

**Department of Electrical Engineering****Semester- ODD****Structure of Course****COURSE DETAILS**

Class	B. Tech. Sem. –VII
Course Code and Course Title	BTEEC701 High Voltage Engineering
Prerequisite/s	BTEEC302, BTEEPE504A
Teaching Scheme: Lecture/Tutorial/Practical	03/01/00
Credits	04
Evaluation Scheme: CA / MSE / ESE	20/20/60

Course Outcomes:

Course Outcomes (COs): Upon successful completion of this course, the student will be able to:		Blooms Level
BTEEC701_1	Analyze the concept of electric field stresses in high voltage engineering.	L3
BTEEC701_2	Realize the breakdown process in solid, liquid, and gaseous medium.	L3
BTEEC701_3	Illustrate breakdown in dielectric Materials.	L3
BTEEC701_4	Discuss overvoltage due to lightning phenomenon in high voltage engineering	L3
BTEEC701_5	Illustrate methods for generation and measurement of high voltages and currents (both ac and dc).	L3
BTEEC701_6	Explain the phenomenon of over-voltage and choose appropriate insulation coordination levels based on IS & IEC Standards.	L3

Mapping of CO's with PO's and PSO's:

Course Outcomes	Programme Outcomes														
	1	2	3	4	5	6	7	8	9	10	11	12	PSO 1	PSO 2	PSO 3
BTEEC701_1	3				2	2		2	2	2			2	2	
BTEEC701_2	3				2	2		2	2	2			2	2	
BTEEC701_3	3				2	2		2	2	2			2	2	
BTEEC701_4	3				2	2		2	2	2			2	2	
BTEEC701_5	3				2	2		2	2	2			2	2	
BTEEC701_6	3				2	2		2	2	2			2	2	
Total	18				12	12		12	12	12			12	12	
Average	3				2	2		2	2	2			2	2	
BTEEC701	3				2	2		2	2	2			2	2	

Mission of the Department

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M1: Preparing technically and professionally competent engineers by imparting quality education through effective teaching learning methodologies.

M2: Developing professional skills and right attitude among students that will help them to succeed and progress in their personal and professional career.

M3: Inculcating moral and ethical values in students with concern to society and environment.

Vision of the Department

To emerge as a center of excellence in Electrical Engineering education producing knowledgeable, employable, and ethical engineering graduates to serve industry/society

**Department of Electrical Engineering**

Semester- ODD

COURSE DETAILS**Structure of Course**

Class	B. Tech. Sem. –VII
Course Code and Course Title	POWER SYSTEM OPERATION AND CONTROL (BTEEC702)
Prerequisite/s	EM-I,EM-II
Teaching:Scheme:Lecture/Tutorial/Practical	03/01/00
Credits	4
Evaluation Scheme: CA / MSE / ESE	20/20/60

Course Outcomes:

Course Outcomes (COs): Upon successful completion of this course, the student will be able to:		Blooms Level
BTEEC702_1	Analyze different methods to control reactive power.	L2
BTEEC702_2	Gain knowledge to check Stability of the synchronous generator ,and improvement in stability	L3
BTEEC702_3	Describe Excitation system types and control	L4
BTEEC702_4	Gain knowledge of importance of frequency control	L4
BTEEC702_5	Understand unit commitment problem and importance of economic load dispatch.	L4

Mapping of Course Outcomes to Program Outcomes:

Course Outcomes	Programme Outcomes														
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
BTEEC702_1	3	2	2	1	-	-	-	-	-	-	-	1	1	-	-
BTEEC702_2	3	2	2	2	-	-	-	-	-	-	-	1	3	1	-
BTEEC702_3	2	2	1	2	-	-	-	-	-	-	-	1	3	1	-
BTEEC702_4	3	2	2	1	-	-	-	-	-	-	-	1	1	-	-
BTEEC702_5	2	2	2	1	2	-	-	-	-	-	-	1	2	1	-
Average	2.6	2	1.8	1.4	2							1	2	1	

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Department of Electrical Engineering

COURSE DETAILS Semester- ODD

Structure of Course

Class	Final Year B. Tech. Sem. –VII
Course Code and Course Title	BTEEPE703A Energy Conservation and Audit
Prerequisite/s	BTEEPE405C
Teaching Scheme: Lecture/Tutorial/Practical	03/00/00
Credits	03
Evaluation Scheme: CA / MSE / ESE	20/20/60

Course Outcomes:

Course Outcomes (COs): Upon successful completion of this course, the student will be able to:		Blooms Level
BTEEPE703A_1	Illustrate various concepts of energy sources and international agreements on climate change.	L3
BTEEPE703A_2	Describe use of different energy inputs in the industry and their energy efficient design.	L3
BTEEPE703A_3	Explain different forms of energy used in non – industrial sector.	L3
BTEEPE703A_4	Describe the concept of energy audit, its principle and measurement.	L3
BTEEPE703A_5	Explain the energy conservation in different sector and its numerical interpretation.	L3

Mapping of CO's with PO's and PSO's:

Course Outcomes	Programme Outcomes														
	1	2	3	4	5	6	7	8	9	10	11	12	PSO 1	PSO 2	PSO 3
BTEEPE703A_1	2					2	2	2				1			2
BTEEPE703A_2	3					2	2	2				1			2
BTEEPE703A_3	3					2	2	2				1			2
BTEEPE703A_4	3					2	2	2				1			2
BTEEPE703A_5	3					2	2	2				1			2
Total	14					10	10	10				5			10
Average	2.8					2	2	2				1			2
BTEEPE703A	3					2	2	2				1			2

