project Management & Quality Assurance

University Electives of Semester 1 and 2				
University Electives (UE 1) for Semester 1			**University Electives (UE 2) for Semester 2**	
MA771.01	Reliability and Risk Analysis		EE782.01	Energy Audit and Management
EE781.01	Optimization Techniques		CE771.01	Project Management
ME781.01	Occupational Health and Safety		IT771.01	Cyber Security and Laws
CE772.01	Research Methodology		CA 842	Mobile Application Development
CA730	Internet & Web Designing		PT796.01	Fitness & Nutrition
PT795.01	Health & Physical Activity		NR 752.01	Epidemiology and Community Health
NR 755	First Aid and Life Support		OC733.01	Introduction to Polymer Science

RD701.01	Introduction to Analytical Techniques
RD702.01	Introduction to Nanoscience& Technology
MB650	Creative Leadership
PH891	Community Pharmacy Ownership

MB651	Software based Statistical Analysis
PH892	Intellectual Property Rights
MA772.01	Design of Experiments

HSS Elective for Semester 1	
HS701 A	Advance Critical Thinking and Logic
HS703.01 A	Languages (French/ German)
HS704 A	Academic Speaking

Semester	**Course Code**	**Course Title**	**Credit**	**Examination Scheme**					
				Internal		**External**			**Total**
				Progress Report	Progress Seminar	Report	Seminar	Viva	
Sem 3	EE811	Project Preliminaries	4	50	50	0	50	50	200
	EE812	Project Phase 1	18	100	100	100	100	100	500
			22	**150**	**150**	**100**	**150**	**150**	**700**
Sem 4	EE813	Project Phase 2	30	200	200	200	200	200	1000
			30	**200**	**200**	**200**	**200**	**200**	**1000**
		Grand Total	**102**						**3600**

Annexure 14.VII Examiner Panel List for B. Tech and M. Tech Examination

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22	Jignesh Patel	CSPIT	9978794997	jigneshpatel.ee@charusat.ac.in
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M&V Patel Department of Electrical Engineering
Faculty of Technology & Engineering, CHARUSAT
14th Board of Studies Meeting

Date : August 26, 2017, Saturday
Time : 10:00am onwards
Venue: Room No: 102, HOD (EE), CSPIT, CHARUSAT Campus

1	Dr. Praghnesh Bhatt	**Chairman;**	Professor & Head, Department of Electrical Engineering,	
2	Dr. KartikPandya	**Member;**	Professor, Department of Electrical Engineering,	
3	Dr. Bhinal Mehta	**Member;**	Assistant Professor Department of Electrical Engineering,	
4	Mr. Nilay Patel	**Member;**	Assistant Professor Department of Electrical Engineering,	
5	Mr. Maulik Shah	**Member;**	Assistant Professor Department of Electrical Engineering,	
6	Mr. Mhir Bhatt	**Member;**	Assistant Professor Department of Electrical Engineering,	
7	Mr. Jivanadhar Joshi	**Member;**	Assistant Professor, Department of Electrical Engineering,	
8	Mr. Pratik Mochi	**Member;**	Assistant Professor, Department of Electrical Engineering,	
9	Dr. Sanjay R. Joshi	**External Member;**	Principal Government Engineering College, Valsad	
10	Dr. BhavikSuthar	**External Member;**	Associate Professor Government Engineering College, Modasa	
11	Dr. Santosh Vora	**External Member;**	Professor, Department of Electrical Engineering Nirma University, Ahmedabad	
12	Dr. Vijay Shah	**External Member;**	R&D Specialist, BU-PPMV, Vadodara	
13	Mr. Kirat Pandya	**External Member;**	AGM, Schneider Electricals Ltd, Vadodara	
14	Mr. Sanjay Mahagaokar	**External Member;**	Dy General Manager Engineering and Technology, Rotomag Power Drives.	

Minutes –14-Ath Board of Studies Meeting
M&V Patel Department of Electrical Engineering
Faculty of Technology & Engineering, CHARUSAT

Date : July 28, 2018, Saturday
Time : 10:00 am onwards
Venue: Room No: 102, HOD (EE), CSPIT, CHARUSAT Campus

The 14th meeting of Board of Studies, M&V Patel Department of Electrical Engineering, Faculty of Technology and Engineering (FTE), Charotar University of Science and Technology (CHARUSAT) was held on 28/7/2018 at 10:00 am. at M&V Patel Department of Electrical Engineering, CSPIT, CHARUSAT Campus. Following members were present:

1	Mr. Nilay Patel	**Chairman;**	Assistant Professor & Head, Department of Electrical Engineering,	
2	Dr. Kartik Pandya	**Member;**	Professor, Department of Electrical Engineering,	
3	Mr. Maulik Shah	**Member;**	Assistant Professor Department of Electrical Engineering,	
4	Mr. Mhir Bhatt	**Member;**	Assistant Professor Department of Electrical Engineering,	
5	Mr. Jivanadhar Joshi	**Member;**	Assistant Professor, Department of Electrical Engineering,	
6	Mr. Pratik Mochi	**Member;**	Assistant Professor, Department of Electrical Engineering,	
7	Mr. Jigar S Sarda	**Member;**	Assistant Professor, Department of Electrical Engineering,	
8	Dr. Bhavik Suthar	**External Member;**	Professor, Government Engineering College, Bhuj	
9	Dr. Sanjay R. Joshi	**External Member;**	Principal Government Engineering College, Valsad	
10	Prof. P. K. Shah	**External Member;**	Professor LDRP, Modasa	
11	Dr. Santosh Vora	**External Member;**	Professor Department of Electrical Engineering Nirma University, Ahmedabad	

Initiation:

Mr. Nilay Patel welcomed all the members of Board of Studies.

Agenda Proceedings & Resolutions:-

Item 14.01: To prepare and review the detailed syllabus of 4th year B.TECH program under CBCS.

Proceedings 14.01:

The detailed syllabus of the courses for B Tech – 4th Year (7thand 8thSemesters) is reviewed.

Suggestions Received:

EE441: Power System Operations and Control

1	Topics on State Estimation & Load forecasting should be incorporated.
2	Syllabus is lengthy.
3	Chapter of transients should be removed or modified
4	Text books and reference books should be swapped.
5	Year of the book can be removed as it seems to be old version of book.
6	Voltage stability part can be removed.
7	Add contingency analysis method
8	Use B.R..Gupta as a text book

EE442: Power System Protection

1	Chapter 9 should be removed.
2	16 hours of transmission can be reduced.
3	Add Earthing of power system

EE443: Electrical Machine Design

1	DC machine design part can be reduced/removed.

EE444: Simulation Lab

1	Hours distribution modify
2	20 hours are more.
3	Keep basic experiments.
4	Experiments of machine are tough for students.
5	It should be "Suggested" list of experiment in syllabus booklet.
6	Fault analysis experiments can be added.
7	Linear equation solution can be added.
8	Multiple faculties should be involved in framing the experiments and conducting lab.
9	It should be kept simple for students.
10	Numerical Methods, RLC series and Parallel operation and its Transients type Practical should be included.

EE471: Power Electronics Applications in Power System (Programme Elective III)

1	Power quality can be removed. SSSC and UPFC can be removed.
2	Chapter 2 should be up to topic "converter transformer testing"
3	Problems in transmission line should be involved.

EE472: Communication Engineering (Programme Elective III)

1	Syllabus designed is fine

EE473: High Voltage Engineering (Programme Elective III)

1	Contents of chapter 07 can be reduced.
2	Remove power quality problems & standard chapter

EE446: Commissioning and Testing of Electrical Equipment

1	Syllabus is lengthy.
2	Chapter of DC machine can be removed.
3	Commissioning part should be more rather than testing.

EE447: Modeling and Control of Renewable Energy Sources

1	Name of the subject should be modified as Renewable Energy Sources and offer as elective subject
2	Content of Solar and Wind should be more.
3	Chapter 5 can be removed.
4	Course can be offered as **programme elective.**

EE448: Major Project

1 Project should be in line with innovation or today's' need.

EE450: Summer Internship II

1 On the same line of summer Internship-I, this course will follow.

EE476: Advances in Power System (Programme Elective IV)

1	Remove probabilistic power flow chapter
2	Add Restructuring in power system

EE477: Internet of Things (Programme Elective IV)

1 Syllabus designed is fine.

EE478: Energy Conservation and Management (Programme Elective IV)

	1 No Comments **Resolution 14.01:** ▪ The suggestions received from BoS members are incorporated and detailed syllabi / T & E Scheme for B Tech – 4th Year (7th and 8th Semesters) effective from 2019-2020 is approved and is attached in **Annexure – I**
Item 14.02	To review and approve T&E scheme and syllabus for FY, SY and TY of B. Tech program for ACY 2018-2019 under Choice Based Credit System (CBCS).
	Proceedings 14.02: The teaching and examination scheme of FY, SY and TY of B. Tech program for ACY 2018-2019 under Choice Based Credit System (CBCS) is reviewed. **Suggestions Received:** The second year university electives offered by electrical engineering department should be more in line with current scenario and it must be changed. **EE283: Python for Electrical Engineering (University Elective I)** 1 Basics of python programming taught here. 2 Various problems can be solved using python programming. **EE286: Computer Programming for Electrical Engineering (University Elective I)** 1 MATLAB and other software introduced here to solve simple circuit. 2 Linear equations, non-linear equations, ODE and matrices should be solved by software. **Resolution 14.02:** Above two courses introduce from AY 2018-19, remaining electives can be kept as it is. For the 2018 entry students, the first year and second year syllabus is reviewed and approved. Physics course PY141.01 is approved in respective BoS and introduced in first year. The T & E scheme is approved for third year and fourth year. It is decided that the total credit must be equal to 192. The T & E scheme for 2018 entry student is attached in **Annexure – II**
Item 14.03	To review and approve T&E scheme of M. Tech in Power Electronics for ACY 2018-2019 under CBCS
	Proceedings 14.03: The teaching and examination scheme of M. Tech in Power Electronics for ACY 2018-2019 under CBCS is reviewed.

	Suggestions Received: ▪ No Suggestion. It is already draft one year back and approved. Attached in **Annexure – III**
Item 14.04	To review T&E Scheme for existing M. Tech program under CBCS for any necessary changes
	Proceedings 14.04: The teaching and examination scheme of M. Tech in EPS for ACY 2018-2019 under CBCS is reviewed. **Suggestions Received:** ▪ No Suggestion. It is already draft one year back and approved. Attached in **Annexure –IV**
Item 14.05	**Proceedings 14.05:** Discussion on effective implementation of Outcome Based Education (OBE) and ICT based Teaching-Learning
	Suggestions Received: ▪ All faculty members must aware about each criteria defined by NBA. ▪ The proper understanding of mapping of POs, PEOs, COs and their assessment tools is required. ▪ Faculty contribution should be increased for publication, funded projects and consultancy. ▪ The usage of open course ware from NPTEL, MIT and BISAC must be increased.
Item 14.06	**Proceedings 14.06:** Introducing the new UG program in Electrical Engineering
	Suggestions Received: Not needed right now.
Item 14.07	**Proceedings 14.07:** Discussion regarding approval from NBA and scope for the improvement
	All invited BoS members congratulated the University, Institute and Department for getting "A" graded from NAAC and KCG as well as for getting NBA for three departments. **Suggestion received:** Cadre ratio and student- teacher ratio along with research in department are most affected factors.
Item 14.08 14.09	**Proceedings 14.08 and 14.09:** To approve the syllabus of M Tech (Newly Introduced Programs) **Resolution** This agenda is duplicated as per agenda number 2 & 3
Item 14.10	**Proceedings 14.10:** To incorporate the revised syllabus of Mathematics and Physics in first year **Resolution**

	The syllabus is already designed and passed in the respective BoS and added to FY syllabus.
Item 14.11	**Proceedings 14.11:** To implement summer internship in 3rd semester of B Tech (Same Credit, same Marks) **Resolution** It is not possible due to D2D students.
	Other Agendas are discussed and listed in additional Items

Additional Items

Sr. No	Agenda	Discussion/Suggestions
1	Review of Exam Question Papers	Question papers of internal and university examination have been reviewed. The briefings about the continuous evaluation, freedom for pedagogy selection for faculty and execution of the practical sessions have been given to external BoS members. The quality of question papers are found satisfactory, but it is suggested to increase the weighatge on the questions that can increase the analytical and logical thinking ability of students. The question papers are as per blooms taxonomy. **Annexure –V and VIII**
2	Review of Result Analysis	The records of result analysis of both internal and university exam are maintained. The results of both the exams are generally discussed and analyzed in the department meeting as soon as the exam gets over and the necessary actions are decided. The YoY comparisons of the results are also discussed and the figures are acceptable. The efforts should be given to again improve the results at all levels. The conduction of the remedial coaching for weaker students has been appreciated by the members. **Annexure –IX**
3	Review of Placement Records	The campus placement of the student needs to be increased. More efforts are required to invite the companies for placement. The aptitude sessions organized for the students are appreciated. It is advised to keep extra technical session to prepare the students for technical skills. **Annexure –X**
4	Review of B. Tech and M. Tech Projects works	The project titles for B. Tech and M. Tech are reviewed and found satisfactory. It is suggested to give more emphasis on hardware based projects at B. Tech level. For M. Tech, the extensive use of licenses software may help the students to solve/reproduce the IEEE journal papers. Paper presentation for M. Tech students should be made compulsory.
5	Review of Feedback from Students, Identification of slow learners, Counseling activities	Review pattern for the students feedback and actions after the feedback have been explained. It is an useful component to improve the performance of teacher and T-L practices. The student counseling activities are very appreciated by all the members.
6	Approval of Examiners'	The examiners panels for B. Tech and M. Tech have been reviewed and approved. The approved examiner panel is attached in **Annexure VII.**

	Panel	
7	Admissions	As per the experts, the Electrical branch interest is not reduced, but the interest towards CE/IT branch is increased, Hence Electrical Branch has to suffer for a complete one cycle.
8.	Audit Course	Electrical students can be offered audit course from CE/IT on IoT. Also Electrical department should offer audit course on arduino. Apart from the regular teaching, by audit course, social activities and by taking parts in sports and co/extra-curricular activities, the holistic development of student will be possible.
9.	Sports, Cultural and Social activities.	The students are encouraged to take part in national and international level sports events. With social activities the bonding and trust with society and CHARUSAT will increase. At least one week cultural programme to be organized by institute.
10.	Quality of research in dissertation and PhD.	For PhD it is essential to publish at least to research papers in scopus indexed journals, hence Quality will be there in research work.
11.	Research Papers and Research funding	Each faculty must publish at least two papers in high impact factor journal. By this the CV of the faulty become strengthen, hence chances of getting grants will increase. More efforts will be put to fetch the research grants. All the faculties are aware about funding agencies.
12.	NPTEL Course	Now as pert AICTE, NPTEL Course will be considered as FDP and according to that API point given to faculty.
13.	Innovation in Pedagogy	The educational goal must be discussed by student and teacher and according to that, A common strategies for class must be made and according to individual student's knowledge, individual strategies should be explained to each student. Learning while doing is best pedagogy.
14	Quality in Education and World Class Universities	By quality consultancy work, more practical knowledge and time-on-task learning strategy accelerates the quality education and movement towards the world class universities.
15	Outcome Based Education and Road-map 2023	The outcome of each course and program must be monitored effectively. If required outcome doesn't achieve in students, more quality efforts must be made. The main focus of road-map 2013 is, placement of eligible students must be reach up to 100%. **Annexure –VI**
16.	Innovative Projects	The BoS members appreciated the department projects. The capacity of the department must be showcased to industry people.

Faculty Board Meeting:

Faculty board meeting was held at conference room, DEPSTAR College.

The inputs given by expert of electrical field are as under.

1. Right now the interest of students are towards the computer related branch, hence the number of students in the electrical or other branch are less.

2. Day by day the students in A group of 12th standards are decreasing due to lack of interest in mathematics subject. So students must be motivated to take interest in maths subject right from school level.
3. Experts gave their opinion that, each branch has its cycle depending on market scenario. So within two years, again the interest f students towards the core branch will increase.

