



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

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CHAROTAR UNIVERSITY OF SCIENCE AND TECHNOLOGY
CHARUSAT CAMPUS, CHANGA

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. Praghmesh 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	

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Initiation:

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

Agenda Proceedings & Resolutions:-

Item 12.01:	<p>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.</p> <p><u>Proceedings 12.01:</u></p> <p>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.</p> <p>Suggestions Received:</p> <ul style="list-style-type: none"> ▪ 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. <p style="text-align: center;">Certified By:</p>
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	<p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <ul style="list-style-type: none"> ▪ 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. <p><u>Resolution 12.01:</u></p> <ul style="list-style-type: none"> • 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.
<p>Item 12.02:</p>	<p>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.</p> <p><u>Proceedings 12.02:</u></p> <p>The detailed syllabus of the courses for B Tech – 2nd Year (3rd and 4th Semesters) effective from 2017-2018 are reviewed.</p> <p><u>Suggestions Received:</u></p> <ul style="list-style-type: none"> ▪ 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.

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	<p>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.</p> <ul style="list-style-type: none"> ▪ For EE242: Circuit Theory, the contents are found suitable. Following new books for circuit theory are proposed. <ol style="list-style-type: none"> 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 <p>Resolution 12.02:</p> <ul style="list-style-type: none"> ▪ 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
	<p>Proceedings 12.03:</p> <p>The teaching and examination scheme of M. Tech program under Choice Based Credit System (CBCS) effective from ACY: 2016-2017 is reviewed.</p> <p>Suggestions Received:</p> <ul style="list-style-type: none"> ▪ 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. <p>Resolution 12.03:</p>

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	<p>University elective courses are introduced.</p> <p>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.</p>
Item 12.04	<p>To review and approve the detailed syllabus of 1st and 2nd year M. Tech program under CBCS effective from ACY 2016-2017.</p> <p>Proceedings 10.04:</p> <p>The detailed syllabus of 1st and 2nd year M. Tech program under CBCS effective from ACY 2016-2017 is reviewed.</p> <p>Suggestions Received:</p> <p>EE781 Optimization Techniques and EE782</p> <p>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.</p> <p>Very good university electives are constructed by various BoS and listed in annexure IV.</p> <p>Resolution 12.04:</p> <p>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.</p>
Item 12.05	<p>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</p> <p>Resolution 10.05:</p> <p>(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.</p>
Item 12.06	<p>Discussion on effective implementation of Outcome Based Education (OBE) and ICT based Teaching-Learning</p> <p>Suggestions Received:</p> <ul style="list-style-type: none"> ▪ 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	<p>Introducing the new PG program in Electrical Engineering</p> <p>Suggestions Received:</p> <p>Following PG programs in Electrical Engineering are proposed.</p> <ol style="list-style-type: none"> (1) Power Electronics and Drives (2) Renewable Energy (3) Automation and Control
Item 12.08	<p>Suggestion regarding new UG programs in new Institute of Technology of Faculty of</p>

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	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 weightage 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.

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activities	
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Dr. Praghesh Bhatt
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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				Total			
			Contact Hours		Credit	Theory		Practical						
			Theory	Practical/Tutorial		Total	Internal	External	Internal	External				
	HS101A- HS106A	A Course on Liberal Arts		2		2		2			50	50	100	
	MA141	Engineering Mathematics I	4	1		5	30	70	0	0			100	
	ME141	Engineering Graphics	2	4		6	30	70	50	50			200	
	PY141	Engineering Physics	3	2		5	30	70	25	25			150	
	CL141	Engineering Mechanics	4	2		6	30	70	25	25			150	
	ME142	Workshop Practices	0	2		2			25	25			50	
		Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra-curricular & co curricular				10								
			15	11		36	120	280	175	175			750	
Level I	HS 121A	English Language & Literature		2		2	25	25	25	25			100	
	MA142	Engineering Mathematics II	4	1		5	30	70					100	
	CL142	Environmental Science	2	0		2	30	70					100	
	IT141	Fundamentals of Computer Programming	3	2		5	30	70	25	25			150	
	ME143	Basics of Civil & Mechanical Engineering	4	2		6	30	70	25	25			150	
	EE141	Basics of Electronics & Electrical Engineering	4	2		6	30	70	25	25			150	
			Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra-curricular & co curricular				10							
				19	36		55	175	375	100	100			750

