DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

1.4.2 How the feedback obtained is being analysed and utilized for overall development of the institution?

Collected curriculum feedback is represented through the Board of Studies Members (BOS) and syllabus framing committee members. Based on the Institutional Hierarchical Framework, Feedback can be broadly classified in to two levels

The department level feedbacks that are discussed in the department meeting and necessary initiatives and measures that are taken with the consent of the principal.

The college level feedback analyzed by the Academic Council Members (ACM) headed by the principal. On a regular basis our Institute connects with all its stake holders to collect feedback to utilize them for overall development of the institution.

Different types of Feedback taken throughout the Academic Year with Stakeholders given as follows: Feedback is collected from the following groups identified as stakeholders

1. Current students
2. Alumni
3. Faculty
4. Parents
5. Employers

Based on the inputs taken from the Stake holders, the data is processed. Below is the action taken on the feedback for the Academic year 2023-24

S.no	Feedback	Action taken	Page no
1.	Board of Studies (BoS) proposed modifications to IV semester course.	The C and Data structures theory and lab courses offered to EEE students in the III semester by the IT department (previously under the CSE board) are renamed as "Data Structures using C" and "Data Structures using C lab," respectively. These courses are now shifted to the IV semester.	1 - 10
2.	Board of Studies (BoS) proposed modifications to III semester course.	Theory course titled "Signals and Systems," originally in the IV semester as per R22, is moved to the III semester.	11-12

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<table>
<tr><td>3.</td><td>The Chairperson of the Board of Studies (BoS) proposed modifications to the R22 scheme, aligning with institute-level policies.</td><td>Under the revised scheme, instead of three internships there will be two internship courses, each carrying two credits. In place of the third internship(R22 VII-semester), students will undertake a mini-project worth two credits in (R22A-VI-semester)</td><td>13-18</td></tr>
<tr><td>4.</td><td>This decision, made at the institute level, reflects the emphasis placed by recruiters on providing students with the necessary training and skills for successful placements.</td><td>Two upskilling certificate courses, scheduled for the 4th and 6th semesters respectively.</td><td>19-20</td></tr>
<tr><td rowspan="4">5.</td><td rowspan="4">Board of Studies (BoS) proposed modifications in M.E. (PSPE) in line with the institute policy.</td><td>Lab component was reduced from 4 hours to 3 hours, therefore credits were reduced from 2 to 1.5.</td><td rowspan="2">21-24</td></tr>
<tr><td>The mini-project with the seminar was reduced from 4 hours to 2 hours, therefore credits were reduced from 2 to 1</td></tr>
<tr><td>A new Program Elective 5 is introduced with 3 credits.</td><td>25-27</td></tr>
<tr><td>A total of 25 electives are available under the Elective list, including courses on emerging technologies like Data science applications, machine learning, IoT, Wide</td><td>28</td></tr>
<tr><td>6.</td><td>The members suggested in the project phase-2 evaluation as follows:</td><td>
<table>
<tr><th>Evaluation by</th><th>Max. Marks</th><th>Evaluation Criteria / Parameter</th></tr>
<tr><td rowspan="5">External and Internal Examiners together</td><td>20</td><td>Power Point Presentation</td></tr>
<tr><td>30</td><td>Quality of Thesis Evaluation</td></tr>
<tr><td>10</td><td>Publication/ Patent/Prototype/product</td></tr>
<tr><td>20</td><td>Quality of the project
? Innovations
? Applications
? Live Research Projects
? Scope for future study
Application to society</td></tr>
<tr><td>20</td><td>Viva-Voce</td></tr>
</table>
</td><td>29-32</td></tr>
</table>

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DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

(Inline with AICTE Model Curriculum with effect from AY 2022-23)

SEMESTER – III

S. No	Course Code	Title of the Course	Scheme of Instruction			Scheme of Examination			Credits
			Hours per Week			Duration of SEE in Hours	Maximum Marks		
			L	T	P/D		CIE	SEE	
THEORY									
1	22MTC09	Applied Mathematics	3	1	-	3	40	60	4
2	22CSC29	C and Data Structures	3	-	-	3	40	60	3
3	22EEC03	Electrical Circuit Analysis	3	-	-	3	40	60	3
4	22EEC04	Electromagnetic Fields	3	-	-	3	40	60	3
5	22EEC05	Electrical Measurements and Instrumentation	3	-	-	3	40	60	3
6	22EEC06	Analog Electronic Circuits	3	-	-	3	40	60	3
7	22CEM01	Environmental Science	2	-	-	2	-	50	Non Credit
PRACTICAL									
8	22EEC07	Electrical Circuits and Measurements Lab	-	-	3	3	50	50	1.5
9	22EEC08	Analog Electronic Circuits Lab	-	-	3	3	50	50	1.5
10	22CSC30	C and Data Structures Lab	-	-	2	3	50	50	1
11	22EEI01	MOOCs/Training/ Internship	2-3 weeks/90 hours				50	-	2
Total			**20**	**1**	**8**	**-**	**440**	**560**	**25**
Clock Hours Per Week: 29									