Mr. Nilay A. Patel
Chairman
Board of Studies (EE)

HEAD OF DEPARTMENT
Dept. of Electrical Engg.
Chandubhai S. Patel Institute of Technology
At. & Po. Changa-388421., Ta. Petlad,
Dist. : Anand. (Gujarat)

14A

Annexure I: TEACHING & EXAMINATION SCHEME FOR B TECH PROGRAMME IN ELECTRICAL ENGINEERING (CBCS) Entry Year: 2016

CHAROTAR UNIVERSITY OF SCIENCE & TECHNOLOGY (CHARUSAT)											
TEACHING & EXAMINATION SCHEME FOR B TECH PROGRAMME IN ELECTRICAL ENGINEERING (CBCS) Entry Year: 2016											
Level	**Course Code**	**Course Title**	**Teaching Scheme**				**Examination Scheme**				
			Contact Hours			**Credit**	**Theory**		**Practical**		**Total**
			Theory	**Practical/Tutorial**	**Total**		**Internal**	**External**	**Internal**	**External**	
Level 1	HS101A- HS106A	A Course on Liberal Arts		2	2	2			50	50	**100**
	MA141	Engineering Mathematics I	4	1 (T)	4	4	30	70			**100**
	ME141	Engineering Graphics	2	4	6	4	30	70	50	50	**200**
	PY141	Engineering Physics	3	2	5	4	30	70	25	25	**150**
	CL141	Engineering Mechanics	4	2	6	5	30	70	25	25	**150**
	ME142	Workshop Practices	0	2	2	1			25	25	**50**
	Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra- curricular &co curricular				11						
					36	**20**					**750**
	HS 121A	English Language and Literature	1	1	2	2	25	25	25	25	**100**
	MA142	Engineering Mathematics II	4	1 (T)	4	4	30	70			**100**
	CL142	Environmental Science	2		2	2	30	70			**100**
	IT141	Fundamentals of Computer Programming	3	2	5	4	30	70	25	25	**150**
	ME143	Basics of Civil & Mechanical Engineering	4	2	6	5	30	70	25	25	**150**
	EE141	Basics of Electronics & Electrical Engineering	4	2	6	5	30	70	25	25	**150**
	Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra- curricular & co curricular				11						
					36	**22**					**750**

	HS122A/HS131A	Values and Ethics/Philosophy	2		2	2	30	70			**100**
	MA241	Engineering Mathematics III	4		4	4	30	70			**100**
	EE241	Analog and Digital Electronics	4	2	6	5	30	70	25	25	**150**
	EE242	Circuit Theory	4	2	6	5	30	70	25	25	**150**
	EE243	Electrical Measurements and Industrial Instrumentation	4	2	6	5	30	70	25	25	**150**
	XXXXX	University Elective- I	2		2	2	30-70				**100**
	Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra- curricular & co curricular				10						
					36	**23**					**750**
Level 2	HS123.01A/ HS 127.01A/ HS133A	Critical Thinking and Logic/ Communication skills 2/ Creativity, Problem Solving and Innovation	2		2	2	30-70				**100**
	EE244	Electrical Power Generation and its Economics	4		4	4	30	70			**100**
	EE245	Control Systems	4	2	6	5	30	70	25	25	**150**
	EE246	Microprocessor & Microcontrollers	4	2	6	5	30	70	25	25	**150**
	EE247	Transformers and Induction Machines	4	4	8	6	30	70	50	50	**200**
	XXXXX	University Elective- II	2		2	2	30-70				**100**
	Assignment Practices/Student counseling/Remedial classes/Library/Sports /Extra- curricular & co-curricular				8						
					36	**24**					**800**

Level 3	HS124.01A	Professional Communication		2	2	2			30	70	**100**
	EE341	Electrical Power Transmission and Distribution	4		4	4	30	70			**100**
	EE342	Synchronous and DC Machines	4	4	8	6	30	70	50	50	**200**
	EE343	Power Electronics & Drives I	4	2	6	5	30	70	25	25	**150**
	EE344	Minor Project I	0	4	4	2			50	50	**100**
	EE345	Electrical Product Survey	0	2	2	2			50	50	**100**
	EE371-EE372	Programme Elective I	4	2	6	5	30	70	25	25	**150**
	EE350	Summer Internship I	0	0	0	3			75	75	**150**
	Assignment Practices/ Student counseling/ Remedial classes/ Library/ Sports/ Extra- curricular & co curricular				4						
					36	**29**					**1050**
	HS134A	Contributor Personality Development		2	2	2			30	70	**100**
	EE346	Digital Signal Processing	3	2	5	4	30	70	25	25	**150**
	EE347	Programmable Logic Controllers and Industrial Automation	2	4	6	4	30	70	50	50	**200**
	EE348	Power Electronics & Drives II	3	2	5	4	30	70	25	25	**150**
	EE349	Fault Analysis and Switchgear	4	2	6	5	30	70	25	25	**150**
	EE360	Minor Project II	0	4	4	2			50	50	**100**
	EE376-EE377	Programme Elective II	3	2	5	4	30	70	25	25	**150**
	Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra- curricular & co curricular				3						
					36	**25**					**1000**

Level 4	EE441	Power System Operations and Control	4	2	6	5	30	70	25	25	**150**
	EE442	Power System Protection	4	2	6	5	30	70	25	25	**150**
	EE443	Electrical Machine Design	4	2	6	5	30	70	25	25	**150**
	EE444	Simulation Lab	0	4	4	2			50	50	**100**
	EE450	Summer Internship II				3			75	75	**150**
	EE471-EE473	Programme Elective III	4	2	6	5	30	70	25	25	**150**
	Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra-curricular & co curricular				8						
					36	**25**					**850**
	EE446	Commissioning and Testing of Electrical Equipment	4	2	6	5	30	70	25	25	**150**
	EE447	Modeling and Control of Renewable Energy Sources	4	2	6	5	30	70	25	25	**150**
	EE448	Major Project			18	9			250	250	**500**
	EE476-EE478	Programme Elective IV	4	2	6	5	30	70	25	25	**150**
					36	**27**	**90**	**210**	**325**	**325**	**950**

CHAROTAR UNIVERSITY OF SCIENCE & TECHNOLOGY (CHARUSAT)											
		Hours				Credits	Marks				
			Theory	Practical	Total						
					288	192					6900

LIST OF ELECTIVES FOR B TECH PROGRAMME IN ELECTRICAL ENGINEERING

University Electives for Level 2

University Elective 1		University Elective 2	
EE281	Electrical Engineering Materials	**EE282**	Electrical Power Utilisation and Traction

Electives for Level 3

	PROGRAMME ELECTIVE 1	PROGRAMME ELECTIVE 2	
EE371	Advanced Microcontrollers	**EE376**	Special Electrical Machines and Applications
EE372	VLSI Technology & Design	**EE377**	Embedded Systems

Electives for Level 4

	PROGRAMME ELECTIVE 3	PROGRAMME ELECTIVE 4	
EE471	Power Electronics Applications in Power System	**EE476**	Advances in Power System
EE472	Communication Engineering	**EE477**	Internet of Things
EE473	High Voltage Engineering	**EE478**	Energy Conservation and Management

University Elective I & II:

(Will be available in a Common Slot)

Occupational Health and Safety, IPR, Regulatory Affairs, Contract Management,

Energy Management, Research Methodology, Entrepreneurship, Project Management, First AID and Life Support

Risk Management, Disaster Management, Scientific Instrumentation & Measurement, Operation Research,
Business Environment, Quality Assurance, Computer Programming, Numerical Analysis, Web Designing, Cyber Security etc

M&V Patel Department of Electrical Engineering
Faculty of Technology & Engineering, CHARUSAT
14th Board of Studies Meeting

Date : July 28, 2018, Saturday
Time : 10:00 am onwards
Venue: Room No: 102, HOD (EE), CSPIT, CHARUSAT Campus

1	Mr. Nilay Patel	**Chairman;**	Assistant Professor & Head, Department of Electrical Engineering,	
2	Dr. Kartik Pandya	**Member;**	Professor, Department of Electrical Engineering,	
3	Mr. Maulik Shah	**Member;**	Assistant Professor Department of Electrical Engineering,	
4	Mr. Mhir Bhatt	**Member;**	Assistant Professor Department of Electrical Engineering,	
5	Mr. Jivanadhar Joshi	**Member;**	Assistant Professor Department of Electrical Engineering,	
6	Mr. Jigar Sarda	**Member;**	Assistant Professor Department of Electrical Engineering,	
7	Mr. Pratik Mochi	**Member;**	Assistant Professor, Department of Electrical Engineering,	
8	Dr. Sanjay R. Joshi	**External Member;**	Principal Government Engineering College, Valsad	
9	Dr. Bhavik Suthar	**External Member;**	~~Principal~~ Professor in EE Government Engineering College, bhuj	
10	Dr. Santosh Vora	**External Member;**	Professor Department of Electrical Engineering Nirma University, Ahmedabad	
11	Mr. Sanjay Mahagaokar	**External Member;**	Dy General Manager Engineering and Technology, Rotomag Power Drives. Napa Talpad.	
12	Prof. Prakash K. Shah	**External Member;**	Professor Department of Electrical Engineering LDRP, Ahmedabad	

Minutes –15th Board of Studies Meeting
M&V Patel Department of Electrical Engineering
Faculty of Technology & Engineering, CHARUSAT

Date : August 31, 2019, Saturday
Time : 10:00am onwards
Venue: Room No: PG Computer Lab, (EE), CSPIT, CHARUSAT Campus

The 15thmeeting of Board of Studies, M&V Patel Department of Electrical Engineering, Faculty of Technology and Engineering (FTE), Charotar University of Science and Technology (CHARUSAT) was held on31/08/2019 at 10:00 am. at M&V Patel Department of Electrical Engineering, CSPIT, CHARUSAT Campus. Following members were present:

1	Dr. Nilay Patel	**Chairman;**	Assistant Professor & Head, Department of Electrical Engineering,
2	Dr. Kartik Pandya	**Member;**	Professor, Department of Electrical Engineering,
3	Mr. Maulik Shah	**Member;**	Assistant Professor Department of Electrical Engineering,
4	Mr. Mhir Bhatt	**Member;**	Assistant Professor Department of Electrical Engineering,
5	Mr. Jivanadhar Joshi	**Member;**	Assistant Professor, Department of Electrical Engineering,
6	Mr. Soaib Saiyad	**Member;**	Assistant Professor, Department of Electrical Engineering,
7	Mr. Jigar S Sarda	**Invitee Member;**	Assistant Professor, Department of Electrical Engineering,
8	Dr. Praghnesh Bhatt	**External Member;**	Associate Professor, SoT, PDPU, Gandhinagar
9	Dr. Naran Pindoriya	**External Member;**	Associate Professor, IIT, Gandhinagar.
10	Dr. Vijay K Shah	**External Member;**	Vice Precident, Senior Principal Engineer-Electrification Business. ABB India Ltd, Vadodara
11	Mr. Sanjay Mahagaokar	**External Member;**	General Manager - Engineering and Tech. Rotomotive Powerdrives India

Initiation:

Dr. Nilay Patel welcomed all the members of Board of Studies.

Agenda Proceedings &Resolutions: -

Item 15.01	To approve the teaching scheme for all the semesters of B. Tech. CBCS courses effective from July-2019. Review and approve the FY and SY syllabus for 2019 entry students.

Proceedings 15.01:

The teaching and examination scheme for all the semesters of B. Tech. CBCS courses effective from July- 2019 under Choice Based Credit System (CBCS) is prepared and reviewed. The primary discussion of FY syllabus is already done with respective department BoS. The syllabus from electrical engineering in FY is reviewed and approved. The other syllabus of FY will be approved by respective department BoS and will be included in FY curriculum. The SY syllabus is also reviewed and approve by BoS.

Suggestions Received:

- It should be as per guidelines given by AICTE, Total credit of curriculum must be equal to 176.
- Course EE141(5 Credit Course) is replaced by EE145 (4 Credit Course). Some portion related to electronics side is dropped. It is offer from AY2019-20 First Year.
- There must be space for whole final semester project to have better industry exposure.
- In 2nd year, following two additional university elective courses are introduced for B.Tech.
  1. PD261: Astrophysics, Space and Cosmos-1 (For UG Semester-3)
  2. PD262: Astrophysics, Space and Cosmos-2 (For UG Semester-4)
- The following courses that are in line with the current industry requirement and skill based are included in 3rd level and 4th level of curriculum. The listing is as under. The major topics of courses are discussed but detailed syllabus will be prepared in next stage.
- The newly introduced electives are in track/stream of electives offered in previous semesters and hence students following track suggested by department will be able to get detailed knowledge of the selected stream.
  - AI , Machine Learning and Data Analytics
  - Optimization Techniques
  - Smart Grid Technology, IoT and Industry 4.0
  - Electric Vehicle Technologies
- Dr. Praghnesh Bhatt, BoS Member, appreciated the course covered in curriculum and quoted that "The curriculum and syllabus of Electrical Engineering at CSPIT is the best syllabus among top class universities and covering the topics of industrial needs and the other BoS members appreciated and agreed upon his statement.

Resolution 15.01:

For July 2019 Intake, First Year and Second Year syllabuses are finalized and approved. Some second year courses minor modification in course is there due to reduction in course credit.

	For July 2019 Intake, third year and final Year syllabuses are stream lined, but it can be modified and discussed in more detail in next Bos. With one voice it is approved that, the final semester must be kept for project only. The suggestions received from BoS members are incorporated and T & E Scheme for B. Tech. July 2019 Intake is approved and is attached in **Annexure – I**
Item 15.02	To review and approve T&E scheme and syllabus for SY and TY of B. Tech program for ACY 2019-2020 under Choice Based Credit System (CBCS).
	Proceedings 15.02: The teaching and examination scheme of SY and TY of B. Tech program for ACY 2019-2020 under Choice Based Credit System (CBCS) is reviewed. **Suggestions Received:** ▪ It should be as per guidelines given by AICTE, otherwise the implemented scheme for AY 2018-19 is fine. ▪ For July 2019 Entry Batch, at the Third Year level and Final year level more elective can be added as per need of industry and current scenario. **Resolution 15.02:** For the 2017 entry students, the Third Year and for 2018 entry students the Second Year syllabus is reviewed and approved. The T & E scheme for second Year B. Tech. (2018 entry student) and the T & E scheme for Third Year B. Tech. (2017 entry students) is attached in **Annexure – II A & B**
Item 15.03	To review and approve T&E scheme and detailed syllabus for Final Year for July 2017 intake batch under Choice Based Credit System (CBCS).
	Proceedings 15.03: The detailed syllabus of the courses for B Tech – 4thYear (7th and 8th Semesters) is reviewed. **Suggestions Received:** ➢ All the topics included in syllabus of Final Year courses are effective. There is no need of major changes. ➢ The books listed may be as per latest editions. ➢ Incorporate more books listing and online courses link. ➢ At the Final Year level more electives can be added as per need of industry and current scenario. **Resolution 15.03:** The suggestions received from BoS members are incorporated and detailed syllabi / T & E Scheme for B Tech – 4thYear (7th and 8th Semesters) effective from 2019-2020 is approved and is attached in **Annexure – II B.**
Item	To review and approve T&E scheme for all the semesters of M. Tech. (Electrical Power System) and

15.04	M. Tech. (Power Electronics) CBCS courses effective from July- 2019
	Proceedings 15.04: The teaching and examination scheme for all the semesters of M. Tech. (Electrical Power System) and M. Tech. (Power Electronics). CBCS courses effective from July- 2019 under Choice Based Credit System (CBCS) is prepared and reviewed. **Suggestions Received:** ▪ It should be as per guidelines given by AICTE, Total credit of curriculum must be equal to 90. ▪ Decrease the credit of Project Phase II for both programme to meet the credit requirement. ▪ Keep the First Year courses for both programme as per the respective previous year (i.e. as per 2018-19) **Resolution 15.04:** The suggestions received from BoS members are incorporated and T & E Scheme for M. Tech. (Electrical Power System) and M. Tech. (Power Electronics) July 2019 Intake is approved and is attached in **Annexure – III A & B**
Item 15.05	Preparation, Discussion, and approval of the Elective Courses (University, Institute, and Program Electives)
	This agenda is already discussed at item 15.01
Item 15.06	**Proceedings 15.06:** Discussion on effective implementation of Outcome Based Education (OBE) and ICT based Teaching-Learning
	Suggestions Received: ▪ All faculty members must aware about each criteria defined by NBA and NAAC. ▪ The proper understanding of mapping of POs, PEOs, COs and their assessment tools is required. ▪ Faculty contribution should be increased for publication, funded projects and consultancy. ▪ The usage of open course ware from NPTEL, MIT and BISAC must be increased. ▪ Google class room should be used as ICT platform.
Item 15.07	**Proceedings 15.07:** To incorporate the revised syllabus of Mathematics and Physics in first year **Resolution** The syllabus is already designed and passed in the respective BoS and added to FY syllabus.
Item 15.08	**Proceedings 15.07:** Research Activities, Projects, Consultancy etc. **Resolution** Every faculty must try to bring funded research projects and consultancy. Relation with industry must be made very strong

	Explore the new dimensions about research
	Other Agendas are discussed and listed in additional Items

Additional Items

Sr. No	Agenda	Discussion/Suggestions
1	Review of Exam Question Papers	Question papers of internal and university examination have been reviewed. The briefings about the continuous evaluation, freedom for pedagogy selection for faculty and execution of the practical sessions have been given to external BoS members. The quality of question papers are found satisfactory, but it is suggested to increase the weightage on the questions that can increase the analytical and logical thinking ability of students. The question papers are as per blooms taxonomy.**Annexure –IV and V**
2	Review of Result Analysis	The records of result analysis of both internal and university exam are maintained. The results of both the exams are generally discussed and analyzed in the department meeting as soon as the exam gets over and the necessary actions are decided. The YoY comparisons of the results are also discussed and the figures are acceptable. The efforts should be given to again improve the results at all levels. The conduction of the remedial coaching for weaker students has been appreciated by the members.**Annexure –VI**
3	Review of Placement Records	The campus placement of the student needs to be increased. More efforts are required to invite the companies for placement. The aptitude sessions organized for the students are appreciated. It is advised to keep extra technical session to prepare the students for technical skills. **Annexure –VII**
4	Review of B. Tech and M. Tech Projects works	The project titles for B. Tech and M. Tech are reviewed and found satisfactory. It is suggested to give more emphasis on hardware based projects at B. Tech level. For M. Tech, the extensive use of licenses software may help the students to solve/reproduce the IEEE journal papers. Paper presentation for M. Tech students should be made compulsory.
5	Review of Feedback from Students, Identification of slow learners, Counseling activities	Review pattern for the students feedback and actions after the feedback have been explained. It is a useful component to improve the performance of teacher and T-L practices. The student counseling activities are very appreciated by all the members.
6	Approval of Examiners' Panel	The examiners panels for B. Tech and M. Tech have been reviewed and approved. The approved examiner panel is attached in **Annexure VIII**
7	Admissions	As per the experts, the Electrical branch interest is not reduced, but the interest towards CE/IT branch is increased, Hence Electrical Branch has to suffer for a complete one cycle.

8.	Audit Course	Electrical students can be offered audit course from CE/IT on IoT. Also Electrical department should offer audit course on Arduino. Apart from the regular teaching, by audit course, social activities and by taking parts in sports and co/extra-curricular activities, the holistic development of student will be possible.
9.	Sports, Cultural and Social activities.	The students are encouraged to take part in national and international level sports events. With social activities the bonding and trust with society and CHARUSAT will increase. At least one week cultural programme to be organized by institute.
10.	Quality of research in dissertation and PhD. Panel of Ph D Supervisors	For PhD it is essential to publish at least to research papers in Scopus indexed journals, hence Quality will be there in research work. For PhD mentor or co-guide can be invited for research scholars of the department.
11.	Research publications, proposals and grants	Each faculty must publish at least two papers in high impact factor journal. By this the CV of the faulty become strengthen, hence chances of getting grants will increase. More efforts will be put to fetch the research grants. All the faculties are aware about funding agencies.
12.	NPTEL Course	Now as pert AICTE, NPTEL Course will be considered as FDP and according to that API point given to faculty.
13.	Innovation in Pedagogy	The educational goal must be discussed by student and teacher and according to that, A common strategies for class must be made and according to individual student's knowledge, individual strategies should be explained to each student. Learning while doing is best pedagogy.
14	Quality in Education and World Class Universities	By quality consultancy work, more practical knowledge and time-on-task learning strategy accelerates the quality education and movement towards the world class universities.
15	Outcome Based Education and Road-map 2023	The outcome of each course and program must be monitored effectively. If required outcome doesn't achieve in students, more quality efforts must be made. The main focus of road-map 2023 is, placement of eligible students must be reach up to 100%. **Annexure –IX**
16.	Innovative Projects	The BoS members appreciated the department projects. The capacity of the department must be showcased to industry people.

Faculty Board Meeting:

Faculty board meeting was held at conference room, DEPSTAR College.

The inputs given by expert of electrical field are as under.