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

Level 2

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

Level 3

	Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra-curricular & co curricular	18	14	4	25	175	375	200	200	950
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					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
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Level 4

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

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University Elective I & II: 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 12.III & IV TEACHING AND EXAMINATION SCHEME FOR M Tech in Electrical Engineering (Electrical Power Systems)

Semester	Course Code	Course Title	Teaching Scheme			Credit	Examination Scheme					Total
			Theory	Practical/Tutorial	Total		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	
Sem 2	HS701	Advanced Critical Thinking & Logic (UC - 1)	2	0	2	2	30	70	0	0	100	
	XXXXXX	University Elective 1 (UE - 1)	2	0	2	2	30	70	0	0	100	
			20	10	30	25	210	490	125	125	950	
	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	

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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
XXXXXX	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

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MA772	Design of Experiments
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MB650	Creative Leadership
PH825	Community Pharmacy Ownership

Semester	Course Code	Course Title	Credit	Examination Scheme					Total	
				Internal		External				
				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

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 CHARUSAT CAMPUS, CHANGA

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			Credits	Examination Scheme				Total
			Contact Hrs.		Total		Theory		Practical		
			Theory	Practical			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
Final Sem-VIII		Elective - I	4	2	6	5	30	70	25	25	150
	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							

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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	0	2	2	0	0	30	70	100
			20	10	0	30	25	150	350	155	195	850
	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
TY Sem- VI	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	0	2	2	25	25	25	25	100
			2	0	0	2	2	25	25	25	25	100

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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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22	Mihir R Patel	CSPIT	9723315488	mihirpatel.ee@charusat.ac.in
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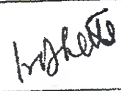




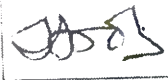






Minutes – 12th Board of Studies Meeting
M&V Patel Department of Electrical Engineering
Faculty of Technology & Engineering, CHARUSAT

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. Praghnes 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. 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	

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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	

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 CHARUSAT CAMPUS, CHANGA

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Initiation:

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

Agenda Proceedings & Resolutions:-

Item	To prepare and review the detailed syllabus of 4 th year B.TECH program under CBCS.																																												
14.01:	<p><u>Proceedings 14.01:</u></p> <p>The detailed syllabus of the courses for B Tech – 4th Year (7th and 8th Semesters) is reviewed.</p> <p>Suggestions Received:</p> <p><u>EE441: Power System Operations and Control</u></p> <table border="1"> <tr><td>1</td><td>Topics on State Estimation & Load forecasting should be incorporated.</td></tr> <tr><td>2</td><td>Syllabus is lengthy.</td></tr> <tr><td>3</td><td>Chapter of transients should be removed or modified</td></tr> <tr><td>4</td><td>Text books and reference books should be swapped.</td></tr> <tr><td>5</td><td>Year of the book can be removed as it seems to be old version of book.</td></tr> <tr><td>6</td><td>Voltage stability part can be removed.</td></tr> <tr><td>7</td><td>Add contingency analysis method</td></tr> <tr><td>8</td><td>Use B.R..Gupta as a text book</td></tr> </table> <p><u>EE442: Power System Protection</u></p> <table border="1"> <tr><td>1</td><td>Chapter 9 should be removed.</td></tr> <tr><td>2</td><td>16 hours of transmission can be reduced.</td></tr> <tr><td>3</td><td>Add Earthing of power system</td></tr> </table> <p><u>EE443: Electrical Machine Design</u></p> <table border="1"> <tr><td>1</td><td>DC machine design part can be reduced/removed.</td></tr> </table> <p><u>EE444: Simulation Lab</u></p> <table border="1"> <tr><td>1</td><td>Hours distribution modify</td></tr> <tr><td>2</td><td>20 hours are more.</td></tr> <tr><td>3</td><td>Keep basic experiments.</td></tr> <tr><td>4</td><td>Experiments of machine are tough for students.</td></tr> <tr><td>5</td><td>It should be "Suggested" list of experiment in syllabus booklet.</td></tr> <tr><td>6</td><td>Fault analysis experiments can be added.</td></tr> <tr><td>7</td><td>Linear equation solution can be added.</td></tr> <tr><td>8</td><td>Multiple faculties should be involved in framing the experiments and conducting lab.</td></tr> <tr><td>9</td><td>It should be kept simple for students.</td></tr> <tr><td>10</td><td>Numerical Methods, RLC series and Parallel operation and its Transients type Practical should be included.</td></tr> </table> <p style="text-align: center;">Certified By:</p>	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	1	Chapter 9 should be removed.	2	16 hours of transmission can be reduced.	3	Add Earthing of power system	1	DC machine design part can be reduced/removed.	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.
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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
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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-1, 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)**Certified By:**