L: Lecture **D: Drawing** **CIE: Continuous Internal Evaluation**
T:Tutorial **P: Practical/Project Seminar/Dissertation** **SEE: Semester End Examination**

22CSC29

C AND DATA STRUCTURES

(Common for ECE and EEE)

Instruction	3L Hours per week
Duration of SEE	3 Hours
SEE	60 Marks
CIE	40 Marks
Credits	3

Prerequisites: Students should have Fundamental knowledge in Problem Solving and Programming

COURSE OBJECTIVES: This course aims to

1. Discuss the concepts of Functions, Arrays, Pointers and Structures.
2. Familiarize with Stack, Queue and Linked lists data structures.
3. Explain the concepts of non-linear data structures like graphs and trees.

COURSE OUTCOMES: After the completion of this course, the student will be able to

1. Analyze the basic concepts of C Programming language.
2. Design applications in C, using functions, arrays, pointers and structures.
3. Apply the concepts of Stacks and Queues in solving the problems.
4. Explore various operations on Linked lists.
5. Demonstrate various tree traversals and graph traversal techniques.

CO-PO Articulation Matrix

PO/PSO CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
CO 1	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-
CO 2	3	2	3	1	-	1	-	-	-	-	-	-	-	2	-
CO 3	3	3	3	1	1	2	-	-	-	-	-	-	-	2	-
CO 4	3	3	3	1	-	1	-	-	-	-	-	-	-	1	-
CO 5	3	3	3	1	-	-	-	-	-	-	-	-	-	1	-

1 - Slightly, 2 - Moderately, 3 - Substantially

UNIT -I

Introduction to C Language: C language elements, variable declarations and data types, operators and expressions, decision statements – If and switch statements, loop control statements – while, for, do-while statements, arrays.

UNIT -II

Functions: Types of functions, Recursion and argument passing, pointers, storage allocation, pointers to functions, expressions involving pointers, Storage classes – auto, register, static, extern, Structures, Unions, and Command line arguments, File Operations.

UNIT -III

Data Structures: Overview of data structures, Types of Data Structures.

Stacks: Introduction, Operations on Stack, implementation of stack, Applications of Stacks- infix, prefix, and postfix notations, infix to postfix conversion, evaluation of arithmetic expressions, evaluation of postfix expression, recursion.

Queues: Introduction, Operations-representation of queue, insertion, deletion, searching operations, Applications of queues.

UNIT -IV

Linked Lists: Introduction, Types of linked list-Single linked list, Double linked lists, Circular linked lists, dynamic linked stacks and queues, Operations on all types of linked lists.

Application of Linked Lists: Polynomial representation.

UNIT -V

Trees: Tree terminology, representation, types of trees, Binary trees, representation, tree traversals, binary search tree and its operations.

Graphs: Graph terminology, representation, elementary graph operations, Graph traversals-Breadth First Search (BFS) and Depth First Search (DFS), spanning trees.

TEXT BOOKS:

1. Pradip Dey and Manas Ghosh, "Programming in C", 2nd Edition, Oxford University Press 2011.
2. E. Balaguruswamy, "C and Data Structures", 4th Edition, Tata McGraw Hill.
3. A.K. Sharma, "Computer Fundamentals and Programming in C", University Press, 2nd Edition.

SUGGESTED READING:

1. M.T. Somashekara, "Problem Solving Using C", 2nd Edition, PHI 2009 Pearson, 2013.
2. Kamala Krithivasan, Rama R. "Introduction to Automata Theory, and Computation", Pearson 2009.