1. Right now the interest of students is towards the computer related branch, hence the number of students in the electrical or other branch are less.
2. Dr. Praghnesh Bhatt, FB Member, appreciated the course covered in curriculum and quoted that " The curriculum and syllabus of Electrical Engineering at CSPIT is the best syllabus among top class universities and covering the topics of industrial needs.
3. Experts gave their opinion that, each branch has its cycle depending on market scenario. So within two years, again the interest of students towards the core branch will increase.

Dr. Nilay A. Patel
Chairman
Board of Studies (EE)

HEAD OF DEPARTMENT
Dept. of Electrical Engg.
Chandubhai S. Patel Institute of Technology
At. & Po. Changa-388421., Ta. Petlad,
Dist. : Anand. (Gujarat)

CHAROTAR UNIVERSITY OF SCIENCE & TECHNOLOGY (CHARUSAT)

Annexure I TEACHING & EXAMINATION SCHEME FOR B TECH PROGRAMME IN ELECTRICAL ENGINEERING (CBCS) Entry Year: 2019

Level	Course Code	Course Title	Teaching Scheme					Examination Scheme				
			Contact Hours				Credit	Theory		Practical		Total
			Theory	Practical	Tutorial	Total		Internal	External	Internal	External	
Level 1	HS101.01 A-HS110.01A	A Course on Liberal Arts (Elective I)		2	0	2	2			30	70	**100**
	MA143	Engineering Mathematics I	4	0	1	5	4	30	70	0	0	**100**
	ME146	Engineering Graphics	2	2	1	5	3	30	70	25	25	**150**
	PY141.01	Engineering Physics	3	2	0	5	4	30	70	25	25	**150**
	CL143	Engineering Mechanics	3	2	1	6	4	30	70	25	25	**150**
	ME142	Workshop Practices	0	2		2	1			25	25	**50**
		Assignment Practices/Student counselling/Remedial classes/Libarary/Sports/Extra curricular & cocurricular				11						
			12	**10**		**36**	**18**	**120**	**280**	**130**	**170**	**700**
	HS126.01 A	Communication Skills -1	2		0	2	2	30	70			**100**
	CL142.01	Environmental Science		2	0	2	2			30	70	**100**
	MA144	Engineering Mathematics II	4	0	1	5	4	30	70			**100**
	IT143	Fundamentals of Computer Programming	2	2	0	4	3	30	70	25	25	**150**
	ME147	Basics of Civil & Mech Engineering	3	2	0	5	4	30	70	25	25	**150**
	EE145	Basics of Electronics & Electrical Engineering	3	2	0	5	4	30	70	25	25	**150**
		Assignment Practices/Student counselling/Remedial classes/Libarary/Sports/Extra curricular & cocurricular				13						
			14	**8**		**36**	**19**	**150**	**350**	**105**	**145**	**750**

CHAROTAR UNIVERSITY OF SCIENCE & TECHNOLOGY (CHARUSAT)

Annexure I TEACHING & EXAMINATION SCHEME FOR B TECH PROGRAMME IN ELECTRICAL ENGINEERING (CBCS) Entry Year: 2019

Level	Course Code	Course Title	Teaching Scheme					Examination Scheme				
			Contact Hours				Credit	Theory		Practical		Total
			Theory	Practical	Tutorial	Total		Internal	External	Internal	External	
Level 2	HS121.02A	Creativity, Problem Solving and Innovation		2		2	2	0	0	30	70	**100**
	MA252	Advanced Engineering Mathemathics	4	0	0	4	4	30	70			**100**
	EE251	Analog and Digital Electronics	3	2	0	5	4	30	70	25	25	**150**
	EE252	Circuit Theory	3	2	0	5	4	30	70	25	25	**150**
	EE243	Electrical Measurements and Industrial Instrumentation	4	2	0	6	5	30	70	25	25	**150**
	XXXXX	University Elective- I		2	0	2	2			30	70	**100**
		Assignment Practices/Student counselling/Remedial classes/Libarary/Sports/Extra curricular &cocurricular				12						
			14	**10**	**0**	**36**	**21**	**120**	**280**	**135**	**215**	**750**
	HS111.02A	Human Values and professional Ethics		2	0	2	2			30	70	**100**
	EE254	Electrical Power Generation and its Economics	3	0	0	3	3	30	70			**100**
	EE255	Control Systems	3	2	0	5	4	30	70	25	25	**150**
	EE246	Microprocessor & Microcontrollers	4	2	0	6	5	30	70	25	25	**150**
	EE247	Transformers and Induction Machines	4	4	0	8	6	30	70	50	50	**200**
	XXXXX	University Elective- II		2	0	2	2			30	70	**100**
		Assignment Practices/Student counselling/Remedial classes/Libarary/Sports/Extra curricular & cocurricular				10						
			14	**12**		**36**	**22**	**120**	**280**	**160**	**240**	**800**

CHAROTAR UNIVERSITY OF SCIENCE & TECHNOLOGY (CHARUSAT)

Annexure I TEACHING & EXAMINATION SCHEME FOR B TECH PROGRAMME IN ELECTRICAL ENGINEERING (CBCS) Entry Year: 2019

Level	Course Code	Course Title	Teaching Scheme					Examination Scheme				
			Contact Hours				Credit	Theory		Practical		Total
			Theory	Practical	Tutorial	Total		Internal	External	Internal	External	
Level 3	HS131.02A	Communication and Soft Skills		2	0	2	2			30	70	**100**
	EE351	Electrical Power Transmission and Distribution	3	0	0	3	3	30	70	0	0	**100**
	EE342	Synchronous and DC Machines	4	4	0	8	6	30	70	50	50	**200**
	EE353	Power Electronics & Drives I	3	2	0	5	4	30	70	25	25	**150**
	EE344	Minor Project I	0	4	0	4	2			50	50	**100**
	EE345	Electrical Product Survey	0	2	0	2	2			50	50	**100**
	EE371/EE381	Programme Elective I	4	2	0	6	5	30	70	25	25	**150**
	EE350	Summer Internship I	0	0	0	0	3			75	75	**150**
		Assignment Practices/Student counselling/Remedial classes/Libarary/Sports/Extra curricular & cocurricular				6						
			14	**16**	**0**	**36**	**27**	**120**	**280**	**305**	**345**	**1050**
	HS132.02A	Contributory Personality Development		2	0	2	2			30	70	**100**
	EE346	Digital Signal Processing	3	2	0	5	4	30	70	25	25	**150**
	EE347	Programmable Logic Controllers and Industrial Automation	2	4	0	6	4	30	70	50	50	**200**
	EE348	Power Electronics & Drives II	3	2	0	5	4	30	70	25	25	**150**
	EE349	Fault Analysis and Switchgear	4	2	0	6	5	30	70	25	25	**150**
	EE360	Minor Project II	0	4	0	4	2	0	0	50	50	**100**
	EE376/EE386/EE387/EE388	Programme Elective II	3	2	0	5	4	30	70	25	25	**150**
		Assignment Practices/Student counselling/Remedial classes/Libarary/Sports/Extra curricular & cocurricular				3						
			15	**18**		**36**	**25**	**150**	**350**	**230**	**270**	**1000**

CHAROTAR UNIVERSITY OF SCIENCE & TECHNOLOGY (CHARUSAT)

Annexure I TEACHING & EXAMINATION SCHEME FOR B TECH PROGRAMME IN ELECTRICAL ENGINEERING (CBCS) Entry Year: 2019

Level	Course Code	Course Title	Teaching Scheme					Examination Scheme				
			Contact Hours				Credit	Theory		Practical		Total
			Theory	Practical	Tutorial	Total		Internal	External	Internal	External	
Level 4	EE441	Power System Operations and Control	4	2	0	6	5	30	70	25	25	**150**
	EE442	Power System Protection	4	2	0	6	5	30	70	25	25	**150**
	EE443	Electrical Machine Design	4	2	0	6	5	30	70	25	25	**150**
	EE444	Simulation Lab	0	4	0	4	2			50	50	**100**
	EE450	Summer Internship II			0		3			**75**	**75**	**150**
	EE481-EE484	Programme Elective III	3	2	0	5	4	30	70	25	25	**150**
		Assignment Practices/Student counselling/Remedial classes/Libarary/Sports/Extra curricular &cocurricular				9						
			15	**12**	**0**	**36**	**24**	**120**	**280**	**225**	**225**	**850**
	EE458	Major Project	**0**	**36**	**0**	**36**	**20**			**400**	**400**	**800**

CHAROTAR UNIVERSITY OF SCIENCE & TECHNOLOGY (CHARUSAT)

Annexure I TEACHING & EXAMINATION SCHEME FOR B TECH PROGRAMME IN ELECTRICAL ENGINEERING (CBCS) Entry Year: 2019

Level	Course Code	Course Title	Teaching Scheme					Examination Scheme				
			Contact Hours				Credit	Theory		Practical		Total
			Theory	Practical	Tutorial	Total		Internal	External	Internal	External	
CHAROTAR UNIVERSITY OF SCIENCE & TECHNOLOGY (CHARUSAT)												
		Hours					Credits	Marks				
		Total Teaching Hrs	Theory	Practical		Total						
		0	98	122		288	176	900	2100	1690	2010	6700

LIST OF ELECTIVES FOR B TECH PROGRAMME IN ELECTRICAL ENGINEERING

University Electives for Level 2

	Univestity Elective 1	Univestity Elective 2	
EE283	Python for Electrical Engineering	EE286	Computer Programming for Electrical Engineering

Electives for Level 3

	PROGRAMME ELECTIVE 1	PROGRAMME ELECTIVE 2	
EE371	Advanced Microcontrollers	EE376	Special Electrical Machines and Applications
EE381	Optimization Techniques	EE386	AI , Machine Learning and Data Analytics
		EE387	High Voltage Engineering
		EE388	Energy Conservation, Audit and Management

Electives for Level 4

	PROGRAMME ELECTIVE 3		
EE481	Power Electronics Applications in Power System		
EE482	Smart Grid Technology, IoT and Industry 4.0		
EE483	Electric Vehicles Technologies		
EE484	Modeling and Control of Renewable Energy Sources		
EE485	Commissioning and Testing of Electrical Equipments		

M&V Patel Department of Electrical Engineering
Faculty of Technology & Engineering, CHARUSAT
15th Board of Studies Meeting

Date : August 31, 2019, Saturday
Time : 10:00 am onwards
Venue: PG Computrer Lab (EE), CSPIT, CHARUSAT Campus

1	Dr. Nilay Patel	**Chairman;**	Assistant Professor & Head, Department of Electrical Engineering,	
2	Dr. Kartik Pandya	**Member;**	Professor, Department of Electrical Engineering,	
3	Mr. Maulik Shah	**Member;**	Assistant Professor Department of Electrical Engineering,	
4	Mr. Mhir Bhatt	**Member;**	Assistant Professor Department of Electrical Engineering,	
5	Mr. Jivanadhar Joshi	**Member;**	Assistant Professor, Department of Electrical Engineering,	
6	Mr. Soaib Saiyad	**Member;**	Assistant Professor, Department of Electrical Engineering,	
7	Mr. Jigar S Sarda	**Invitee Member;**	Assistant Professor, Department of Electrical Engineering,	
8	Dr. Praghnesh Bhatt	**External Member;**	Associate Professor, SoT, PDPU, Gandhinagar	
9	Dr. Santosh Vora	**External Member;**	Professor Department of Electrical Engineering Nirma University, Ahmedabad	
10	Dr. Naran Pindoriya	**External Member;**	Associate Professor, IIT, Gandhinagar.	
11	Dr. V K Shah	**External Member;**	R&D Engineer, ABB India Ltd, Vadodara	
12	Mr. Sanjay Mahagaokar	**External Member;**	General Manager - Engineering and Tech. Rotomotive Powerdrives India	
13	Mr. Darshan Shukla	**External Member;**	Jt. GM, Oil & Energy, L & T, Vadodara	

Minutes –16th Board of Studies Meeting
M&V Patel Department of Electrical Engineering
Faculty of Technology & Engineering, CHARUSAT

Date : July 04, 2020, Saturday
Time : 10:00 am onwards
Venue: Online (Google Meet Platform)

The 16th meeting of Board of Studies, M&V Patel Department of Electrical Engineering, Faculty of Technology and Engineering (FTE), Charotar University of Science and Technology (CHARUSAT) was held on 04/07/2020 at 10:00 am. On online platform. Following members were present:

1	Dr. Nilay Patel	**Chairman;**	Assistant Professor & Head, Department of Electrical Engineering,
2	Dr. Kartik Pandya	**Member;**	Professor, Department of Electrical Engineering,
3	Mr. Maulik Shah	**Member;**	Assistant Professor Department of Electrical Engineering,
4	Mr. Mhir Bhatt	**Member;**	Assistant Professor Department of Electrical Engineering,
5	Mr. Jivanadhar Joshi	**Member;**	Assistant Professor, Department of Electrical Engineering,
6	Mr. Soaib Saiyad	**Member;**	Assistant Professor, Department of Electrical Engineering,
7	Mr. Jigar S Sarda	**Invitee Member;**	Assistant Professor, Department of Electrical Engineering,
8	Dr. Praghnesh Bhatt	**External Member;**	Associate Professor, SoT, PDPU, Gandhinagar
9	Dr. Naran Pindoriya	**External Member;**	Associate Professor, IIT, Gandhinagar.
10	Dr. Vijay K Shah	**External Member;**	Vice President, Senior Principal Engineer-Electrification Business. ABB India Ltd, Vadodara
11	Dr. Santosh Vora	**External Member;**	Professor Department of Electrical Engineering Nirma University, Ahmedabad

Initiation:

Dr. Nilay Patel welcomed all the members of Board of Studies. The minutes of the 15th Board of Studies meeting held on August 31, 2019 was summarized.

Agenda Proceedings & Resolutions: -

Item 16.01	To review and approve the Teaching & Examination scheme for B. Tech. and detailed syllabus of 5th and 6th semesters (Third Year) B. Tech. (CBCS) for Electrical Engineering, applicable for 2019-20 (Admission) Batch. (Total 176 credits)
	Proceedings 16.01: The teaching and examination scheme for all the semesters of B. Tech. CBCS courses effective from July- 2019 under Choice Based Credit System (CBCS) is prepared and reviewed. Following Revisions in B Tech programme are proposed. ▪ In 2nd year, there is no change in teaching and evaluation scheme decided in last BoS for AY2020-21, except HSS and Mathematics courses. ▪ Courses for B Tach Third year syllabus (July 2019 Entry) are discussed and finalized. ▪ In 2nd year, following one additional university elective courses are introduced for B Tech effective from AY2020-21. CL283: SDG Handprint Laboratory (For UG Semester-3) **Resolution 16.01:** The suggestions received from BoS members are incorporated and T & E Scheme for B Tech July 2019 Intake is approved and is attached in **Annexure – I**
Item 16.02	To review and approve Teaching and Examination scheme and syllabus for Final Year B. Tech program for 2018-2019 (Admission) Batch under Choice Based Credit System (CBCS).
	Proceedings 16.02: The teaching and examination scheme of Final Year B. Tech program for 2018-2019 under Choice Based Credit System (CBCS) is reviewed. **Suggestions Received:** ▪ No need to revise it. **Resolution 16.02:** Whatever the T & E scheme was applied for AY 2019-2020 for final year, the same scheme will be applicable for AY 2021-22. (The same scheme is applicable for AY 2020-21 Final year students, except HSS Courses.) The T & E scheme for Final Year B. Tech. (2018 entry students) is attached in **Annexure – II**
Item 16.03	**For Discussion**: To review and approve T&E scheme and syllabus for FY, SY and TY of B. Tech program for ACY 2020-2021 under Choice Based Credit System (CBCS). Particularly for physics,

	mathematics and HSS department.
	Proceedings 16.03: T&E scheme and syllabus for FY, SY and TY of B. Tech program for ACY 2020-2021 under Choice Based Credit System (CBCS) are reviewed. Particularly for physics, mathematics and HSS department. ▪ In 1st year, there is no change in teaching and evaluation scheme for AY2020-21, except HSS, Physics and Environmental Science courses • In first year B Tech, Humanities (HSS), Physics and environmental Science courses are revised in introduced with effective from AY 2020-21 1. HS101.02A Communicative English (Sem-1) 2. HS201.02A-HS210.02A (Courses on liberal Arts) (Sem-2) 3. CL144B Environmental Science course introduce in place of CL142.01 (will be offered in Sem-1) 4. PY142 Engineering Physics-I course introduce. (Sem-1) 5. PY143 Engineering Physics-II course introduce. (Sem-2) • In second year B Tech, Mathematics course is revised and replaced with effective from AY 2020-21 MA252 Advanced Engineering Mathematics (Sem-3) • In second year B Tech, Humanities (HSS) courses are revised in introduced with effective from AY 2020-21 1. HS121.02A Creativity, Problem Solving and Innovation (Sem-3) 2. HS111.02A Human Values and Professional Ethics (Sem-4) • In third Year B Tech, Humanities (HSS) courses are revised in introduced with effective from AY 2020-21 1. HS131.02A Communication and Soft Skills (Sem-5) 2. HS132.02A Contributory Personality Development (Sem-6) **Resolution 16.03:** The suggestions received from BoS members are incorporated and detailed syllabi / T & E Scheme for B Tech is as per **Annexure I** (July 2019 Admission/Entry), **Annexure III** (July 2020 Admission/Entry) and **Annexure II** (July 2018 Admission/Entry).
Item 16.04	To review and approve T&E scheme for all the semesters of M. Tech. (Electrical Power System) CBCS courses. Approval of online or off-campus B Tech & M Tech. Classes.