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	<p>1 No Comments</p> <p><u>Resolution 14.01:</u></p> <ul style="list-style-type: none"> 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	<p>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).</p>								
	<p><u>Proceedings 14.02:</u></p> <p>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.</p> <p>Suggestions Received:</p> <p>The second year university electives offered by electrical engineering department should be more in line with current scenario and it must be changed.</p> <p><u>EE283: Python for Electrical Engineering (University Elective I)</u></p> <table border="1"> <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> <p><u>EE286: Computer Programming for Electrical Engineering (University Elective I)</u></p> <table border="1"> <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> <p><u>Resolution 14.02:</u></p> <p>Above two courses introduce from AY 2018-19, remaining electives can be kept as it is.</p> <p>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</p>	1	Basics of python programming taught here.	2	Various problems can be solved using python programming.	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.
1	Basics of python programming taught here.								
2	Various problems can be solved using python programming.								
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.								
Item 14.03	<p>To review and approve T&E scheme of M. Tech in Power Electronics for ACY 2018-2019 under CBCS</p>								
	<p><u>Proceedings 14.03:</u></p> <p>The teaching and examination scheme of M. Tech in Power Electronics for ACY 2018-2019 under CBCS is reviewed.</p>								

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	<p>Suggestions Received:</p> <ul style="list-style-type: none"> ▪ 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
	<p>Proceedings 14.04:</p> <p>The teaching and examination scheme of M. Tech in EPS for ACY 2018-2019 under CBCS is reviewed.</p> <p>Suggestions Received:</p> <ul style="list-style-type: none"> ▪ No Suggestion. It is already draft one year back and approved. Attached in Annexure –IV
Item 14.05	<p>Proceedings 14.05:</p> <p>Discussion on effective implementation of Outcome Based Education (OBE) and ICT based Teaching-Learning</p> <p>Suggestions Received:</p> <ul style="list-style-type: none"> ▪ 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	<p>Proceedings 14.06:</p> <p>Introducing the new UG program in Electrical Engineering</p> <p>Suggestions Received:</p> <p>Not needed right now.</p>
Item 14.07	<p>Proceedings 14.07:</p> <p>Discussion regarding approval from NBA and scope for the improvement</p> <p>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.</p> <p>Suggestion received:</p> <p>Cadre ratio and student- teacher ratio along with research in department are most affected factors.</p>
Item 14.08	Proceedings 14.08 and 14.09:
Item 14.09	<p>To approve the syllabus of M Tech (Newly Introduced Programs)</p> <p>Resolution</p> <p>This agenda is duplicated as per agenda number 2 & 3</p>
Item 14.10	<p>Proceedings 14.10:</p> <p>To incorporate the revised syllabus of Mathematics and Physics in first year</p> <p>Resolution</p>

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

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 –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.