NPTEL Courses:

S.No	NPTEL Course Name	Instructor	Host Institute
1	Programming and Data Structure, https://nptel.ac.in/courses/106105085	Dr. P.P. Chakraborty	IIT Kharagpur
2	Programming, Data Structures and Algorithms using C https://archive.nptel.ac.in/courses/106/106/106106127	Prof. Shankar Balachandran	IIT, Madras

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22CSC30

C AND DATA STRUCTURES LAB

Instruction	2P Hours for week
Duration of SEE	3 Hours
SEE	50Marks
CIE	50Marks
Credits	1

Prerequisites: None

COURSE OBJECTIVES: This course aims to
1. Master the concepts of Functions, Arrays, Pointers and Structures.
2. Learn data structures such as Stack, Queue and Linked lists.
3. Write C programs to implement Trees and Graphs

COURSE OUTCOMES: After the completion of this course, the student will be able to
1. Understand and trace the execution of programs written in C language
2. Apply the concepts of looping and decision-making statements for a given problem.
3. Solve problems using functions, arrays, structures and pointers.
4. Implementation various operations on stack, queue, tree and graph.
5. Apply the knowledge of data structure in problem solving

CO-PO Articulation Matrix

PO/PSO CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
CO 1	2	3	2	-	-	-	-	-	-	-	-	-	-	-	-
CO 2	2	3	3	1	-	-	-	-	-	-	-	-	-	2	-
CO 3	2	3	3	1	-	-	-	-	-	-	-	-	-	2	-
CO 4	2	3	3	1	-	-	-	-	-	-	-	-	-	1	-
CO 5	3	3	3	1	-	-	-	-	-	-	-	-	-	1	-

1 - Slightly, 2 - Moderately, 3 - Substantially

List of Experiments:
1. Using if and Switch Constructs Programs.
2. Demonstration of Looping Statements Problems.
3. Demonstration of Functions and Recursive Programs.
4. Demonstration of Structures and Union Programs.
5. Demonstration of Command line arguments.
6. Demonstration of Pointers and Arrays Programs.
7. Implementation of Stacks and Queues.
8. Implementation of Linked List Programs: Single , Double and Circular Linked List
9. Implementation of Trees: Tree operations and its traversals.
10. Implementation of Graph traversals- DFS and BFS.

TEXT BOOKS:
1. Pradip Dey and Manas Ghosh, "Programming in C", 2nd Edition, Oxford University Press 2011.
2. E. Bala Guruswamy, "C and Data Structures", 4th Edition, Tata Mc Graw Hill.
3. A.K. Sharma, "Computer Fundamentals and Programming in C", University Press, 2nd Edition.

SUGGESTED READING:
1. M.T. Somashekara, "Problem Solving Using C", 2nd Edition, PHI 2009 Pearson, 2013.
2. Kamala Krithivasan, Rama R. "Introduction to Automata Theory, and Computation", Pearson 2009.

NPTEL Courses:

S.No.	NPTEL Course Name	Instructor	Host Institute
1	Programming and Data Structure, https://nptel.ac.in/courses/106105085	Dr. P.P. Chakraborty	IIT Kharagpur
2	Programming, Data Structures and Algorithms using C https://archive.nptel.ac.in/courses/106/106/106106127	Prof. Shankar Balachandran	IIT, Madras

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CHAITANYA BHARATHI INSTITUTE OF TECHNOLOGY (A)

DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

(Inline with AICTE Model Curriculum with effect from AY 2025-26)(R22A)

SEMESTER – IV

S. No	Course Code	Title of the Course	Scheme of Instruction			Scheme of Examination			Credits
			Hours per Week			Duration of SEE in Hours	Maximum Marks		
			L	T	P/D		CIE	SEE	
THEORY									
1	22EEC09	Electrical Machines-I	3	-	-	3	40	60	3
2	22EEC10	Power Systems I	3	-	-	3	40	60	3
3	22EEC11	Control Systems	3	-	-	3	40	60	3
4	22EEC12	Digital Electronics	3	-	-	3	40	60	3
5	22ITC24N	Data Structures using C	3	-	-	3	40	60	3
6	22EEM01	Universal Human Values- II: Understanding Harmony	-	1	-	-	50	-	1
PRACTICAL									
7	22EEC14	Electrical Machines-I Lab	-	-	3	3	50	50	1.5
8	22EEC15	Control Systems Lab	-	-	3	3	50	50	1.5
9	22EEC16	Digital Electronics Lab	-	-	3	3	50	50	1.5
10	22ITC25N	Data Structures using C Lab	-	-	2	3	50	50	1
11	22EEU01	Up-skilling Certification Course-I	-	-	-	-	25	-	0.5
Total			**15**	**1**	**11**	-	**475**	**500**	**22**
Clock Hours Per Week: 25									

L: Lecture **D:** Drawing **CIE:** Continuous Internal Evaluation
T: Tutorial **P:** Practical/ Project Seminar/ Dissertation **SEE:** Semester End Examination

22ITC24N

DATA STRUCTURES USING C

Instruction	3L Hours per week
Duration of SEE	3 Hours
SEE	60 Marks
CIE	40 Marks
Credits	3

Prerequisites: Problem Solving and Programming, Problem Solving and Programming Laboratory.