	Proceedings 16.04: The teaching and examination scheme for all the semesters of M. Tech. (Electrical Power System) CBCS courses effective from July- 2019 under Choice Based Credit System (CBCS) is reviewed. **Suggestions Received:** ▪ As per last academic council meeting, first year university elective course is dropped. **Resolution 16.04:** The suggestions received from BoS members are incorporated in T & E Scheme for M. Tech. (Electrical Power System) and T & E Scheme of M Tech (EPS) July 2020 Intake is approved and attached in **Annexure – IV** The classes of B Tech and M Tech can be taken online or off-campus mode.
Item 16.05	Analysis and discussion on the semester end results of the students and steps taken for the remedial actions
	Proceedings 16.05: The records of result analysis of both internal and university exams are maintained. The results of both the exams are generally discussed and analysed in the department meeting as soon as the exam gets over and the necessary actions are decided. The YoY comparisons of the results are also discussed and the figures are acceptable. The efforts should be given to again improve the results at all levels. The conduction of the remedial coaching for weaker students has been appreciated by the members. **Annexure –V**
Item 16.06	Analysis of campus placement and discussion of related activities to enhance them further. (Annexure-VI)
	Proceedings 16.06: The campus placement of the student needs to be increased. More efforts are required to invite the companies for placement. The aptitude sessions organized for the students are appreciated. It is advised to keep extra technical session to prepare the students for technical skills. **Annexure –VI**
Item 16.07	To add new University Elective and revise existing University Electives from Electrical Engineering Department for UG Program.
	Proceedings 16.07: Review the title of the UE courses offered by Electrical Engineering department and discussion on new UE course from EE department under Choice Based Credit System (CBCS). (Applicable from AY 2021-22) **Suggestions Received:** ▪ **EE284 Python Programming** replaces EE283 Python for Electrical Engineering course. (UE Sem-3)

	▪ **EE287 MATLAB Programming** replaces EE286 Computer Programming for Electrical Engineering. (UE Sem-4) ▪ **EE288 Maintenance of Household Apparatus** is introduced as new UE course from Electrical Engineering Department in Sem 4. **Resolution 16.07:** The suggestions received from BoS members are incorporated in T & E Scheme for B. Tech. (July 2020 Admission Batch, Effective from AY 2021-22) and is attached in **Annexure – III**
Item 16.08	To review and approve newly added and revised Elective courses of third year and final year for 2019-20 Admission batch under Choice Based Credit System (CBCS). Here main task to streamline the courses related to AI, Smart grid, machine learning etc.
	Proceedings 16.08: The syllabus for TY and Final Year of B. Tech. Elective courses effective from July- 2019 Admission batch under Choice Based Credit System (CBCS) is prepared and reviewed. Following Suggestions on Elective courses in B Tech programme are proposed. ▪ In 3rd and 4th year, comprehensive and contemporary elective courses are introduced for providing more choices to the students. ▪ The following courses that are in line with the current industry requirement and skill based are included in 3rd level and 4th level of curriculum. The listing is as under. The major topics of courses are discussed but detailed syllabus for 4th level will be prepared in next stage. ▪ The newly introduced electives are in track/stream of electives offered in previous semesters and hence students following track suggested by department will be able to get detailed knowledge of the selected stream. The may be given minor in following streams. ➢ **Python for Data Analytics – Machine Learning Fundamentals – Deep Learning Applications and AI** falls under one stream of electives. (Offered in 5th, 6th and 7th semester respectively.) ➢ Optimization Techniques ➢ Smart Grid Technology, IoT and Industry 4.0 ➢ Electric Vehicle Technologies The specialized courses taught from specialized faculties. Also, hands on practice needed for students. **Resolution 16.08:** The suggestions received from BoS members are incorporated and T & E Scheme for B. Tech. July 2019 and July 2020 Intake is approved and is attached in **Annexure – I & III**

Item 16.09

Preparation, Discussion, and approval of the Elective Courses (University, Institute, and Program Electives)

Proceedings 16.09:

T&E scheme and syllabus for First Year M Tech (EE) program for ACY 2020-2021 under Choice Based Credit System (CBCS) are reviewed. Particularly for HSS department.

In first year M Tech, Humanities (HSS) courses are revised in introduced with effective from AY 2020-21

1. HS141.02A Foreign Languages (French) (Sem-1)
2. HS105.02A Academic Speaking and Presentation Skills (Sem-1)
3. HS106.02A Academic Writing (Sem-2)

Resolution 16.09:

The suggestions received from BoS members are incorporated in T & E Scheme for M. Tech. (Electrical Power System). It is approved and is attached in **Annexure – IV**

Item 16.10

For Discussion:

To approve the PhD Synopsis of research scholar

Proceedings 16.10:

Department of Electrical Engineering, Faculty of Technology & Engineering has received following synopsis of research scholar during 2019-20.

Sr. No.	Research Scholar	Research Topic
1	Dharmesh Dabhi (16DREE007)	Developing Metaheuristic Optimization Techniques For Optimal Scheduling of Distributed Energy Resources on Smart Grid Environment.

Synopsis and panel referees of research scholars are placed before the BoS members.

Resolution- 16.10

Board of Studies members approved the synopsis & panel referees of Research Scholar(s) for further process.

Item 16.11

Proceedings 16.11:

Giving information about seat reduction in B. Tech. (Electrical) and closure of M. Tech. (PE) Programme.

From AY 2020-21, B Tech Electrical Engineering seats reduced to 60.
From AY 2020-21 M Tech (Power Electronics) program is closed.

Item 16.12

Proceedings 16.12:

Discussion on minor specialization in the EMERGING AREAS viz., Artificial Intelligence (AI), Internet of Things (IoT), Block chain, Robotics, Quantum Computing, Data Sciences, Machine Learning etc. in B Tech Electrical Engineering was done.

	All the members of BoS appreciated this move towards recent era skill needed.
	Resolution BoS chairman is given power to decide the additional 18 to 20 credit course as per latest trends and can be implemented from 4th semester of AY2020-21.

Additional Items

Sr. No	Agenda	Discussion/Suggestions
1	Review of Exam Question Papers	Question papers of internal and university examination have been reviewed. The briefings about the continuous evaluation, freedom for pedagogy selection for faculty and execution of the practical sessions have been given to external BoS members. The quality of question papers are found satisfactory, but it is suggested to increase the weightage on the questions that can increase the analytical and logical thinking ability of students. The question papers are as per blooms taxonomy. **Annexure –VII and VIII**
2	Discussion on effective implementation of Outcome Based Education (OBE) and ICT based Teaching-Learning	**Suggestions Received:** ▪ All faculty members must aware about each criteria defined by NBA and NAAC. ▪ The proper understanding of mapping of POs, PEOs, COs and their assessment tools is required. ▪ Faculty contribution should be increased for publication, funded projects and consultancy. ▪ The usage of open course from NPTEL, MIT and BISAC must be increased. Google classroom should be used as ICT platform.
3	Review Research Activities, Projects, Consultancy etc.	Every faculty must try to bring funded research projects and consultancy. Relation with industry must be made very strong Explore the new dimensions about research
4	Review of B. Tech and M. Tech Projects works	The project titles for B. Tech and M. Tech are reviewed and found satisfactory. It is suggested to give more emphasis on hardware based projects at B. Tech level. For M. Tech, the extensive use of licenses software may help the students to solve/reproduce the IEEE journal papers. Paper presentation for M. Tech students should be made compulsory.
5	Review of Feedback from Students, Identification of slow learners, Counseling activities	Review pattern for the students' feedback and actions after the feedback have been explained. It is a useful component to improve the performance of teacher and T-L practices. The student counseling activities are very appreciated by all the members.
6	Approval of Examiners' Panel	The examiners panels for B. Tech and M. Tech have been reviewed and approved. The approved examiner panel is attached in **Annexure IX**

7	Admissions	As per the experts, the Electrical branch interest is not reduced, but the interest towards CE/IT branch is increased, Hence Electrical Branch has to suffer for a complete one cycle.
8.	Audit Course	Electrical students can be offered audit course from CE/IT on IoT. Also Electrical department should offer audit course on Arduino. Apart from the regular teaching, by audit course, social activities and by taking parts in sports and co/extra-curricular activities, the holistic development of student will be possible.
9.	Sports, Cultural and Social activities.	The students are encouraged to take part in national and international level sports events. With social activities, the bonding and trust with society and CHARUSAT will increase. At least one week cultural programme to be organized by institute.
10.	Quality of research in dissertation and PhD. Panel of Ph D Supervisors	For PhD it is essential to publish at least to research papers in Scopus indexed journals, hence Quality will be there in research work. For PhD mentor or co-guide can be invited for research scholars of the department.
11.	Research publications, proposals and grants	Each faculty must publish at least two papers in high impact factor journal. By this the CV of the faulty become strengthen, hence chances of getting grants will increase. More efforts will be put to fetch the research grants. All the faculties are aware about funding agencies.
12.	NPTEL Course	Now as pert AICTE, NPTEL Course will be considered as FDP and according to that API point given to faculty.
13.	Innovation in Pedagogy	The educational goal must be discussed by student and teacher and according to that, A common strategies for class must be made and according to individual student's knowledge, individual strategies should be explained to each student. Learning while doing is best pedagogy.
14	Quality in Education and World Class Universities	By quality consultancy work, more practical knowledge and time-on-task learning strategy accelerates the quality education and movement towards the world class universities.
15	Outcome Based Education and Road-map 2023	The outcome of each course and program must be monitored effectively. If required outcome doesn't achieve in students, more quality efforts must be made. The main focus of road-map 2023 is, placement of eligible students must be reach up to 100%. **Annexure –X**
16.	Innovative Projects	The BoS members appreciated the department projects. The capacity of the department must be showcased to industry people.

Faculty Board Meeting:

Faculty board meeting was held at online platform of Google Meet at 12.00 noon.

The inputs given by expert of electrical field are as under.

1. Right now the interest of students is towards the computer related branch, hence the number of students in the electrical or other branch are less.

2. Dr. Praghnesh bhatt and Dr. Santosh Vora, FB Member, appreciated the course covered in curriculum. They suggested to introduce the students clubs at Electrical Engineering Department.
3. Dr. Santosh Vora insist on the inter institute collaboration.
4. Experts gave their opinion that, each branch has its cycle depending on market scenario. So within two years, again the interest of students towards the core branch will increase.
5. BoS of the respective branch discussed and agreed upon a common point to offer a minor degree in an emerging area as per the guideline of AICTE.
6. Additional 18 to 20 credit courses offered along with B. Tech. curriculum to earn a minor degree.
7. Concern board authorized the chairman of BoS of Civil Engineering, Mechanical Engineering, and Electrical Engineering to initiate the action related to offering minor specialization in emerging areas and subsequently inform the board after the finalization of course structure and syllabi.

Dr. Nilay A. Patel
Chairman
Board of Studies (EE)

HEAD OF DEPARTMENT
Dept. of Electrical Engg.
Chandubhai S. Patel Institute of Technology
At. & Po. Changa-388421., Ta. Petlad,
Dist. : Anand. (Gujarat)

CHAROTAR UNIVERSITY OF SCIENCE & TECHNOLOGY (CHARUSAT)

16.01 Annexure I TEACHING & EXAMINATION SCHEME FOR B TECH PROGRAMME IN ELECTRICAL ENGINEERING (CBCS) Entry Year: 2019

Level	Course Code	Course Title	Teaching Scheme					Examination Scheme				
			Contact Hours				Credit	Theory		Practical		Total
			Theory	Practical	Tutorial	Total		Internal	External	Internal	External	
Level 1	HS101.01 A-HS110.01A	A Course on Liberal Arts (Elective I)		2	0	2	2			30	70	**100**
	MA143	Engineering Mathematics I	4	0	1	5	4	30	70	0	0	**100**
	ME146	Engineering Graphics	2	2	1	5	3	30	70	25	25	**150**
	PY141.01	Engineering Physics	3	2	0	5	4	30	70	25	25	**150**
	CL143	Engineering Mechanics	3	2	1	6	4	30	70	25	25	**150**
	ME142	Workshop Practices	0	2		2	1			25	25	**50**
		Assignment Practices/Student counselling/Remedial classes/Library/Sports/Extra curricular & cocurricular				11						
			12	**10**		**36**	**18**	**120**	**280**	**130**	**170**	**700**
	HS126.01 A	Communication Skills -1	2		0	2	2	30	70			**100**
	CL142.01	Environmental Science		2	0	2	2			30	70	**100**
	MA144	Engineering Mathematics II	4	0	1	5	4	30	70			**100**
	IT143	Fundamentals of Computer Programming	2	2	0	4	3	30	70	25	25	**150**
	ME147	Basics of Civil & Mech Engineering	3	2	0	5	4	30	70	25	25	**150**
	EE145	Basics of Electronics & Electrical Engineering	3	2	0	5	4	30	70	25	25	**150**
		Assignment Practices/Student counselling/Remedial classes/Library/Sports/Extra curricular & cocurricular				13						
			14	**8**		**36**	**19**	**150**	**350**	**105**	**145**	**750**

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			Contact Hours				Credit	Theory		Practical		Total
			Theory	Practical	Tutorial	Total		Internal	External	Internal	External	
Level 2	HS121.02A	Creativity, Problem Solving and Innovation		2		2	2	0	0	30	70	**100**
	MA252	Advanced Engineering Mathemathics	4	0	0	4	4	30	70			**100**
	EE251	Analog and Digital Electronics	3	2	0	5	4	30	70	25	25	**150**
	EE252	Circuit Theory	3	2	0	5	4	30	70	25	25	**150**
	EE243	Electrical Measurements and Industrial Instrumentation	4	2	0	6	5	30	70	25	25	**150**
	XXXXX	University Elective- I		2	0	2	2			30	70	**100**
		Assignment Practices/Student counselling/Remedial classes/Library/Sports/Extra curricular &cocurricular				12						
			14	**10**	**0**	**36**	**21**	**120**	**280**	**135**	**215**	**750**
	HS111.02A	Human Values and professional Ethics		2	0	2	2			30	70	**100**
	EE254	Electrical Power Generation and its Economics	3	0	0	3	3	30	70			**100**
	EE255	Control Systems	3	2	0	5	4	30	70	25	25	**150**
	EE246	Microprocessor & Microcontrollers	4	2	0	6	5	30	70	25	25	**150**
	EE247	Transformers and Induction Machines	4	4	0	8	6	30	70	50	50	**200**
	XXXXX	University Elective- II		2	0	2	2			30	70	**100**
		Assignment Practices/Student counselling/Remedial classes/Library/Sports/Extra curricular & cocurricular				10						
			14	**12**		**36**	**22**	**120**	**280**	**160**	**240**	**800**

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16.01 Annexure I TEACHING & EXAMINATION SCHEME FOR B TECH PROGRAMME IN ELECTRICAL ENGINEERING (CBCS) Entry Year: 2019

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			Contact Hours				Credit	Theory		Practical		Total
			Theory	Practical	Tutorial	Total		Internal	External	Internal	External	
Level 3	HS131.02A	Communication and Soft Skills		2	0	2	2			30	70	**100**
	EE351	Electrical Power Transmission and Distribution	3	0	0	3	3	30	70	0	0	**100**
	EE342	Synchronous and DC Machines	4	4	0	8	6	30	70	50	50	**200**
	EE353	Power Electronics & Drives I	3	2	0	5	4	30	70	25	25	**150**
	EE344	Minor Project I	0	4	0	4	2			50	50	**100**
	EE345	Electrical Product Survey	0	2	0	2	2			50	50	**100**
	EE371-EE375	Programme Elective I	4	2	0	6	5	30	70	25	25	**150**
	EE350	Summer Internship I	0	0	0	0	3			75	75	**150**
		Assignment Practices/Student counselling/Remedial classes/Library/Sports/Extra curricular & cocurricular				6						
			14	**16**	**0**	**36**	**27**	**120**	**280**	**305**	**345**	**1050**
	HS132.02A	Contributory Personality Development		2	0	2	2			30	70	**100**
	EE346	Digital Signal Processing	3	2	0	5	4	30	70	25	25	**150**
	EE347	Programmable Logic Controllers and Industrial Automation	2	4	0	6	4	30	70	50	50	**200**
	EE348	Power Electronics & Drives II	3	2	0	5	4	30	70	25	25	**150**
	EE349	Fault Analysis and Switchgear	4	2	0	6	5	30	70	25	25	**150**
	EE360	Minor Project II	0	4	0	4	2	0	0	50	50	**100**
	EE376-EE381	Programme Elective II	3	2	0	5	4	30	70	25	25	**150**
		Assignment Practices/Student counselling/Remedial classes/Library/Sports/Extra curricular & cocurricular				3						
			15	**18**		**36**	**25**	**150**	**350**	**230**	**270**	**1000**

CHAROTAR UNIVERSITY OF SCIENCE & TECHNOLOGY (CHARUSAT)												
16.01 Annexure I TEACHING & EXAMINATION SCHEME FOR B TECH PROGRAMME IN ELECTRICAL ENGINEERING (CBCS) Entry Year: 2019												
Level	**Course Code**	**Course Title**	**Teaching Scheme**					**Examination Scheme**				
			Contact Hours				**Credit**	**Theory**		**Practical**		**Total**
			Theory	**Practical**	**Tutorial**	**Total**		**Internal**	**External**	**Internal**	**External**	
Level 4	EE441	Power System Operations and Control	4	2	0	6	5	30	70	25	25	**150**
	EE442	Power System Protection	4	2	0	6	5	30	70	25	25	**150**
	EE443	Electrical Machine Design	4	2	0	6	5	30	70	25	25	**150**
	EE444	Simulation Lab	0	4	0	4	2			50	50	**100**
	EE450	Summer Internship II			0		3			**75**	**75**	**150**
	EE481/EE482/EE483/EE446.01/EE447.01/EE476.01	Programme Elective III	3	2	0	5	4	30	70	25	25	**150**
		Assignment Practices/Student counselling/Remedial classes/Library/Sports/Extra curricular &cocurricular				9						
			15	**12**	**0**	**36**	**24**	**120**	**280**	**225**	**225**	**850**
	EE458	Major Project	**0**	**36**	**0**	**36**	**20**			**400**	**400**	**800**

CHAROTAR UNIVERSITY OF SCIENCE & TECHNOLOGY (CHARUSAT)

16.01 Annexure I TEACHING & EXAMINATION SCHEME FOR B TECH PROGRAMME IN ELECTRICAL ENGINEERING (CBCS) Entry Year: 2019

Level	Course Code	Course Title	Teaching Scheme					Examination Scheme				
			Contact Hours				Credit	Theory		Practical		Total
			Theory	Practical	Tutorial	Total		Internal	External	Internal	External	
CHAROTAR UNIVERSITY OF SCIENCE & TECHNOLOGY (CHARUSAT)												
		Hours					Credits	Marks				
		Total Teaching Hrs	Theory	Practical		Total						
		0	98	122		288	176	900	2100	1690	2010	6700

LIST OF ELECTIVES FOR B TECH PROGRAMME IN ELECTRICAL ENGINEERING

University Electives for Level 2

	Univestity Elective 1		Univestity Elective 2
EE283	Python for Electrical Engineering	EE286	Computer Programming for Electrical Engineering

Electives for Level 3

	PROGRAMME ELECTIVE 1 (4+2)		PROGRAMME ELECTIVE 2 (3+2)
EE371	Advanced Microcontrollers	EE376	Special Electrical Machines and Applications
EE372	VLSI Technology and Design	EE377	Embedded Systems
EE373	Optimization Techniques	EE378	Power Electronics Applications in Power System
EE374	Distributed Generation and Microgrid	EE379	High Voltage Engineering
EE375	Energy Conservation, Audit and Management	EE380	Internet of Things
		EE381	Hybrid and Electric Vehicles

Electives for Level 4

	PROGRAMME ELECTIVE 3 (3+2)
EE481	Industry 4.0
EE482	Smart Grid Technologies and Applications
EE483	Communication Engineering
EE446.01	Commissioning and Testing of Electrical Equipments
EE447.01	Modeling and Control of Renewable Energy Sources
EE476.01	Advances in Power System

CHARUSAT
CHAROTAR UNIVERSITY OF SCIENCE AND TECHNOLOGY

Head Electrical CHARUSAT <hod.ee@charusat.ac.in>

Approval of MoM of BoS

9 messages

Head Electrical CHARUSAT <hod.ee@charusat.ac.in> Wed, Jul 8, 2020 at 3:04 PM
To: Praghnesh.Bhatt@sot.pdpu.ac.in, Naran Pindoriya <naran@iitgn.ac.in>, Vijay Shah <vijay.shah@in.abb.com>, Prof Santosh Vora <santosh.vora@nirmauni.ac.in>

Respected sir,
Herewith I am sending you the Minutes of BoS meeting held on 4th July 2020.
You are requested to approve the same.
Regards,

--

Dr. Nilaykumar A. Patel
Assistant professor & Head,
Electrical Engineering Dept.
Chandubhai S. Patel Institute of Technology,
CHARUSAT,
Changa. 388421
Ta: Petlad.
Phone:02697 265041

My Web Page: https://sites.google.com/charusat.ac.in/nilaypatel/home

Minutes 16th BOS Meeting_04_07_2020.zip
469K

Praghnesh Bhatt <Praghnesh.Bhatt@sot.pdpu.ac.in> Thu, Jul 9, 2020 at 1:25 PM
To: Head Electrical CHARUSAT <hod.ee@charusat.ac.in>

Dear Sir

The MoM for BoS is approved from my end.