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	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 faculty 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 per 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.

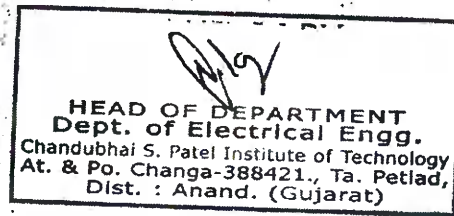
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2. Day by day the students in A group of 12th standards are decreasing due to lack of interest in mathematics subject. So students must be motivated to take interest in maths subject right from school level.
3. Experts gave their opinion that, each branch has its cycle depending on market scenario. So within two years, again the interest of 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				Credit	Examination Scheme				Total		
			Contact Hours		Theory	Theory		Practical						
			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	30	70						100	
	ME141	Engineering Graphics	2	4	6	30	70	50	50				200	
	PY141	Engineering Physics	3	2	5	30	70	25	25				150	
	CL141	Engineering Mechanics	4	2	6	30	70	25	25				150	
	ME142	Workshop Practices	0	2	2			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	25	25	25	25					100
	MA142	Engineering Mathematics II	4	1 (T)	4	30	70							100
	CL142	Environmental Science	2		2	30	70							100
IT141	Fundamentals of Computer Programming	3	2	5	30	70	25	25					150	
ME143	Basics of Civil & Mechanical Engineering	4	2	6	30	70	25	25					150	
EE141	Basics of Electronics & Electrical Engineering	4	2	6	30	70	25	25					150	
	Assignment Practices/Student counseling/Remedial classes/Library/Sports/Extra- curricular & co curricular			11										
				36	22								750	

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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
XXXX	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
XXXX	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
		Certified By:									

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

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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

Level 4

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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: 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

Certified By:





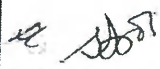
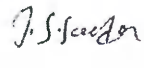




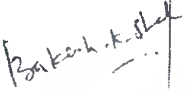

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 CHARUSAT CAMPUS, CHANGA

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,	
	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	

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CHARUSAT CAMPUS, CHANGA

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. Praghmesh 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

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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: -

<p>Item 16.01</p>	<p>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)</p> <p><u>Proceedings 16.01:</u></p> <p>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.</p> <p>Following Revisions in B Tech programme are proposed.</p> <ul style="list-style-type: none"> ▪ 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. <p style="padding-left: 40px;">CL283: SDG Handprint Laboratory (For UG Semester-3)</p> <p><u>Resolution 16.01:</u></p> <p>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</p>
<p>Item 16.02</p>	<p>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).</p> <p><u>Proceedings 16.02:</u></p> <p>The teaching and examination scheme of Final Year B. Tech program for 2018-2019 under Choice Based Credit System (CBCS) is reviewed.</p> <p>Suggestions Received:</p> <ul style="list-style-type: none"> ▪ No need to revise it. <p><u>Resolution 16.02:</u></p> <p>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.)</p> <p>The T & E scheme for Final Year B. Tech. (2018 entry students) is attached in Annexure – II</p>
<p>Item 16.03</p>	<p>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,</p>

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	<p>mathematics and HSS department.</p> <p><u>Proceedings 16.03:</u></p> <p>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.</p> <ul style="list-style-type: none"> ▪ 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 <ol style="list-style-type: none"> 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 <p>MA252 Advanced Engineering Mathematics (Sem-3)</p> • In second year B Tech, Humanities (HSS) courses are revised in introduced with effective from AY 2020-21 <ol style="list-style-type: none"> 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 <ol style="list-style-type: none"> 1. HS131.02A Communication and Soft Skills (Sem-5) 2. HS132.02A Contributory Personality Development (Sem-6) <p><u>Resolution 16.03:</u></p> <p>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).</p>
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.