COURSE OBJECTIVES: This course aims to
1. Discuss the basics of C Programming.
2. Learn the usage of functions, arrays, pointers, and structures.
3. Familiarise with the concepts of Functions, Arrays, Pointers and Structures.
4. Introduce Stack, Queue and Linked lists data structures.
5. Explain the concepts of non-linear data structures like graphs and trees.

COURSE OUTCOMES: After the completion of this course, the student will be able to
1. Understand the basic concepts of C Programming language.
2. Understand the usage of functions, arrays, pointers, and structures.
3. Apply the concepts of Stacks and Queues in solving the problems.
4. Demonstrate the standard operations on Linked lists.
5. Explain tree traversals and graph traversal techniques.

CO-PO Articulation Matrix

PO/PSO CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
CO 1	2	1	1	-	-	-	-	-	-	-	-	1			
CO 2	2	1	1	-	-	-	-	-	-	-	-	1			
CO 3	2	2	2	-	-	-	-	-	-	-	-	1			
CO 4	2	2	2	-	-	-	-	-	-	-	-	1			
CO 5	2	2	2	-	-	-	-	-	-	-	-	1			

1 - Slightly, 2 - Moderately, 3 - Substantially

UNIT -I
Introduction to C Language: C language elements, variable declarations and data types, operators and expressions, decision statements – If and switch statements, loop control statements – while, for, do-while statements, arrays.

UNIT -II
Functions: Types of functions, Recursion and argument passing, pointers, storage allocation, pointers to functions, expressions involving pointers, Storage classes – auto, register, static, extern, Structures, Unions, and Command line arguments.

UNIT -III
Basics: Algorithm specification, Data Abstraction, Performance Analysis
Stacks and Queues: Stack ADT, Queue ADT, Mazing Problem, Evaluation of Expressions

UNIT -IV
Lists: Singly Linked Lists, Dynamically Linked Stacks and Queues, Polynomials, Additional List Operations, Doubly Linked Lists
Hashing: Static Hashing

UNIT -V
Trees: Introduction, Binary Trees, Binary Tree Traversals, Heaps, Binary Search Trees
Graphs: Graph ADT, Elementary Graph Operations, Minimum Cost Spanning Trees.

TEXT BOOKS:

1. Pradip Dey and Manas Ghosh, "Programming in C", 2nd Edition, Oxford University Press 2011.
2. Ellis Horowitz, Sartaj Sahni, Susan, "Fundamentals of Data Structures in C", Computer Science, 1993.

SUGGESTED READING:

1. A.K. Sharma, "Computer Fundamentals and Programming in C", University Press, 2nd Edition.
2. M.T. Somashekara, "Problem Solving Using C", 2nd Edition, PHI 2009 Pearson, 2013.
3. E. Balaguruswamy, "C and Data Structures", 4th Edition, Tata McGraw Hill.

NPTEL Courses:

S. No.	NPTEL Course Name	Instructor	Host Institute
1	Programming and Data Structure, https://nptel.ac.in/courses/106105085	Dr. P.P. Chakraborty	IIT, Kharagpur
2	Programming, Data Structures and Algorithms using C https://archive.nptel.ac.in/courses/106/106/106106127	Prof. Shankar Balachandran	IIT, Madras

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22ITC25N

DATA STRUCTURES USING C LAB

Instruction	2P Hours per week
Duration of SEE	3 Hours
SEE	50 Marks
CIE	50 Marks
Credits	1

Prerequisites: Problem Solving and Programming, Problem Solving and Programming Laboratory.