Regards

Dr Praghnesh Bhatt
Associate Professor & Head
Department of Electrical Engineering
School of Technology, PDPU
Ext: 079-2327-5664
Mo: +91-7567513461/+91-9427339896
https://scholar.google.com/citations?user=KpSDpKAAAAAJ&hl=en&oi=sra
https://orcid.org/0000-0002-0262-9991
https://www.scopus.com/authid/detail.uri?authorId=35589405600
https://app.webofknowledge.com/author/#/record/2378176

From: Head Electrical CHARUSAT [hod.ee@charusat.ac.in]
Sent: Wednesday, July 08, 2020 3:04 PM
To: Praghnesh Bhatt; Naran Pindoriya; Vijay Shah; Prof Santosh Vora
Subject: Approval of MoM of BoS

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Vijay Shah <vijay.shah@in.abb.com> Thu, Jul 9, 2020 at 2:53 PM
To: Head Electrical CHARUSAT <hod.ee@charusat.ac.in>

Dear Prof. Patel

MOM is approved from my side. Do you want any page to be signed -scanned and sent over mail or this approval itself is ok ?

Thanks and best regards

Vijay

From: Head Electrical CHARUSAT <hod.ee@charusat.ac.in>
Sent: Wednesday, July 8, 2020 3:05 PM
To: Praghnesh.Bhatt@sot.pdpu.ac.in; Naran Pindoriya <naran@iitgn.ac.in>; Vijay Shah <vijay.shah@in.abb.com>; Prof Santosh Vora <santosh.vora@nirmauni.ac.in>
Subject: Approval of MoM of BoS

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Prof Santosh Vora <santosh.vora@nirmauni.ac.in> Thu, Jul 9, 2020 at 4:49 PM
To: Head Electrical CHARUSAT <hod.ee@charusat.ac.in>
Cc: Praghnesh Bhatt <Praghnesh.Bhatt@sot.pdpu.ac.in>, Naran Pindoriya <naran@iitgn.ac.in>, Vijay Shah <vijay.shah@in.abb.com>

Dear Sir,

Thanks for the email. Please consider the BoS meeting minutes approved.

Regards,
Dr. S. C. Vora

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> [Quoted text hidden]
> [Quoted text hidden]

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Head Electrical CHARUSAT <hod.ee@charusat.ac.in> Sat, Feb 20, 2021 at 9:43 AM
To: Praghnesh.Bhatt@sot.pdpu.ac.in, Naran Pindoriya <naran@iitgn.ac.in>, Vijay Shah <vijay.shah@in.abb.com>, Prof Santosh Vora <santosh.vora@nirmauni.ac.in>, darshan.shukla@larsentoubro.com

Dear Sir,
As per the agenda Item and resolution 16.12 of BoS16, Our department has decided to offer two minor specialization to Electrical Engineering students.
1. Minor specialization in "Machine Learning and Artificial Intelligence".

2. Minor specialization in "Electrical Vehicle Systems".
The students can opt any of two. Taking minor specialization is not mandatory for students.
The minor specialization in "Electrical Vehicle Systems" will be offered from AY2021-22
The T&E scheme and 4th sem course of "Machine Learning and AI" is attached here for your reference and feedback. This course is offered from AY2020-21.

Regards,
[Quoted text hidden]

Dr. Nilaykumar A. Patel
Associate professor & Head,
[Quoted text hidden]

2 attachments

Teaching scheme B. Tech. Electrical Specialization AI ML 2020-21.pdf
13K

Python Programming Skills_Semester_4.pdf
554K

DARSHAN SHUKLA <DARSHAN.SHUKLA@larsentoubro.com> Sat, Feb 20, 2021 at 11:55 AM
To: "Praghnesh.Bhatt@sot.pdpu.ac.in" <Praghnesh.Bhatt@sot.pdpu.ac.in>, Naran Pindoriya <naran@iitgn.ac.in>, Vijay Shah <vijay.shah@in.abb.com>, Prof Santosh Vora <santosh.vora@nirmauni.ac.in>, Head Electrical CHARUSAT <hod.ee@charusat.ac.in>

Approved.

Together we win

From: Head Electrical CHARUSAT <hod.ee@charusat.ac.in>
Sent: Saturday, February 20, 2021 9:43:37 AM
To: Praghnesh.Bhatt@sot.pdpu.ac.in <Praghnesh.Bhatt@sot.pdpu.ac.in>; Naran Pindoriya <naran@iitgn.ac.in>; Vijay Shah <vijay.shah@in.abb.com>; Prof Santosh Vora <santosh.vora@nirmauni.ac.in>; DARSHAN SHUKLA <DARSHAN.SHUKLA@larsentoubro.com>
Subject: Re: Approval of MoM of BoS

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Vijay Shah <vijay.shah@in.abb.com> Sat, Feb 20, 2021 at 1:44 PM
To: Head Electrical CHARUSAT <hod.ee@charusat.ac.in>, "Praghnesh.Bhatt@sot.pdpu.ac.in" <Praghnesh.Bhatt@sot.pdpu.ac.in>, Naran Pindoriya <naran@iitgn.ac.in>, Prof Santosh Vora <santosh.vora@nirmauni.ac.in>, "darshan.shukla@larsentoubro.com" <darshan.shukla@larsentoubro.com>

Dear All,

If this needs approval from BOS, then yes from my side approved.

Best regards

Vijay

From: Head Electrical CHARUSAT <hod.ee@charusat.ac.in>
Sent: Saturday, February 20, 2021 9:44 AM
To: Praghnesh.Bhatt@sot.pdpu.ac.in; Naran Pindoriya <naran@iitgn.ac.in>; Vijay Shah <vijay.shah@in.abb.com>; Prof Santosh Vora <santosh.vora@nirmauni.ac.in>; darshan.shukla@larsentoubro.com
Subject: Re: Approval of MoM of BoS

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Praghnesh Bhatt <Praghnesh.Bhatt@sot.pdpu.ac.in> Sat, Feb 20, 2021 at 1:59 PM
To: Head Electrical CHARUSAT <hod.ee@charusat.ac.in>
Cc: Naran Pindoriya <naran@iitgn.ac.in>, Vijay Shah <vijay.shah@in.abb.com>, Prof Santosh Vora <santosh.vora@nirmauni.ac.in>, "darshan.shukla@larsentoubro.com" <darshan.shukla@larsentoubro.com>

Dear Sir

You may proceed further in the matter.

Regards

Dr Praghnesh Bhatt
Associate Professor & Head
Department of Electrical Engineering
School of Technology, PDPU
Ext: 079-2327-5664
Mo: +91-7567513461/+91-9427339896
https://scholar.google.com/citations?user=KpSDpKAAAAAJ&hl=en&oi=sra
https://orcid.org/0000-0002-0262-9991
https://www.scopus.com/authid/detail.uri?authorId=35589405600
https://app.webofknowledge.com/author/#/record/2378176

From: Head Electrical CHARUSAT [hod.ee@charusat.ac.in]
Sent: Saturday, February 20, 2021 9:43 AM
To: Praghnesh Bhatt; Naran Pindoriya; Vijay Shah; Prof Santosh Vora; darshan.shukla@larsentoubro.com
Subject: Re: Approval of MoM of BoS

[Quoted text hidden]

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[Quoted text hidden]

Prof Santosh Vora <santosh.vora@nirmauni.ac.in> Sat, Feb 20, 2021 at 2:07 PM
To: Head Electrical CHARUSAT <hod.ee@charusat.ac.in>
Cc: Praghnesh Bhatt <Praghnesh.Bhatt@sot.pdpu.ac.in>, Naran Pindoriya <naran@iitgn.ac.in>, Vijay Shah <vijay.shah@in.abb.com>, darshan.shukla@larsentoubro.com

Dear Sir,

Thanks for the email.

You may consider it as approved from my side.

Regards,
Dr. S. C. Vora

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> [Quoted text hidden]
>
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message, and taking action thereof, the recipient relieves the CHARUSAT of all the liabilities including any damages done to the recipient's pc/laptop/peripherals and other communication devices due to any reason.

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M & V Patel Department of Electrical Engineering

Action taken report on the feedbacks received from different Stack Holders

For the AY 2019-20

The summary of the feedback and suggestions received from the stakeholder and corresponding action taken for AY 2019-20 is as below.

Sr. No.	Suggestion Received	Action Taken	Annexure Page No.
1.	Minor Specialization should be included.	Minor Specialization on "Artificial Intelligence and Machine Learning" is implemented from AY 2020-21. Minor Specialization on "Electrical Vehicle Systems" will be implemented from AY 2021-22.	20,21
2.	Full time final year project for long duration.	Final year project credit and time are revised in Board of Studies meeting held on 28/07/2018. For 2019 Entry Batch Full 8th semester Project has been Introduced.	3,12
3.	Increase the placement and number of companies.	More companies have invited for campus placement by increasing relation with companies.	18,39,37
4.	Preparatory sessions need to be arranged for increasing the placement numbers.	Mock interviews for placements are arranged.	38,39
5.	AI and Electrical Vehicles courses need to be inclided.	New elective courses are introduced	19,20,28

HEAD OF DEPARTMENT
Dept. of Electrical Engg.
Chandubhai S. Patel Institute of Technology
At. & Po. Changa-388421., Ta. Petlad,
Dist. : Anand. (Gujarat)

Minutes –14-Ath Board of Studies Meeting
M&V Patel Department of Electrical Engineering
Faculty of Technology & Engineering, CHARUSAT

Date : July 28, 2018, Saturday
Time : 10:00 am onwards
Venue: Room No: 102, HOD (EE), CSPIT, CHARUSAT Campus

The 14th meeting of Board of Studies, M&V Patel Department of Electrical Engineering, Faculty of Technology and Engineering (FTE), Charotar University of Science and Technology (CHARUSAT) was held on 28/7/2018 at 10:00 am. at M&V Patel Department of Electrical Engineering, CSPIT, CHARUSAT Campus. Following members were present:

1	Mr. Nilay Patel	**Chairman;**	Assistant Professor & Head, Department of Electrical Engineering,	
2	Dr. Kartik Pandya	**Member;**	Professor, Department of Electrical Engineering,	
3	Mr. Maulik Shah	**Member;**	Assistant Professor Department of Electrical Engineering,	
4	Mr. Mhir Bhatt	**Member;**	Assistant Professor Department of Electrical Engineering,	
5	Mr. Jivanadhar Joshi	**Member;**	Assistant Professor, Department of Electrical Engineering,	
6	Mr. Pratik Mochi	**Member;**	Assistant Professor, Department of Electrical Engineering,	
7	Mr. Jigar S Sarda	**Member;**	Assistant Professor, Department of Electrical Engineering,	
8	Dr. Bhavik Suthar	**External Member;**	Professor, Government Engineering College, Bhuj	
9	Dr. Sanjay R. Joshi	**External Member;**	Principal Government Engineering College, Valsad	
10	Prof. P. K. Shah	**External Member;**	Professor LDRP, Modasa	
11	Dr. Santosh Vora	**External Member;**	Professor Department of Electrical Engineering Nirma University, Ahmedabad	

Initiation:

Mr. Nilay Patel welcomed all the members of Board of Studies.

Agenda Proceedings & Resolutions:-

Item 14.01: To prepare and review the detailed syllabus of 4th year B.TECH program under CBCS.

Proceedings 14.01:

The detailed syllabus of the courses for B Tech – 4th Year (7thand 8thSemesters) is reviewed.

Suggestions Received:

EE441: Power System Operations and Control

1	Topics on State Estimation & Load forecasting should be incorporated.
2	Syllabus is lengthy.
3	Chapter of transients should be removed or modified
4	Text books and reference books should be swapped.
5	Year of the book can be removed as it seems to be old version of book.
6	Voltage stability part can be removed.
7	Add contingency analysis method
8	Use B.R..Gupta as a text book

EE442: Power System Protection

1	Chapter 9 should be removed.
2	16 hours of transmission can be reduced.
3	Add Earthing of power system

EE443: Electrical Machine Design

1	DC machine design part can be reduced/removed.

EE444: Simulation Lab

1	Hours distribution modify
2	20 hours are more.
3	Keep basic experiments.
4	Experiments of machine are tough for students.
5	It should be "Suggested" list of experiment in syllabus booklet.
6	Fault analysis experiments can be added.
7	Linear equation solution can be added.
8	Multiple faculties should be involved in framing the experiments and conducting lab.
9	It should be kept simple for students.
10	Numerical Methods, RLC series and Parallel operation and its Transients type Practical should be included.

EE471: Power Electronics Applications in Power System (Programme Elective III)

1	Power quality can be removed. SSSC and UPFC can be removed.
2	Chapter 2 should be up to topic "converter transformer testing"
3	Problems in transmission line should be involved.

EE472: Communication Engineering (Programme Elective III)

1	Syllabus designed is fine

EE473: High Voltage Engineering (Programme Elective III)

1	Contents of chapter 07 can be reduced.
2	Remove power quality problems & standard chapter

EE446: Commissioning and Testing of Electrical Equipment

1	Syllabus is lengthy.
2	Chapter of DC machine can be removed.
3	Commissioning part should be more rather than testing.

EE447: Modeling and Control of Renewable Energy Sources

1	Name of the subject should be modified as Renewable Energy Sources and offer as elective subject
2	Content of Solar and Wind should be more.
3	Chapter 5 can be removed.
4	Course can be offered as **programme elective.**

EE448: Major Project

1 Project should be in line with innovation or today's' need.

EE450: Summer Internship II

1 On the same line of summer Internship-I, this course will follow.

EE476: Advances in Power System (Programme Elective IV)

1	Remove probabilistic power flow chapter
2	Add Restructuring in power system

EE477: Internet of Things (Programme Elective IV)

1 Syllabus designed is fine.

EE478: Energy Conservation and Management (Programme Elective IV)

	1 No Comments **Resolution 14.01:** ▪ The suggestions received from BoS members are incorporated and detailed syllabi / T & E Scheme for B Tech – 4th Year (7th and 8th Semesters) effective from 2019-2020 is approved and is attached in **Annexure – I**
Item 14.02	To review and approve T&E scheme and syllabus for FY, SY and TY of B. Tech program for ACY 2018-2019 under Choice Based Credit System (CBCS).
	Proceedings 14.02: The teaching and examination scheme of FY, SY and TY of B. Tech program for ACY 2018-2019 under Choice Based Credit System (CBCS) is reviewed. **Suggestions Received:** The second year university electives offered by electrical engineering department should be more in line with current scenario and it must be changed. **EE283: Python for Electrical Engineering (University Elective I)** 1 Basics of python programming taught here. 2 Various problems can be solved using python programming. **EE286: Computer Programming for Electrical Engineering (University Elective I)** 1 MATLAB and other software introduced here to solve simple circuit. 2 Linear equations, non-linear equations, ODE and matrices should be solved by software. **Resolution 14.02:** Above two courses introduce from AY 2018-19, remaining electives can be kept as it is. For the 2018 entry students, the first year and second year syllabus is reviewed and approved. Physics course PY141.01 is approved in respective BoS and introduced in first year. The T & E scheme is approved for third year and fourth year. It is decided that the total credit must be equal to 192. The T & E scheme for 2018 entry student is attached in **Annexure – II**
Item 14.03	To review and approve T&E scheme of M. Tech in Power Electronics for ACY 2018-2019 under CBCS
	Proceedings 14.03: The teaching and examination scheme of M. Tech in Power Electronics for ACY 2018-2019 under CBCS is reviewed.