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**Department of Electrical Engineering**

Semester- ODD

COURSE DETAILS**Structure of Course**

Class	B. Tech. Sem. –VI
Course Code and Course Title	BTEEOE705B Electric and Hybrid Electric Vehicles
Prerequisite/s	BTEEC302, BTEEC403, BTEEC503
Teaching Scheme: Lecture/Tutorial/Practical	03/00/00
Credits	03
Evaluation Scheme: CA / MSE / ESE	20/20/60

Course Outcomes:

Course Outcomes (COs): Upon successful completion of this course, the student will be able to:		Blooms Level
BTEEOE705B_1	Explain beneficial aspects of electric vehicle and vehicle mechanics of conventional vehicles.	L3
BTEEOE705B_2	Select suitable drive train and control mechanism for Electric and Hybrid Vehicles.	L3
BTEEOE705B_3	Choose appropriate propulsion system for Electric and Hybrid Electric Vehicles.	L3
BTEEOE705B_4	Describe suitable energy storage and its hybridization system for Electric and Hybrid Electric Vehicles.	L3
BTEEOE705B_5	Discuss determination of sizing of motor, power electronics and storage technology for Electric and Hybrid vehicle.	L3

Mapping of CO's with PO's and PSO's:

Course Outcomes	Programme Outcomes														
	1	2	3	4	5	6	7	8	9	10	11	12	PSO 1	PSO 2	PSO 3
BTEEOE705B_1	2					3	3	2		2					2
BTEEOE705B_2	3							2		2					2
BTEEOE705B_3	3							2		2					2
BTEEOE705B_4	3							2		2					2
BTEEOE705B_5	3							2		2					2
Total	13					3	3	10		10					10
Average	2.6					3	3	2		2					2
BTEEOE705B	3														

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**Department of Electrical Engineering**
COURSE DETAILS

Semester- ODD

Structure of Course

Class	B. Tech. Sem. –VII
Course Code and Course Title	BTEEL707 High Voltage Engineering Laboratory
Prerequisite/s	BTEEC302, BTEEP504A
Teaching Scheme: Lecture/Tutorial/Practical	00/00/02
Credits	01
Evaluation Scheme: CA / ESE	60/40

Course Outcomes:

Course Outcomes (COs): Upon successful completion of this course, the student will be able to:		Blooms Level
BTEEL707_1	Realize the principle of High Voltage Application in a practical manner.	L3
BTEEL707_2	Perform the breakdown test in solid, liquid, and gaseous materials.	L3
BTEEL707_3	Conduct test on generation and measurement of High Voltages and Currents (both ac and dc).	L3
BTEEL707_4	Communicate effectively in the form of oral and writing journal.	L3
BTEEL707_5	Practice safety precautions while performing experiments in Laboratory.	L3

Mapping of CO's with PO's and PSO's:

Course Outcomes	Programme Outcomes														
	1	2	3	4	5	6	7	8	9	10	11	12	PSO 1	PSO2	PSO 3
BTEEL707_1	3				2	2	2	2	2	2			3	3	
BTEEL707_2	3				2	2	2	2	2	2			3	3	
BTEEL707_3	3				2	2	2	2	2	2			3	3	
BTEEL707_4	3				2	2	2	2	2	2			3	3	
BTEEL707_5	3				2	2	2	2	2	2			3	3	
Total	15				10	10	10	10	10	10			15	15	
Average	3				2	2	2	2	2	2			5	5	
BTEEL707	3				2	2	2	2	2	2			3	3	

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COURSE DETAILS

Semester- ODD

Structure of Course

Class	B. Tech. Sem. –VIII
Course Code and Course Title	BTEEPE801 Introduction to Industry 4.0 and Industrial Internet of Things
Prerequisite/s	
Teaching Scheme: Lecture/Tutorial/Practical	03/00/00
Credits	03
Evaluation Scheme: CA / MSE ESE	20/20/60
Course Coordinator	Dr. N. M. Jamadar

Course Outcomes:

Course Outcomes (COs):		Blooms Level
Upon successful completion of this course, the student will be able to:		
BTEEPE801_1	Attain a comprehensive grasp of course material, showcasing proficiency through practical applications and assessments.	L3
BTEEPE801_2	Cultivate critical thinking abilities by analyzing and synthesizing information, enabling adept problem-solving within the subject.	L3
BTEEPE801_3	Develop clear and concise communication skills, articulating complex ideas related to the course with precision.	L3
BTEEPE801_4	Foster self-directed learning habits by mastering time management and autonomously navigating through course material.	L4
BTEEPE801_5	Apply acquired knowledge to real-world scenarios, demonstrating the practical relevance of learned concepts within the field of study.	L4

Mapping of Course Outcomes to Program Outcomes:

Course Outcomes	Program Outcomes														
	1	2	3	4	5	6	7	8	9	10	11	12	PSO1	PSO2	PSO3
BTEEPE801_1	3	2				2				2			2		2
BTEEPE801_2	3	2				2				2			2		2
BTEEPE801_3	3	2				2				2			2		2
BTEEPE801_4	3	2				2				2			2		2
BTEEPE801_5	3	2				2				2			2		2
Total	15	10				10				10			10		10
Average	3	2				2				2			2		2
BTEEPE801	3	2				2				2			2		2

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