COURSE OBJECTIVES: This course aims to
1. Acquaint with the IDLE and execution process of C Programs
2. Learn the concepts of decision structures and Iteration structures in C
3. Introduce Functions, Arrays, Pointers and Structures.
4. Explore linear data structures such as Stack, Queue and Linked lists.
5. Explain C programs to implement Trees and Graphs

COURSE OUTCOMES: After the completion of this course, the student will be able to
1. Understand the execution of programs written in C language
2. Illustrate decision and iterative structures.
3. Demonstrate the concepts of functions, arrays, structures and pointers.
4. Implement basic operations on linked lists, stacks, queues
5. Construct Trees, graphs and implement traversals.

CO-PO Articulation Matrix

PO/PSO CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
CO 1	2	2	1	-	-	-	-	-	-	-	-	1			
CO 2	2	2	1	-	-	-	-	-	-	-	-	1			
CO 3	2	2	2	-	-	-	-	-	-	-	-	1			
CO 4	2	2	2	-	-	-	-	-	-	-	-	1			
CO 5	2	2	2	-	-	-	-	-	-	-	-	1			

1 - Slightly, 2 - Moderately, 3 - Substantially

LIST OF EXPERIMENTS:
1. Using if and Switch Constructs Programs.
2. Demonstration of Looping Statements Problems.
3. Demonstration of Iterative and recursive Functions.
4. Demonstration of Structures and Union Programs.
5. Demonstration of Pointers and Arrays Programs.
6. Implementation of Stacks, Queues and standard operations.
7. Implementation of Single Linked Lists and standard operations
8. Implementation of Double Linked Lists and standard operations.
9. Construct a Binary Search Tree and implement tree traversals
10. Represent Graph and implement DFS and BFS traversals.

TEXT BOOKS:
1. Pradip Dey and Manas Ghosh, "Programming in C", 2nd Edition, Oxford University Press 2011.
2. Ellis Horowitz, Sartaj Sahni, Susan, "Fundamentals of Data Structures in C", Computer Science, 1993

SUGGESTED READING:
1. M.T. Somashekara, "Problem Solving Using C", 2nd Edition, PHI 2009 Pearson, 2013.
2. A.K. Sharma, "Computer Fundamentals and Programming in C", University Press, 2nd Edition.
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2	Programming, Data Structures and Algorithms using C https://archive.nptel.ac.in/courses/106/106/106106127	Prof. Shankar Balachandran	IIT, Madras

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DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

(Inline with AICTE Model Curriculum with effect from AY 2022-23)

SEMESTER – IV

S. No	Course Code	Title of the Course	Scheme of Instruction			Scheme of Examination			Credits
			Hours per Week			Duration of SEE in Hours	Maximum Marks		
			L	T	P/D		CIE	SEE	
THEORY									
1	22EEC09	Electrical Machines-I	3	-	-	3	40	60	3
2	22EEC10	Power Systems I	3	-	-	3	40	60	3
3	22EEC11	Control Systems	3	-	-	3	40	60	3
4	22EEC12	Digital Electronics	3	-	-	3	40	60	3
5	22EEC13	Signals and Systems	3	-	-	3	40	60	3
6	22EEM01	Universal Human Values-II: Understanding Harmony		1	-	-	50	-	1
PRACTICAL									
7	22EEC14	Electrical Machines-I Lab	-	-	3	3	50	50	1.5
8	22EEC15	Control Systems Lab	-	-	3	3	50	50	1.5
9	22EEC16	Digital Electronics Lab	-	-	3	3	50	50	1.5
10	22EEU01	Up-skilling Certification Course-I	-	-	60*	-	25	-	0.5
Total			**16**	**-**	**9**	**-**	**425**	**450**	**21**
Clock Hours Per Week: 25									

L: Lecture **D: Drawing** **CIE: Continuous Internal Evaluation**

T:Tutorial **P: Practical/Project Seminar/Dissertation** **SEE: Semester End Examination**

* Shall not be consider in regular teaching hours as it belongs to the course held during winter break.