	Suggestions Received: ▪ No Suggestion. It is already draft one year back and approved. Attached in **Annexure – III**
Item 14.04	To review T&E Scheme for existing M. Tech program under CBCS for any necessary changes
	Proceedings 14.04: The teaching and examination scheme of M. Tech in EPS for ACY 2018-2019 under CBCS is reviewed. **Suggestions Received:** ▪ No Suggestion. It is already draft one year back and approved. Attached in **Annexure –IV**
Item 14.05	**Proceedings 14.05:** Discussion on effective implementation of Outcome Based Education (OBE) and ICT based Teaching-Learning
	Suggestions Received: ▪ All faculty members must aware about each criteria defined by NBA. ▪ The proper understanding of mapping of POs, PEOs, COs and their assessment tools is required. ▪ Faculty contribution should be increased for publication, funded projects and consultancy. ▪ The usage of open course ware from NPTEL, MIT and BISAC must be increased.
Item 14.06	**Proceedings 14.06:** Introducing the new UG program in Electrical Engineering
	Suggestions Received: Not needed right now.
Item 14.07	**Proceedings 14.07:** Discussion regarding approval from NBA and scope for the improvement
	All invited BoS members congratulated the University, Institute and Department for getting "A" graded from NAAC and KCG as well as for getting NBA for three departments. **Suggestion received:** Cadre ratio and student- teacher ratio along with research in department are most affected factors.
Item 14.08 14.09	**Proceedings 14.08 and 14.09:** To approve the syllabus of M Tech (Newly Introduced Programs) **Resolution** This agenda is duplicated as per agenda number 2 & 3
Item 14.10	**Proceedings 14.10:** To incorporate the revised syllabus of Mathematics and Physics in first year **Resolution**

	The syllabus is already designed and passed in the respective BoS and added to FY syllabus.
Item 14.11	**Proceedings 14.11:** To implement summer internship in 3rd semester of B Tech (Same Credit, same Marks) **Resolution** It is not possible due to D2D students.
	Other Agendas are discussed and listed in additional Items

Additional Items

Sr. No	Agenda	Discussion/Suggestions
1	Review of Exam Question Papers	Question papers of internal and university examination have been reviewed. The briefings about the continuous evaluation, freedom for pedagogy selection for faculty and execution of the practical sessions have been given to external BoS members. The quality of question papers are found satisfactory, but it is suggested to increase the weighatge on the questions that can increase the analytical and logical thinking ability of students. The question papers are as per blooms taxonomy. **Annexure –V and VIII**
2	Review of Result Analysis	The records of result analysis of both internal and university exam are maintained. The results of both the exams are generally discussed and analyzed in the department meeting as soon as the exam gets over and the necessary actions are decided. The YoY comparisons of the results are also discussed and the figures are acceptable. The efforts should be given to again improve the results at all levels. The conduction of the remedial coaching for weaker students has been appreciated by the members. **Annexure –IX**
3	Review of Placement Records	The campus placement of the student needs to be increased. More efforts are required to invite the companies for placement. The aptitude sessions organized for the students are appreciated. It is advised to keep extra technical session to prepare the students for technical skills. **Annexure –X**
4	Review of B. Tech and M. Tech Projects works	The project titles for B. Tech and M. Tech are reviewed and found satisfactory. It is suggested to give more emphasis on hardware based projects at B. Tech level. For M. Tech, the extensive use of licenses software may help the students to solve/reproduce the IEEE journal papers. Paper presentation for M. Tech students should be made compulsory.
5	Review of Feedback from Students, Identification of slow learners, Counseling activities	Review pattern for the students feedback and actions after the feedback have been explained. It is an useful component to improve the performance of teacher and T-L practices. The student counseling activities are very appreciated by all the members.
6	Approval of Examiners'	The examiners panels for B. Tech and M. Tech have been reviewed and approved. The approved examiner panel is attached in **Annexure VII.**

	Panel	
7	Admissions	As per the experts, the Electrical branch interest is not reduced, but the interest towards CE/IT branch is increased, Hence Electrical Branch has to suffer for a complete one cycle.
8.	Audit Course	Electrical students can be offered audit course from CE/IT on IoT. Also Electrical department should offer audit course on arduino. Apart from the regular teaching, by audit course, social activities and by taking parts in sports and co/extra-curricular activities, the holistic development of student will be possible.
9.	Sports, Cultural and Social activities.	The students are encouraged to take part in national and international level sports events. With social activities the bonding and trust with society and CHARUSAT will increase. At least one week cultural programme to be organized by institute.
10.	Quality of research in dissertation and PhD.	For PhD it is essential to publish at least to research papers in scopus indexed journals, hence Quality will be there in research work.
11.	Research Papers and Research funding	Each faculty must publish at least two papers in high impact factor journal. By this the CV of the faulty become strengthen, hence chances of getting grants will increase. More efforts will be put to fetch the research grants. All the faculties are aware about funding agencies.
12.	NPTEL Course	Now as pert AICTE, NPTEL Course will be considered as FDP and according to that API point given to faculty.
13.	Innovation in Pedagogy	The educational goal must be discussed by student and teacher and according to that, A common strategies for class must be made and according to individual student's knowledge, individual strategies should be explained to each student. Learning while doing is best pedagogy.
14	Quality in Education and World Class Universities	By quality consultancy work, more practical knowledge and time-on-task learning strategy accelerates the quality education and movement towards the world class universities.
15	Outcome Based Education and Road-map 2023	The outcome of each course and program must be monitored effectively. If required outcome doesn't achieve in students, more quality efforts must be made. The main focus of road-map 2013 is, placement of eligible students must be reach up to 100%. **Annexure –VI**
16.	Innovative Projects	The BoS members appreciated the department projects. The capacity of the department must be showcased to industry people.

Faculty Board Meeting:

Faculty board meeting was held at conference room, DEPSTAR College.

The inputs given by expert of electrical field are as under.

1. Right now the interest of students are towards the computer related branch, hence the number of students in the electrical or other branch are less.

2. Day by day the students in A group of 12th standards are decreasing due to lack of interest in mathematics subject. So students must be motivated to take interest in maths subject right from school level.
3. Experts gave their opinion that, each branch has its cycle depending on market scenario. So within two years, again the interest f students towards the core branch will increase.

Mr. Nilay A. Patel
Chairman
Board of Studies (EE)

HEAD OF DEPARTMENT
Dept. of Electrical Engg.
Chandubhai S. Patel Institute of Technology
At. & Po. Changa-388421., Ta. Petlad,
Dist. : Anand. (Gujarat)

14A

Annexure I: TEACHING & EXAMINATION SCHEME FOR B TECH PROGRAMME IN ELECTRICAL ENGINEERING (CBCS) Entry Year: 2016

CHAROTAR UNIVERSITY OF SCIENCE & TECHNOLOGY (CHARUSAT)											
TEACHING & EXAMINATION SCHEME FOR B TECH PROGRAMME IN ELECTRICAL ENGINEERING (CBCS) Entry Year: 2016											
Level	**Course Code**	**Course Title**	**Teaching Scheme**				**Examination Scheme**				
			Contact Hours			**Credit**	**Theory**		**Practical**		**Total**
			Theory	**Practical/Tutorial**	**Total**		**Internal**	**External**	**Internal**	**External**	
Level 1	HS101A- HS106A	A Course on Liberal Arts		2	2	2			50	50	**100**
	MA141	Engineering Mathematics I	4	1 (T)	4	4	30	70			**100**
	ME141	Engineering Graphics	2	4	6	4	30	70	50	50	**200**
	PY141	Engineering Physics	3	2	5	4	30	70	25	25	**150**
	CL141	Engineering Mechanics	4	2	6	5	30	70	25	25	**150**
	ME142	Workshop Practices	0	2	2	1			25	25	**50**
	Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra- curricular &co curricular				11						
					36	**20**					**750**
	HS 121A	English Language and Literature	1	1	2	2	25	25	25	25	**100**
	MA142	Engineering Mathematics II	4	1 (T)	4	4	30	70			**100**
	CL142	Environmental Science	2		2	2	30	70			**100**
	IT141	Fundamentals of Computer Programming	3	2	5	4	30	70	25	25	**150**
	ME143	Basics of Civil & Mechanical Engineering	4	2	6	5	30	70	25	25	**150**
	EE141	Basics of Electronics & Electrical Engineering	4	2	6	5	30	70	25	25	**150**
	Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra- curricular & co curricular				11						
					36	**22**					**750**

	HS122A/HS131A	Values and Ethics/Philosophy	2		2	2	30	70			**100**
	MA241	Engineering Mathematics III	4		4	4	30	70			**100**
	EE241	Analog and Digital Electronics	4	2	6	5	30	70	25	25	**150**
	EE242	Circuit Theory	4	2	6	5	30	70	25	25	**150**
	EE243	Electrical Measurements and Industrial Instrumentation	4	2	6	5	30	70	25	25	**150**
	XXXXX	University Elective- I	2		2	2	30-70				**100**
	Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra- curricular & co curricular				10						
					36	**23**					**750**
Level 2	HS123.01A/ HS 127.01A/ HS133A	Critical Thinking and Logic/ Communication skills 2/ Creativity, Problem Solving and Innovation	2		2	2	30-70				**100**
	EE244	Electrical Power Generation and its Economics	4		4	4	30	70			**100**
	EE245	Control Systems	4	2	6	5	30	70	25	25	**150**
	EE246	Microprocessor & Microcontrollers	4	2	6	5	30	70	25	25	**150**
	EE247	Transformers and Induction Machines	4	4	8	6	30	70	50	50	**200**
	XXXXX	University Elective- II	2		2	2	30-70				**100**
	Assignment Practices/Student counseling/Remedial classes/Library/Sports /Extra- curricular & co-curricular				8						
					36	**24**					**800**

Level 3	HS124.01A	Professional Communication		2	2	2			30	70	**100**
	EE341	Electrical Power Transmission and Distribution	4		4	4	30	70			**100**
	EE342	Synchronous and DC Machines	4	4	8	6	30	70	50	50	**200**
	EE343	Power Electronics & Drives I	4	2	6	5	30	70	25	25	**150**
	EE344	Minor Project I	0	4	4	2			50	50	**100**
	EE345	Electrical Product Survey	0	2	2	2			50	50	**100**
	EE371-EE372	Programme Elective I	4	2	6	5	30	70	25	25	**150**
	EE350	Summer Internship I	0	0	0	3			75	75	**150**
	Assignment Practices/ Student counseling/ Remedial classes/ Library/ Sports/ Extra- curricular & co curricular				4						
					36	**29**					**1050**
	HS134A	Contributor Personality Development		2	2	2			30	70	**100**
	EE346	Digital Signal Processing	3	2	5	4	30	70	25	25	**150**
	EE347	Programmable Logic Controllers and Industrial Automation	2	4	6	4	30	70	50	50	**200**
	EE348	Power Electronics & Drives II	3	2	5	4	30	70	25	25	**150**
	EE349	Fault Analysis and Switchgear	4	2	6	5	30	70	25	25	**150**
	EE360	Minor Project II	0	4	4	2			50	50	**100**
	EE376-EE377	Programme Elective II	3	2	5	4	30	70	25	25	**150**
	Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra- curricular & co curricular				3						
					36	**25**					**1000**

Level 4	EE441	Power System Operations and Control	4	2	6	5	30	70	25	25	**150**
	EE442	Power System Protection	4	2	6	5	30	70	25	25	**150**
	EE443	Electrical Machine Design	4	2	6	5	30	70	25	25	**150**
	EE444	Simulation Lab	0	4	4	2			50	50	**100**
	EE450	Summer Internship II				3			75	75	**150**
	EE471-EE473	Programme Elective III	4	2	6	5	30	70	25	25	**150**
	Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra-curricular & co curricular				8						
					36	**25**					**850**
	EE446	Commissioning and Testing of Electrical Equipment	4	2	6	5	30	70	25	25	**150**
	EE447	Modeling and Control of Renewable Energy Sources	4	2	6	5	30	70	25	25	**150**
	EE448	Major Project			18	9			250	250	**500**
	EE476-EE478	Programme Elective IV	4	2	6	5	30	70	25	25	**150**
					36	**27**	**90**	**210**	**325**	**325**	**950**

CHAROTAR UNIVERSITY OF SCIENCE & TECHNOLOGY (CHARUSAT)											
		Hours				Credits	Marks				
			Theory	Practical	Total						
					288	192					6900

LIST OF ELECTIVES FOR B TECH PROGRAMME IN ELECTRICAL ENGINEERING

University Electives for Level 2

University Elective 1		University Elective 2	
EE281	Electrical Engineering Materials	**EE282**	Electrical Power Utilisation and Traction

Electives for Level 3

	PROGRAMME ELECTIVE 1	PROGRAMME ELECTIVE 2	
EE371	Advanced Microcontrollers	**EE376**	Special Electrical Machines and Applications
EE372	VLSI Technology & Design	**EE377**	Embedded Systems

Electives for Level 4

	PROGRAMME ELECTIVE 3	PROGRAMME ELECTIVE 4	
EE471	Power Electronics Applications in Power System	**EE476**	Advances in Power System
EE472	Communication Engineering	**EE477**	Internet of Things
EE473	High Voltage Engineering	**EE478**	Energy Conservation and Management

University Elective I & II:

(Will be available in a Common Slot)

Occupational Health and Safety, IPR, Regulatory Affairs, Contract Management,

Energy Management, Research Methodology, Entrepreneurship, Project Management, First AID and Life Support

Risk Management, Disaster Management, Scientific Instrumentation & Measurement, Operation Research,
Business Environment, Quality Assurance, Computer Programming, Numerical Analysis, Web Designing, Cyber Security etc

M&V Patel Department of Electrical Engineering
Faculty of Technology & Engineering, CHARUSAT
14th Board of Studies Meeting

Date : July 28, 2018, Saturday
Time : 10:00 am onwards
Venue: Room No: 102, HOD (EE), CSPIT, CHARUSAT Campus

1	Mr. Nilay Patel	**Chairman;**	Assistant Professor & Head, Department of Electrical Engineering,	
2	Dr. Kartik Pandya	**Member;**	Professor, Department of Electrical Engineering,	
3	Mr. Maulik Shah	**Member;**	Assistant Professor Department of Electrical Engineering,	
4	Mr. Mhir Bhatt	**Member;**	Assistant Professor Department of Electrical Engineering,	
5	Mr. Jivanadhar Joshi	**Member;**	Assistant Professor Department of Electrical Engineering,	
6	Mr. Jigar Sarda	**Member;**	Assistant Professor Department of Electrical Engineering,	
7	Mr. Pratik Mochi	**Member;**	Assistant Professor, Department of Electrical Engineering,	
8	Dr. Sanjay R. Joshi	**External Member;**	Principal Government Engineering College, Valsad	
9	Dr. Bhavik Suthar	**External Member;**	~~Principal~~ Professor in EE Government Engineering College, bhuj	
10	Dr. Santosh Vora	**External Member;**	Professor Department of Electrical Engineering Nirma University, Ahmedabad	
11	Mr. Sanjay Mahagaokar	**External Member;**	Dy General Manager Engineering and Technology, Rotomag Power Drives. Napa Talpad.	
12	Prof. Prakash K. Shah	**External Member;**	Professor Department of Electrical Engineering LDRP, Ahmedabad	

Minutes –16th Board of Studies Meeting
M&V Patel Department of Electrical Engineering
Faculty of Technology & Engineering, CHARUSAT

Date : July 04, 2020, Saturday
Time : 10:00 am onwards
Venue: Online (Google Meet Platform)

The 16th meeting of Board of Studies, M&V Patel Department of Electrical Engineering, Faculty of Technology and Engineering (FTE), Charotar University of Science and Technology (CHARUSAT) was held on 04/07/2020 at 10:00 am. On online platform. Following members were present:

1	Dr. Nilay Patel	**Chairman;**	Assistant Professor & Head, Department of Electrical Engineering,
2	Dr. Kartik Pandya	**Member;**	Professor, Department of Electrical Engineering,
3	Mr. Maulik Shah	**Member;**	Assistant Professor Department of Electrical Engineering,
4	Mr. Mhir Bhatt	**Member;**	Assistant Professor Department of Electrical Engineering,
5	Mr. Jivanadhar Joshi	**Member;**	Assistant Professor, Department of Electrical Engineering,
6	Mr. Soaib Saiyad	**Member;**	Assistant Professor, Department of Electrical Engineering,
7	Mr. Jigar S Sarda	**Invitee Member;**	Assistant Professor, Department of Electrical Engineering,
8	Dr. Praghnesh Bhatt	**External Member;**	Associate Professor, SoT, PDPU, Gandhinagar
9	Dr. Naran Pindoriya	**External Member;**	Associate Professor, IIT, Gandhinagar.
10	Dr. Vijay K Shah	**External Member;**	Vice President, Senior Principal Engineer-Electrification Business. ABB India Ltd, Vadodara
11	Dr. Santosh Vora	**External Member;**	Professor Department of Electrical Engineering Nirma University, Ahmedabad

Initiation:

Dr. Nilay Patel welcomed all the members of Board of Studies. The minutes of the 15th Board of Studies meeting held on August 31, 2019 was summarized.

Agenda Proceedings & Resolutions: -

Item 16.01	To review and approve the Teaching & Examination scheme for B. Tech. and detailed syllabus of 5th and 6th semesters (Third Year) B. Tech. (CBCS) for Electrical Engineering, applicable for 2019-20 (Admission) Batch. (Total 176 credits)
	Proceedings 16.01: The teaching and examination scheme for all the semesters of B. Tech. CBCS courses effective from July- 2019 under Choice Based Credit System (CBCS) is prepared and reviewed. Following Revisions in B Tech programme are proposed. ▪ In 2nd year, there is no change in teaching and evaluation scheme decided in last BoS for AY2020-21, except HSS and Mathematics courses. ▪ Courses for B Tach Third year syllabus (July 2019 Entry) are discussed and finalized. ▪ In 2nd year, following one additional university elective courses are introduced for B Tech effective from AY2020-21. CL283: SDG Handprint Laboratory (For UG Semester-3) **Resolution 16.01:** The suggestions received from BoS members are incorporated and T & E Scheme for B Tech July 2019 Intake is approved and is attached in **Annexure – I**
Item 16.02	To review and approve Teaching and Examination scheme and syllabus for Final Year B. Tech program for 2018-2019 (Admission) Batch under Choice Based Credit System (CBCS).
	Proceedings 16.02: The teaching and examination scheme of Final Year B. Tech program for 2018-2019 under Choice Based Credit System (CBCS) is reviewed. **Suggestions Received:** ▪ No need to revise it. **Resolution 16.02:** Whatever the T & E scheme was applied for AY 2019-2020 for final year, the same scheme will be applicable for AY 2021-22. (The same scheme is applicable for AY 2020-21 Final year students, except HSS Courses.) The T & E scheme for Final Year B. Tech. (2018 entry students) is attached in **Annexure – II**
Item 16.03	**For Discussion**: To review and approve T&E scheme and syllabus for FY, SY and TY of B. Tech program for ACY 2020-2021 under Choice Based Credit System (CBCS). Particularly for physics,

	mathematics and HSS department.
	Proceedings 16.03: T&E scheme and syllabus for FY, SY and TY of B. Tech program for ACY 2020-2021 under Choice Based Credit System (CBCS) are reviewed. Particularly for physics, mathematics and HSS department. ▪ In 1st year, there is no change in teaching and evaluation scheme for AY2020-21, except HSS, Physics and Environmental Science courses • In first year B Tech, Humanities (HSS), Physics and environmental Science courses are revised in introduced with effective from AY 2020-21 1. HS101.02A Communicative English (Sem-1) 2. HS201.02A-HS210.02A (Courses on liberal Arts) (Sem-2) 3. CL144B Environmental Science course introduce in place of CL142.01 (will be offered in Sem-1) 4. PY142 Engineering Physics-I course introduce. (Sem-1) 5. PY143 Engineering Physics-II course introduce. (Sem-2) • In second year B Tech, Mathematics course is revised and replaced with effective from AY 2020-21 MA252 Advanced Engineering Mathematics (Sem-3) • In second year B Tech, Humanities (HSS) courses are revised in introduced with effective from AY 2020-21 1. HS121.02A Creativity, Problem Solving and Innovation (Sem-3) 2. HS111.02A Human Values and Professional Ethics (Sem-4) • In third Year B Tech, Humanities (HSS) courses are revised in introduced with effective from AY 2020-21 1. HS131.02A Communication and Soft Skills (Sem-5) 2. HS132.02A Contributory Personality Development (Sem-6) **Resolution 16.03:** The suggestions received from BoS members are incorporated and detailed syllabi / T & E Scheme for B Tech is as per **Annexure I** (July 2019 Admission/Entry), **Annexure III** (July 2020 Admission/Entry) and **Annexure II** (July 2018 Admission/Entry).
Item 16.04	To review and approve T&E scheme for all the semesters of M. Tech. (Electrical Power System) CBCS courses. Approval of online or off-campus B Tech & M Tech. Classes.