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	<p><u>Proceedings 16.04:</u></p> <p>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.</p> <p>Suggestions Received:</p> <ul style="list-style-type: none"> ▪ As per last academic council meeting, first year university elective course is dropped. <p><u>Resolution 16.04:</u></p> <p>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</p> <p>The classes of B Tech and M Tech can be taken online or off-campus mode.</p>
Item 16.05	<p>Analysis and discussion on the semester end results of the students and steps taken for the remedial actions</p> <p><u>Proceedings 16.05:</u></p> <p>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</p>
Item 16.06	<p>Analysis of campus placement and discussion of related activities to enhance them further. (Annexure-VI)</p> <p><u>Proceedings 16.06:</u></p> <p>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</p>
Item 16.07	<p>To add new University Elective and revise existing University Electives from Electrical Engineering Department for UG Program.</p> <p><u>Proceedings 16.07:</u></p> <p>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)</p> <p>Suggestions Received:</p> <ul style="list-style-type: none"> ▪ EE284 Python Programming replaces EE283 Python for Electrical Engineering course. (UE Sem-3)

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	<ul style="list-style-type: none"> ▪ 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. <p>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</p>
<p>Item 16.08</p>	<p>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.</p>
	<p>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 [REDACTED] in B Tech programme are proposed.</p> <ul style="list-style-type: none"> ▪ 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. <ul style="list-style-type: none"> ➤ 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 <p>[REDACTED]</p> <p>The specialized courses taught from specialized faculties. Also, hands on practice needed for students.</p> <p>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</p>

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<p>Item 16.09</p>	<p>Preparation, Discussion, and approval of the Elective Courses (University, Institute, and Program Electives)</p> <p><u>Proceedings 16.09:</u></p> <p>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.</p> <p>In first year M Tech, Humanities (HSS) courses are revised in introduced with effective from AY 2020-21</p> <ol style="list-style-type: none"> 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) <p><u>Resolution 16.09:</u></p> <p>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</p>						
<p>Item 16.10</p>	<p><u>For Discussion:</u></p> <p>To approve the PhD Synopsis of research scholar</p> <p><u>Proceedings 16.10:</u></p> <p>Department of Electrical Engineering, Faculty of Technology & Engineering has received following synopsis of research scholar during 2019-20.</p> <table border="1" data-bbox="220 1115 1423 1283"> <thead> <tr> <th>Sr. No.</th> <th>Research Scholar</th> <th>Research Topic</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Dharmesh Dabhi (16DREE007)</td> <td>Developing Metaheuristic Optimization Techniques For Optimal Scheduling of Distributed Energy Resources on Smart Grid Environment.</td> </tr> </tbody> </table> <p>Synopsis and panel referees of research scholars are placed before the BoS members.</p> <p><u>Resolution- 16.10</u></p> <p>Board of Studies members approved the synopsis & panel referees of Research Scholar(s) for further process.</p>	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.
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.					
<p>Item 16.11</p>	<p><u>Proceedings 16.11:</u></p> <p>Giving information about seat reduction in B. Tech. (Electrical) and closure of M. Tech. (PE) Programme.</p> <p>From AY 2020-21, B Tech Electrical Engineering seats reduced to 60.</p> <p>From AY 2020-21 M Tech (Power Electronics) program is closed.</p>						
<p>Item 16.12</p>	<p><u>Proceedings 16.12:</u></p> <p>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.</p>						

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	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 4 th 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: <ul style="list-style-type: none"> ▪ 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

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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 per 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.