	Proceedings 16.04: The teaching and examination scheme for all the semesters of M. Tech. (Electrical Power System) CBCS courses effective from July- 2019 under Choice Based Credit System (CBCS) is reviewed. **Suggestions Received:** ▪ As per last academic council meeting, first year university elective course is dropped. **Resolution 16.04:** The suggestions received from BoS members are incorporated in T & E Scheme for M. Tech. (Electrical Power System) and T & E Scheme of M Tech (EPS) July 2020 Intake is approved and attached in **Annexure – IV** The classes of B Tech and M Tech can be taken online or off-campus mode.
Item 16.05	Analysis and discussion on the semester end results of the students and steps taken for the remedial actions
	Proceedings 16.05: The records of result analysis of both internal and university exams are maintained. The results of both the exams are generally discussed and analysed in the department meeting as soon as the exam gets over and the necessary actions are decided. The YoY comparisons of the results are also discussed and the figures are acceptable. The efforts should be given to again improve the results at all levels. The conduction of the remedial coaching for weaker students has been appreciated by the members. **Annexure –V**
Item 16.06	Analysis of campus placement and discussion of related activities to enhance them further. (Annexure-VI)
	Proceedings 16.06: The campus placement of the student needs to be increased. More efforts are required to invite the companies for placement. The aptitude sessions organized for the students are appreciated. It is advised to keep extra technical session to prepare the students for technical skills. **Annexure –VI**
Item 16.07	To add new University Elective and revise existing University Electives from Electrical Engineering Department for UG Program.
	Proceedings 16.07: Review the title of the UE courses offered by Electrical Engineering department and discussion on new UE course from EE department under Choice Based Credit System (CBCS). (Applicable from AY 2021-22) **Suggestions Received:** ▪ **EE284 Python Programming** replaces EE283 Python for Electrical Engineering course. (UE Sem-3)

	▪ **EE287 MATLAB Programming** replaces EE286 Computer Programming for Electrical Engineering. (UE Sem-4) ▪ **EE288 Maintenance of Household Apparatus** is introduced as new UE course from Electrical Engineering Department in Sem 4. **Resolution 16.07:** The suggestions received from BoS members are incorporated in T & E Scheme for B. Tech. (July 2020 Admission Batch, Effective from AY 2021-22) and is attached in **Annexure – III**
Item 16.08	To review and approve newly added and revised Elective courses of third year and final year for 2019-20 Admission batch under Choice Based Credit System (CBCS). Here main task to streamline the courses related to AI, Smart grid, machine learning etc.
	Proceedings 16.08: The syllabus for TY and Final Year of B. Tech. Elective courses effective from July- 2019 Admission batch under Choice Based Credit System (CBCS) is prepared and reviewed. Following Suggestions on Elective courses in B Tech programme are proposed. ▪ In 3rd and 4th year, comprehensive and contemporary elective courses are introduced for providing more choices to the students. ▪ The following courses that are in line with the current industry requirement and skill based are included in 3rd level and 4th level of curriculum. The listing is as under. The major topics of courses are discussed but detailed syllabus for 4th level will be prepared in next stage. ▪ The newly introduced electives are in track/stream of electives offered in previous semesters and hence students following track suggested by department will be able to get detailed knowledge of the selected stream. The may be given minor in following streams. ➢ **Python for Data Analytics – Machine Learning Fundamentals – Deep Learning Applications and AI** falls under one stream of electives. (Offered in 5th, 6th and 7th semester respectively.) ➢ Optimization Techniques ➢ Smart Grid Technology, IoT and Industry 4.0 ➢ Electric Vehicle Technologies The specialized courses taught from specialized faculties. Also, hands on practice needed for students. **Resolution 16.08:** The suggestions received from BoS members are incorporated and T & E Scheme for B. Tech. July 2019 and July 2020 Intake is approved and is attached in **Annexure – I & III**

Item 16.09

Preparation, Discussion, and approval of the Elective Courses (University, Institute, and Program Electives)

Proceedings 16.09:

T&E scheme and syllabus for First Year M Tech (EE) program for ACY 2020-2021 under Choice Based Credit System (CBCS) are reviewed. Particularly for HSS department.

In first year M Tech, Humanities (HSS) courses are revised in introduced with effective from AY 2020-21

1. HS141.02A Foreign Languages (French) (Sem-1)
2. HS105.02A Academic Speaking and Presentation Skills (Sem-1)
3. HS106.02A Academic Writing (Sem-2)

Resolution 16.09:

The suggestions received from BoS members are incorporated in T & E Scheme for M. Tech. (Electrical Power System). It is approved and is attached in **Annexure – IV**

Item 16.10

For Discussion:

To approve the PhD Synopsis of research scholar

Proceedings 16.10:

Department of Electrical Engineering, Faculty of Technology & Engineering has received following synopsis of research scholar during 2019-20.

Sr. No.	Research Scholar	Research Topic
1	Dharmesh Dabhi (16DREE007)	Developing Metaheuristic Optimization Techniques For Optimal Scheduling of Distributed Energy Resources on Smart Grid Environment.

Synopsis and panel referees of research scholars are placed before the BoS members.

Resolution- 16.10

Board of Studies members approved the synopsis & panel referees of Research Scholar(s) for further process.

Item 16.11

Proceedings 16.11:

Giving information about seat reduction in B. Tech. (Electrical) and closure of M. Tech. (PE) Programme.

From AY 2020-21, B Tech Electrical Engineering seats reduced to 60.
From AY 2020-21 M Tech (Power Electronics) program is closed.

Item 16.12

Proceedings 16.12:

Discussion on minor specialization in the EMERGING AREAS viz., Artificial Intelligence (AI), Internet of Things (IoT), Block chain, Robotics, Quantum Computing, Data Sciences, Machine Learning etc. in B Tech Electrical Engineering was done.

	All the members of BoS appreciated this move towards recent era skill needed.
	Resolution BoS chairman is given power to decide the additional 18 to 20 credit course as per latest trends and can be implemented from 4th semester of AY2020-21.

Additional Items

Sr. No	Agenda	Discussion/Suggestions
1	Review of Exam Question Papers	Question papers of internal and university examination have been reviewed. The briefings about the continuous evaluation, freedom for pedagogy selection for faculty and execution of the practical sessions have been given to external BoS members. The quality of question papers are found satisfactory, but it is suggested to increase the weightage on the questions that can increase the analytical and logical thinking ability of students. The question papers are as per blooms taxonomy. **Annexure –VII and VIII**
2	Discussion on effective implementation of Outcome Based Education (OBE) and ICT based Teaching-Learning	**Suggestions Received:** ▪ All faculty members must aware about each criteria defined by NBA and NAAC. ▪ The proper understanding of mapping of POs, PEOs, COs and their assessment tools is required. ▪ Faculty contribution should be increased for publication, funded projects and consultancy. ▪ The usage of open course from NPTEL, MIT and BISAC must be increased. Google classroom should be used as ICT platform.
3	Review Research Activities, Projects, Consultancy etc.	Every faculty must try to bring funded research projects and consultancy. Relation with industry must be made very strong Explore the new dimensions about research
4	Review of B. Tech and M. Tech Projects works	The project titles for B. Tech and M. Tech are reviewed and found satisfactory. It is suggested to give more emphasis on hardware based projects at B. Tech level. For M. Tech, the extensive use of licenses software may help the students to solve/reproduce the IEEE journal papers. Paper presentation for M. Tech students should be made compulsory.
5	Review of Feedback from Students, Identification of slow learners, Counseling activities	Review pattern for the students' feedback and actions after the feedback have been explained. It is a useful component to improve the performance of teacher and T-L practices. The student counseling activities are very appreciated by all the members.
6	Approval of Examiners' Panel	The examiners panels for B. Tech and M. Tech have been reviewed and approved. The approved examiner panel is attached in **Annexure IX**

7	Admissions	As per the experts, the Electrical branch interest is not reduced, but the interest towards CE/IT branch is increased, Hence Electrical Branch has to suffer for a complete one cycle.
8.	Audit Course	Electrical students can be offered audit course from CE/IT on IoT. Also Electrical department should offer audit course on Arduino. Apart from the regular teaching, by audit course, social activities and by taking parts in sports and co/extra-curricular activities, the holistic development of student will be possible.
9.	Sports, Cultural and Social activities.	The students are encouraged to take part in national and international level sports events. With social activities, the bonding and trust with society and CHARUSAT will increase. At least one week cultural programme to be organized by institute.
10.	Quality of research in dissertation and PhD. Panel of Ph D Supervisors	For PhD it is essential to publish at least to research papers in Scopus indexed journals, hence Quality will be there in research work. For PhD mentor or co-guide can be invited for research scholars of the department.
11.	Research publications, proposals and grants	Each faculty must publish at least two papers in high impact factor journal. By this the CV of the faulty become strengthen, hence chances of getting grants will increase. More efforts will be put to fetch the research grants. All the faculties are aware about funding agencies.
12.	NPTEL Course	Now as pert AICTE, NPTEL Course will be considered as FDP and according to that API point given to faculty.
13.	Innovation in Pedagogy	The educational goal must be discussed by student and teacher and according to that, A common strategies for class must be made and according to individual student's knowledge, individual strategies should be explained to each student. Learning while doing is best pedagogy.
14	Quality in Education and World Class Universities	By quality consultancy work, more practical knowledge and time-on-task learning strategy accelerates the quality education and movement towards the world class universities.
15	Outcome Based Education and Road-map 2023	The outcome of each course and program must be monitored effectively. If required outcome doesn't achieve in students, more quality efforts must be made. The main focus of road-map 2023 is, placement of eligible students must be reach up to 100%. **Annexure –X**
16.	Innovative Projects	The BoS members appreciated the department projects. The capacity of the department must be showcased to industry people.

Faculty Board Meeting:

Faculty board meeting was held at online platform of Google Meet at 12.00 noon.

The inputs given by expert of electrical field are as under.

1. Right now the interest of students is towards the computer related branch, hence the number of students in the electrical or other branch are less.

2. Dr. Praghnesh bhatt and Dr. Santosh Vora, FB Member, appreciated the course covered in curriculum. They suggested to introduce the students clubs at Electrical Engineering Department.
3. Dr. Santosh Vora insist on the inter institute collaboration.
4. Experts gave their opinion that, each branch has its cycle depending on market scenario. So within two years, again the interest of students towards the core branch will increase.
5. BoS of the respective branch discussed and agreed upon a common point to offer a minor degree in an emerging area as per the guideline of AICTE.
6. Additional 18 to 20 credit courses offered along with B. Tech. curriculum to earn a minor degree.
7. Concern board authorized the chairman of BoS of Civil Engineering, Mechanical Engineering, and Electrical Engineering to initiate the action related to offering minor specialization in emerging areas and subsequently inform the board after the finalization of course structure and syllabi.

Dr. Nilay A. Patel
Chairman
Board of Studies (EE)

HEAD OF DEPARTMENT
Dept. of Electrical Engg.
Chandubhai S. Patel Institute of Technology
At. & Po. Changa-388421., Ta. Petlad,
Dist. : Anand. (Gujarat)

CHAROTAR UNIVERSITY OF SCIENCE & TECHNOLOGY (CHARUSAT)

16.01 Annexure I TEACHING & EXAMINATION SCHEME FOR B TECH PROGRAMME IN ELECTRICAL ENGINEERING (CBCS) Entry Year: 2019

Level	Course Code	Course Title	Teaching Scheme					Examination Scheme				
			Contact Hours				Credit	Theory		Practical		Total
			Theory	Practical	Tutorial	Total		Internal	External	Internal	External	
Level 1	HS101.01 A-HS110.01A	A Course on Liberal Arts (Elective I)		2	0	2	2			30	70	**100**
	MA143	Engineering Mathematics I	4	0	1	5	4	30	70	0	0	**100**
	ME146	Engineering Graphics	2	2	1	5	3	30	70	25	25	**150**
	PY141.01	Engineering Physics	3	2	0	5	4	30	70	25	25	**150**
	CL143	Engineering Mechanics	3	2	1	6	4	30	70	25	25	**150**
	ME142	Workshop Practices	0	2		2	1			25	25	**50**
		Assignment Practices/Student counselling/Remedial classes/Library/Sports/Extra curricular & cocurricular				11						
			12	**10**		**36**	**18**	**120**	**280**	**130**	**170**	**700**
	HS126.01 A	Communication Skills -1	2		0	2	2	30	70			**100**
	CL142.01	Environmental Science		2	0	2	2			30	70	**100**
	MA144	Engineering Mathematics II	4	0	1	5	4	30	70			**100**
	IT143	Fundamentals of Computer Programming	2	2	0	4	3	30	70	25	25	**150**
	ME147	Basics of Civil & Mech Engineering	3	2	0	5	4	30	70	25	25	**150**
	EE145	Basics of Electronics & Electrical Engineering	3	2	0	5	4	30	70	25	25	**150**
		Assignment Practices/Student counselling/Remedial classes/Library/Sports/Extra curricular & cocurricular				13						
			14	**8**		**36**	**19**	**150**	**350**	**105**	**145**	**750**

CHAROTAR UNIVERSITY OF SCIENCE & TECHNOLOGY (CHARUSAT)

16.01 Annexure I TEACHING & EXAMINATION SCHEME FOR B TECH PROGRAMME IN ELECTRICAL ENGINEERING (CBCS) Entry Year: 2019

Level	Course Code	Course Title	Teaching Scheme					Examination Scheme				
			Contact Hours				Credit	Theory		Practical		Total
			Theory	Practical	Tutorial	Total		Internal	External	Internal	External	
Level 2	HS121.02A	Creativity, Problem Solving and Innovation		2		2	2	0	0	30	70	**100**
	MA252	Advanced Engineering Mathemathics	4	0	0	4	4	30	70			**100**
	EE251	Analog and Digital Electronics	3	2	0	5	4	30	70	25	25	**150**
	EE252	Circuit Theory	3	2	0	5	4	30	70	25	25	**150**
	EE243	Electrical Measurements and Industrial Instrumentation	4	2	0	6	5	30	70	25	25	**150**
	XXXXX	University Elective- I		2	0	2	2			30	70	**100**
		Assignment Practices/Student counselling/Remedial classes/Library/Sports/Extra curricular &cocurricular				12						
			14	**10**	**0**	**36**	**21**	**120**	**280**	**135**	**215**	**750**
	HS111.02A	Human Values and professional Ethics		2	0	2	2			30	70	**100**
	EE254	Electrical Power Generation and its Economics	3	0	0	3	3	30	70			**100**
	EE255	Control Systems	3	2	0	5	4	30	70	25	25	**150**
	EE246	Microprocessor & Microcontrollers	4	2	0	6	5	30	70	25	25	**150**
	EE247	Transformers and Induction Machines	4	4	0	8	6	30	70	50	50	**200**
	XXXXX	University Elective- II		2	0	2	2			30	70	**100**
		Assignment Practices/Student counselling/Remedial classes/Library/Sports/Extra curricular & cocurricular				10						
			14	**12**		**36**	**22**	**120**	**280**	**160**	**240**	**800**

CHAROTAR UNIVERSITY OF SCIENCE & TECHNOLOGY (CHARUSAT)

16.01 Annexure I TEACHING & EXAMINATION SCHEME FOR B TECH PROGRAMME IN ELECTRICAL ENGINEERING (CBCS) Entry Year: 2019

Level	Course Code	Course Title	Teaching Scheme					Examination Scheme				
			Contact Hours				Credit	Theory		Practical		Total
			Theory	Practical	Tutorial	Total		Internal	External	Internal	External	
Level 3	HS131.02A	Communication and Soft Skills		2	0	2	2			30	70	**100**
	EE351	Electrical Power Transmission and Distribution	3	0	0	3	3	30	70	0	0	**100**
	EE342	Synchronous and DC Machines	4	4	0	8	6	30	70	50	50	**200**
	EE353	Power Electronics & Drives I	3	2	0	5	4	30	70	25	25	**150**
	EE344	Minor Project I	0	4	0	4	2			50	50	**100**
	EE345	Electrical Product Survey	0	2	0	2	2			50	50	**100**
	EE371-EE375	Programme Elective I	4	2	0	6	5	30	70	25	25	**150**
	EE350	Summer Internship I	0	0	0	0	3			75	75	**150**
		Assignment Practices/Student counselling/Remedial classes/Library/Sports/Extra curricular & cocurricular				6						
			14	**16**	**0**	**36**	**27**	**120**	**280**	**305**	**345**	**1050**
	HS132.02A	Contributory Personality Development		2	0	2	2			30	70	**100**
	EE346	Digital Signal Processing	3	2	0	5	4	30	70	25	25	**150**
	EE347	Programmable Logic Controllers and Industrial Automation	2	4	0	6	4	30	70	50	50	**200**
	EE348	Power Electronics & Drives II	3	2	0	5	4	30	70	25	25	**150**
	EE349	Fault Analysis and Switchgear	4	2	0	6	5	30	70	25	25	**150**
	EE360	Minor Project II	0	4	0	4	2	0	0	50	50	**100**
	EE376-EE381	Programme Elective II	3	2	0	5	4	30	70	25	25	**150**
		Assignment Practices/Student counselling/Remedial classes/Library/Sports/Extra curricular & cocurricular				3						
			15	**18**		**36**	**25**	**150**	**350**	**230**	**270**	**1000**

CHAROTAR UNIVERSITY OF SCIENCE & TECHNOLOGY (CHARUSAT)												
16.01 Annexure I TEACHING & EXAMINATION SCHEME FOR B TECH PROGRAMME IN ELECTRICAL ENGINEERING (CBCS) Entry Year: 2019												
Level	**Course Code**	**Course Title**	**Teaching Scheme**					**Examination Scheme**				
			Contact Hours				**Credit**	**Theory**		**Practical**		**Total**
			Theory	**Practical**	**Tutorial**	**Total**		**Internal**	**External**	**Internal**	**External**	
Level 4	EE441	Power System Operations and Control	4	2	0	6	5	30	70	25	25	**150**
	EE442	Power System Protection	4	2	0	6	5	30	70	25	25	**150**
	EE443	Electrical Machine Design	4	2	0	6	5	30	70	25	25	**150**
	EE444	Simulation Lab	0	4	0	4	2			50	50	**100**
	EE450	Summer Internship II			0		3			**75**	**75**	**150**
	EE481/EE482/EE483/EE446.01/EE447.01/EE476.01	Programme Elective III	3	2	0	5	4	30	70	25	25	**150**
		Assignment Practices/Student counselling/Remedial classes/Library/Sports/Extra curricular &cocurricular				9						
			15	**12**	**0**	**36**	**24**	**120**	**280**	**225**	**225**	**850**
	EE458	Major Project	**0**	**36**	**0**	**36**	**20**			**400**	**400**	**800**

CHAROTAR UNIVERSITY OF SCIENCE & TECHNOLOGY (CHARUSAT)

16.01 Annexure I TEACHING & EXAMINATION SCHEME FOR B TECH PROGRAMME IN ELECTRICAL ENGINEERING (CBCS) Entry Year: 2019

Level	Course Code	Course Title	Teaching Scheme					Examination Scheme				
			Contact Hours				Credit	Theory		Practical		Total
			Theory	Practical	Tutorial	Total		Internal	External	Internal	External	
CHAROTAR UNIVERSITY OF SCIENCE & TECHNOLOGY (CHARUSAT)												
		Hours					Credits	Marks				
		Total Teaching Hrs	Theory	Practical		Total						
		0	98	122		288	176	900	2100	1690	2010	6700

LIST OF ELECTIVES FOR B TECH PROGRAMME IN ELECTRICAL ENGINEERING

University Electives for Level 2

	Univestity Elective 1		Univestity Elective 2
EE283	Python for Electrical Engineering	EE286	Computer Programming for Electrical Engineering

Electives for Level 3

	PROGRAMME ELECTIVE 1 (4+2)		PROGRAMME ELECTIVE 2 (3+2)
EE371	Advanced Microcontrollers	EE376	Special Electrical Machines and Applications
EE372	VLSI Technology and Design	EE377	Embedded Systems
EE373	Optimization Techniques	EE378	Power Electronics Applications in Power System
EE374	Distributed Generation and Microgrid	EE379	High Voltage Engineering
EE375	Energy Conservation, Audit and Management	EE380	Internet of Things
		EE381	Hybrid and Electric Vehicles

Electives for Level 4

	PROGRAMME ELECTIVE 3 (3+2)
EE481	Industry 4.0
EE482	Smart Grid Technologies and Applications
EE483	Communication Engineering
EE446.01	Commissioning and Testing of Electrical Equipments
EE447.01	Modeling and Control of Renewable Energy Sources
EE476.01	Advances in Power System

CHARUSAT
CHAROTAR UNIVERSITY OF SCIENCE AND TECHNOLOGY

Head Electrical CHARUSAT <hod.ee@charusat.ac.in>

Approval of MoM of BoS

9 messages

Head Electrical CHARUSAT <hod.ee@charusat.ac.in> Wed, Jul 8, 2020 at 3:04 PM
To: Praghnesh.Bhatt@sot.pdpu.ac.in, Naran Pindoriya <naran@iitgn.ac.in>, Vijay Shah <vijay.shah@in.abb.com>, Prof Santosh Vora <santosh.vora@nirmauni.ac.in>

Respected sir,
Herewith I am sending you the Minutes of BoS meeting held on 4th July 2020.
You are requested to approve the same.
Regards,

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Dr. Nilaykumar A. Patel
Assistant professor & Head,
Electrical Engineering Dept.
Chandubhai S. Patel Institute of Technology,
CHARUSAT,
Changa. 388421
Ta: Petlad.
Phone:02697 265041

My Web Page: https://sites.google.com/charusat.ac.in/nilaypatel/home

Minutes 16th BOS Meeting_04_07_2020.zip
469K

Praghnesh Bhatt <Praghnesh.Bhatt@sot.pdpu.ac.in> Thu, Jul 9, 2020 at 1:25 PM
To: Head Electrical CHARUSAT <hod.ee@charusat.ac.in>

Dear Sir

The MoM for BoS is approved from my end.

Regards

Dr Praghnesh Bhatt
Associate Professor & Head
Department of Electrical Engineering
School of Technology, PDPU
Ext: 079-2327-5664
Mo: +91-7567513461/+91-9427339896
https://scholar.google.com/citations?user=KpSDpKAAAAAJ&hl=en&oi=sra
https://orcid.org/0000-0002-0262-9991
https://www.scopus.com/authid/detail.uri?authorId=35589405600
https://app.webofknowledge.com/author/#/record/2378176

From: Head Electrical CHARUSAT [hod.ee@charusat.ac.in]
Sent: Wednesday, July 08, 2020 3:04 PM
To: Praghnesh Bhatt; Naran Pindoriya; Vijay Shah; Prof Santosh Vora
Subject: Approval of MoM of BoS

[Quoted text hidden]

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Vijay Shah <vijay.shah@in.abb.com> Thu, Jul 9, 2020 at 2:53 PM
To: Head Electrical CHARUSAT <hod.ee@charusat.ac.in>

Dear Prof. Patel

MOM is approved from my side. Do you want any page to be signed -scanned and sent over mail or this approval itself is ok ?

Thanks and best regards

Vijay

From: Head Electrical CHARUSAT <hod.ee@charusat.ac.in>
Sent: Wednesday, July 8, 2020 3:05 PM
To: Praghnesh.Bhatt@sot.pdpu.ac.in; Naran Pindoriya <naran@iitgn.ac.in>; Vijay Shah <vijay.shah@in.abb.com>; Prof Santosh Vora <santosh.vora@nirmauni.ac.in>
Subject: Approval of MoM of BoS

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Prof Santosh Vora <santosh.vora@nirmauni.ac.in> Thu, Jul 9, 2020 at 4:49 PM
To: Head Electrical CHARUSAT <hod.ee@charusat.ac.in>
Cc: Praghnesh Bhatt <Praghnesh.Bhatt@sot.pdpu.ac.in>, Naran Pindoriya <naran@iitgn.ac.in>, Vijay Shah <vijay.shah@in.abb.com>

Dear Sir,

Thanks for the email. Please consider the BoS meeting minutes approved.

Regards,
Dr. S. C. Vora

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> [Quoted text hidden]
> [Quoted text hidden]

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Head Electrical CHARUSAT <hod.ee@charusat.ac.in> Sat, Feb 20, 2021 at 9:43 AM
To: Praghnesh.Bhatt@sot.pdpu.ac.in, Naran Pindoriya <naran@iitgn.ac.in>, Vijay Shah <vijay.shah@in.abb.com>, Prof Santosh Vora <santosh.vora@nirmauni.ac.in>, darshan.shukla@larsentoubro.com

Dear Sir,
As per the agenda Item and resolution 16.12 of BoS16, Our department has decided to offer two minor specialization to Electrical Engineering students.
1. Minor specialization in "Machine Learning and Artificial Intelligence".

2. Minor specialization in "Electrical Vehicle Systems".
The students can opt any of two. Taking minor specialization is not mandatory for students.
The minor specialization in "Electrical Vehicle Systems" will be offered from AY2021-22
The T&E scheme and 4th sem course of "Machine Learning and AI" is attached here for your reference and feedback. This course is offered from AY2020-21.

Regards,
[Quoted text hidden]

Dr. Nilaykumar A. Patel
Associate professor & Head,
[Quoted text hidden]

2 attachments

Teaching scheme B. Tech. Electrical Specialization AI ML 2020-21.pdf
13K

Python Programming Skills_Semester_4.pdf
554K

DARSHAN SHUKLA <DARSHAN.SHUKLA@larsentoubro.com> Sat, Feb 20, 2021 at 11:55 AM
To: "Praghnesh.Bhatt@sot.pdpu.ac.in" <Praghnesh.Bhatt@sot.pdpu.ac.in>, Naran Pindoriya <naran@iitgn.ac.in>, Vijay Shah <vijay.shah@in.abb.com>, Prof Santosh Vora <santosh.vora@nirmauni.ac.in>, Head Electrical CHARUSAT <hod.ee@charusat.ac.in>

Approved.

Together we win

From: Head Electrical CHARUSAT <hod.ee@charusat.ac.in>
Sent: Saturday, February 20, 2021 9:43:37 AM
To: Praghnesh.Bhatt@sot.pdpu.ac.in <Praghnesh.Bhatt@sot.pdpu.ac.in>; Naran Pindoriya <naran@iitgn.ac.in>; Vijay Shah <vijay.shah@in.abb.com>; Prof Santosh Vora <santosh.vora@nirmauni.ac.in>; DARSHAN SHUKLA <DARSHAN.SHUKLA@larsentoubro.com>
Subject: Re: Approval of MoM of BoS

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Vijay Shah <vijay.shah@in.abb.com> Sat, Feb 20, 2021 at 1:44 PM
To: Head Electrical CHARUSAT <hod.ee@charusat.ac.in>, "Praghnesh.Bhatt@sot.pdpu.ac.in" <Praghnesh.Bhatt@sot.pdpu.ac.in>, Naran Pindoriya <naran@iitgn.ac.in>, Prof Santosh Vora <santosh.vora@nirmauni.ac.in>, "darshan.shukla@larsentoubro.com" <darshan.shukla@larsentoubro.com>

Dear All,

If this needs approval from BOS, then yes from my side approved.

Best regards

Vijay

From: Head Electrical CHARUSAT <hod.ee@charusat.ac.in>
Sent: Saturday, February 20, 2021 9:44 AM
To: Praghnesh.Bhatt@sot.pdpu.ac.in; Naran Pindoriya <naran@iitgn.ac.in>; Vijay Shah <vijay.shah@in.abb.com>; Prof Santosh Vora <santosh.vora@nirmauni.ac.in>; darshan.shukla@larsentoubro.com
Subject: Re: Approval of MoM of BoS

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Praghnesh Bhatt <Praghnesh.Bhatt@sot.pdpu.ac.in> Sat, Feb 20, 2021 at 1:59 PM
To: Head Electrical CHARUSAT <hod.ee@charusat.ac.in>
Cc: Naran Pindoriya <naran@iitgn.ac.in>, Vijay Shah <vijay.shah@in.abb.com>, Prof Santosh Vora <santosh.vora@nirmauni.ac.in>, "darshan.shukla@larsentoubro.com" <darshan.shukla@larsentoubro.com>

Dear Sir

You may proceed further in the matter.

Regards

Dr Praghnesh Bhatt
Associate Professor & Head
Department of Electrical Engineering
School of Technology, PDPU
Ext: 079-2327-5664
Mo: +91-7567513461/+91-9427339896
https://scholar.google.com/citations?user=KpSDpKAAAAAJ&hl=en&oi=sra
https://orcid.org/0000-0002-0262-9991
https://www.scopus.com/authid/detail.uri?authorId=35589405600
https://app.webofknowledge.com/author/#/record/2378176

From: Head Electrical CHARUSAT [hod.ee@charusat.ac.in]
Sent: Saturday, February 20, 2021 9:43 AM
To: Praghnesh Bhatt; Naran Pindoriya; Vijay Shah; Prof Santosh Vora; darshan.shukla@larsentoubro.com
Subject: Re: Approval of MoM of BoS

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[Quoted text hidden]

Prof Santosh Vora <santosh.vora@nirmauni.ac.in> Sat, Feb 20, 2021 at 2:07 PM
To: Head Electrical CHARUSAT <hod.ee@charusat.ac.in>
Cc: Praghnesh Bhatt <Praghnesh.Bhatt@sot.pdpu.ac.in>, Naran Pindoriya <naran@iitgn.ac.in>, Vijay Shah <vijay.shah@in.abb.com>, darshan.shukla@larsentoubro.com

Dear Sir,

Thanks for the email.

You may consider it as approved from my side.

Regards,
Dr. S. C. Vora

[Quoted text hidden]

> [Quoted text hidden]
>
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C S Patel Institute of Technology

Department of Electrical Engineering

Minutes of Departmental Meeting

Departmental meeting was organised on July 03, 2020 (Friday) @ 02.00 p.m. at UG Simulation Lab. Course distribution was done in advanced and accordingly time table was prepared and distributed. Formation of department committee and responsibilities along with allocation of lab coordinators, class coordinators and course coordinators were main agendas of the meeting.

Also following points were discussed during meeting

- Time Table and Course Distribution for odd semesters: ACY 2020-2021
- Class coordinators, course coordinators and lab coordinators
- Formation of departmental and institutional committee and responsibilities
- Complete the course files for the respective courses for the previous even term
- Prepare and update the course files for the respective courses for the current odd term
- In the course file, prepare the assignment and question banks chapter/topic wise. Also you are requested to mark the related references so that students can get the best answers for exam preparation.
- Guide the students well and explain your expectation from them during your teaching. After completing the topic in class, summarize the topic and guide them about the question-answer pattern from those topics.
- Prepare the soft copy of lab manuals including all practical/tutorials solutions for the respective courses assigned to you. Display the copy of lab planning on soft board of lab
- Prepare the **soft copy of master test records/files for the practical/tutorials**
    - Master test record/file must contain all the details like aim, objective, apparatus, circuit diagram, theory, observations, complete calculations, graph, questions-answers, conclusion etc. related to that practical/tutorial/simulation.
- Prepare the E – Material of the respective courses
- Update the home page
- Paper presentation at national/international conferences and journals
- STTP attending and organizing
- Result Analysis and Preparation of List for Slow Learners and students with backlogs in the respective courses [Submit the list of students with backlogs with necessary action plan as per the format circulated earlier before 01/07/2019]

- Remedial classes: for slow learner [Prepare a separate time table (MJS will provide the TT; display it on notice board; faculties are informed to conduct the remedial classes and maintain the students' progression report]
- Steps for placement improvement and admission improvement
- Methodology for practical performance (Experiment/Simulation/Software)
- Review of external examiner.
- Student Counselling [Prepare the Google Group for quick and sure circulation of information]
- Information about research grant and funding projects.
- Presence of respective lab-techs during practical performance.
- Instruction given to faculty members about online teaching.

HOD- EED

CSPIT

HEAD OF DEPARTMENT
Dept. of Electrical Engg.
Chandubhai S. Patel Institute of Technology
At. & Po Changa-388421., Ta. Petlad,
Dist. : Anand. (Gujarat)

CHANDUBHAI S. PATEL INSTITUTE OF TECHNOLOGY - CHANGA
CONSTITUENT OF CHARUSAT
At & Po. CHANGA - 388 421. Ta. Petlad, Dist Anand
Phone : (02697) 247500, 248133 Fax : (02697) 247100
E-mail : principal.cspit@charusat.ac.in

Date: 03/03/2021

To
Shri A. S. Khopkar
Senior Manager & Acting Head
PETE - II,
Electrical Research & Development Association (ERDA)
Vadodara, Gujarat, India.

Subject - Invitation to mock interviews for final year students.

Dear Sir,
Chandubhai S. Patel Institute of Technology is one of the premier institutes of state and has a vision to become a leading institute for dissemination and creation of knowledge in the frontiers of technology. The M&V Patel Department of Electrical Engineering of this institute is also working with same vision.

As a part of the career development and placement activity, M & V Patel department of Electrical Engineering invites industry experts to provide a proactive support in terms of conducting a mock round of interviews to the students which can be beneficial to the young engineers during actual company interviews.

Being an esteemed industry, we are pleased to invite you to conduct the mock round of interview for our final year students who are going to appear for the upcoming campus drives. We would like to arrange a mock round of interview through online (Google Meet) on **05/03/2021** as per following schedule.

- **Morning Session:** 11:00 AM to 02:00 PM
- **Afternoon Session:** 02:00 PM to 05:00 PM

You are requested to suggest your convenient time from the above slots.
Hope you will accept the invitation.

Thanking You,
With Warm Regards
Sincerely Yours,

Mihir A. Bhatt
Asst. Professor
M & V Patel Dept. of Electrical Engg.
Chandubhai S. Patel Inst. Of Tech.
CHARUSAT University, Changa

Dr. Nilay Patel
Head of the Department
M & V Patel Dept. of Electrical Engg.,
Chandubhai S. Patel Inst. Of Tech.
CHASRUSAT University, Changa

CHARUSAT
CHAROTAR UNIVERSITY OF SCIENCE AND TECHNOLOGY

Mahammadsoaib Saiyad <mahammadsoaibsaiyad.ee@charusat.ac.in>

Fwd: An invitation to conduct online Mock Interview for Final Year Students on 05/03/2021

mihir bhatt <mihirbhatt.ee@charusat.ac.in> Mon, Jul 12, 2021 at 3:39 PM
To: Mahammadsoaib Saiyad <mahammadsoaibsaiyad.ee@charusat.ac.in>

---------- Forwarded message ---------
From: **ASK** <a.s.khopkar@gmail.com>
Date: Thu, Mar 4, 2021 at 12:08 PM
Subject: Re: An invitation to conduct online Mock Interview for Final Year Students on 05/03/2021
To: mihir bhatt <mihirbhatt.ee@charusat.ac.in>
Cc: Head Electrical CHARUSAT <hod.ee@charusat.ac.in>, TNP Cell <tnp@charusat.ac.in>

Dear Sir,
Thanks for invitation. As inform, we will conduct mock round reveiw from 11.00 am onwards (up to @ 02:00 pm) on 05/03/2021.
Please provide link for the same.
Anil S. Khopkar
+ 91 9924043730, 9978940962.

On Wed, Mar 3, 2021 at 12:33 PM mihir bhatt <mihirbhatt.ee@charusat.ac.in> wrote:

> Dear Sir,
> Greetings from CHARUSAT!!!
>
> On behalf of the department, I am thankful to you for showing your interest for conducting the online mock interview for the students of M & V Patel Department of Electrical Engineering who are going to appear for futuristic campus drives.
>
> As per our discussion, you are requested to give your suitable time slot for conducting a mock round of interviews on 05/03/2021.
>
> Please find the invitation letter attached herewith.
>
> Thanking you
> With Best Regards
> --
> **Mihir A. Bhatt**
> **Asst. Professor (PhD Pursuing)**
> **Dept. of Electrical Engineering**
> **CSPIT - CHARUSAT, Changa**
> **Email: mihirbhatt.ee@charusat.ac.in**
> **(O): 02697-265045**
> **(M): +919913277673**
>
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