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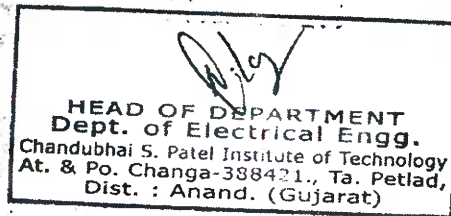
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2. Dr. Praghnesh bhatt and Dr. Santosh Vora, FB Member, appreciated the course covered in curriculum. They suggested to introduce the students clubs at Electrical Engineering Department.
3. Dr. Santosh Vora insist on the inter institute collaboration.
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)



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

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Level	Course Code	Course Title	Teaching Scheme						Examination Scheme				
			Contact Hours			Credit	Theory		Practical		Total		
			Theory	Practical	Tutorial		Total	Internal	External	Internal		External	
	HS121.02A	Creativity, Problem Solving and Innovation		2			2	0	0	0	30	70	100
	MA252	Advanced Engineering Mathematics	4	0	0	4	4	30	70				100
	EE251	Analog and Digital Electronics	3	2	0	5	4	30	70	25	25	25	150
	EE252	Circuit Theory	3	2	0	5	4	30	70	25	25	25	150
	EE243	Electrical Measurements and Industrial Instrumentation	4	2	0	6	5	30	70	25	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							
Level 2			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	25	150
	EE246	Microprocessor & Microcontrollers	4	2	0	6	5	30	70	25	25	25	150
	EE247	Transformers and Induction Machines	4	4	0	8	6	30	70	50	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

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

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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	
	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	
Level 4	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 & co-curricular				9							
			15	12	0	36	24	120	280	225	225	850	
	EE458	Major Project	0	36	0	36	20			400	400	800	

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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
CHAROTAR UNIVERSITY OF SCIENCE & TECHNOLOGY (CHARUSAT)											
			Hours				Marks				
			Total Teaching Hrs	Theory	Practical	Total					
			0	98	122	288	176	900	2100	1690	2010
			LIST OF ELECTIVES FOR B TECH PROGRAMME IN ELECTRICAL ENGINEERING								

University Electives for Level 2

University Elective 1		University 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		

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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: Praghnesha.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

Praghnesha Bhatt <Praghnesha.Bhatt@sot.pdpu.ac.in>
 To: Head Electrical CHARUSAT <hod.ee@charusat.ac.in>

Thu, Jul 9, 2020 at 1:25 PM

Dear Sir

The MoM for BoS is approved from my end.

Regards

 Dr Praghnesha Bhatt
 Associate Professor & Head
 Department of Electrical Engineering
 School of Technology, PDP
 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>

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From: Head Electrical CHARUSAT [hod.ee@charusat.ac.in]
Sent: Wednesday, July 08, 2020 3:04 PM
To: Praghmesh 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>
To: Head Electrical CHARUSAT <hod.ee@charusat.ac.in>

Thu, Jul 9, 2020 at 2:53 PM

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

Certified By:

From: Head Electrical CHARUSAT <hod.ee@charusat.ac.in>
Sent: Wednesday, July 8, 2020 3:05 PM
To: Praghmesh.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: Praghmesh Bhatt <Praghmesh.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

[Quoted text hidden]

[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: Praghmesh.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

Certified By:

Dear Sir,

As per the agenda item and resolution 16.12 of BoS16, Our department has decided to offer two minor specializations to Electrical Engineering students.

1. Minor specialization in "Machine Learning and Artificial Intelligence".


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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: "Praghmesh.Bhatt@sot.pdpu.ac.in" <Praghmesh.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: Praghmesh.Bhatt@sot.pdpu.ac.in <Praghmesh.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>, "Praghmesh.Bhatt@sot.pdpu.ac.in" <Praghmesh.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: Praghmesh.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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Praghmesh Bhatt <Praghmesh.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.

Certified By:

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CHARUSAT CAMPUS, CHANGA

Regards

 Dr Praghmesh Bhatt
 Associate Professor & Head
 Department of Electrical Engineering
 School of Technology, PDP
 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: Praghmesh 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: Praghmesh Bhatt <Praghmesh.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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