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DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

(Inline with AICTE Model Curriculum with effect from AY 2025-26)(R22A)

SEMESTER – III

S. No	Course Code	Title of the Course	Scheme of Instruction			Scheme of Examination			Credits
			Hours per Week			Duration of SEE in Hours	Maximum Marks		
			L	T	P/D		CIE	SEE	
THEORY									
1	22MTC09	Applied Mathematics	3	1	-	3	40	60	4
2	22EEC13	Signals and Systems	3	-	-	3	40	60	3
3	22EEC03	Electrical Circuit Analysis	3	-	-	3	40	60	3
4	22EEC04	Electromagnetic Fields	3	-	-	3	40	60	3
5	22EEC05	Electrical Measurements and Instrumentation	3	-	-	3	40	60	3
6	22EEC06	Analog Electronic Circuits	3	-	-	3	40	60	3
7	22CEM01	Environmental Science	2	-	-	2	-	50	Non Credit
PRACTICAL									
8	22EEC07	Electrical Circuits and Measurements Lab	-	-	3	3	50	50	1.5
9	22EEC08	Analog Electronic Circuits Lab	-	-	3	3	50	50	1.5
10	22EEI01	MOOCs/Training/ Internship	3-4 weeks/90 hours				50	-	2
		Total	**20**	**1**	**6**	**-**	**390**	**510**	**24**
Clock Hours Per Week: 27									

L: Lecture **D:** Drawing **CIE:** Continuous Internal Evaluation
T:Tutorial **P:** Practical/ Project Seminar/ Dissertation **SEE:** Semester End Examination

With effect from the Academic Year 2024-25

CHAITANYA BHARATHI INSTITUTE OF TECHNOLOGY (A)

Scheme of Instructions of VII Semester of B.E. – Electrical & Electronics Engineering as per AICTE Model Curriculum 2023-24

DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

SEMESTER-VII

S. No	Course Code	Title of the Course	Scheme of Instruction			Scheme of Examination			Credits
			Hours per week			Duration of SEE in Hours	Maximum Marks		
			L	T	P		CIE	SEE	
THEORY									
1	20EE Exx	PE-4	3	0	0	3	40	60	3
2	20xx Oxx	OE-2	3	0	0	3	40	60	3
3	20xx Oxx	OE-3	3	0	0	3	40	60	3
4	20EG M04	Gender Sensitization	2	0	0	-	----	-	NC
5	20MB C01	Engineering Economics & Accountancy	3	0	0	3	40	60	3
PRACTICALS									
6	20 EE C32	Project –Part-1	0	0	4	--	50	--	2
7	20 EE I03	Internship-III	4-6 weeks/ upto135 Hours						3
			14	**0**	**4**	**-**	**210**	**240**	**17**

L: Lecture **T: Tutorial** **P: Practical**

CIE - Continuous Internal Evaluation **SEE - Semester End Examination**

Program Elective-4	
Course Code	**Name of the subject**
20 EE E41	Real-Time Control of Power System
20 EE E42	HVDC Transmission Systems
20 EE E43	AI Techniques in Electrical Engineering
20 EE E44	Digital Control Systems
20 EE E45	Machine Modelling and Analysis
20EE E46	Advanced microprocessors and controllers

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With effect from the Academic Year 2023-24

20EE I03

INTERNSHIP

(Semester-VII)

Instruction	5-6 Weeks/135 Hours
Duration of SEE	--
SEE	--
CIE	50 Marks
Credits	3

Prerequisite: Knowledge of Basic Sciences and Engineering Sciences

Course Objectives: This course aims to:

1. Exposing the students to the industrial environment
2. Create awareness with the current industrial technological developments relevant to program domain
3. Provide opportunity to understand the social, economic and administrative considerations in organizations

Course Outcomes : After completion of this course, students will be able to:

1. Understand Engineer's responsibilities and ethics
2. Use various materials, processes, products and quality control
3. Provide innovative solutions to solve real world problems
4. Acquire knowledge in technical reports writing and presentation
5. Apply technical knowledge to real world industrial situations

For implementation procedures and letter formats, annexure I and III of Internship document may be referred.

Evaluation of Internship: The industrial training/internship of the students will be evaluated in three stages:

a) Evaluation by the Industry(in the scale of 1 to 10 where 1-Unsatisfactory; 10-Excellent)
b) Evaluation by faculty Mentor on the basis of site visit(s) or periodic communication (15 marks)
c) Evaluation through seminar presentation/Viva-Voce at the Institute by the constituted committee (25 marks)

Evaluation through Seminar presentation/Viva-Voce at the institute: Students shall give a seminar before an Expert Committee constituted by college (Director, HoD/Senior faculty, mentor and faculty expert from the same department) based on his/her training/internship carried out

. The evaluation will be based on the following criteria:

- Quality of content presented
- Proper planning for presentation
- Effectiveness of presentation
- Depth of knowledge and skills
- Attendance record, daily diary, departmental reports shall be analyzed along with the internship Report

Monitoring/ Surprise Visits: During the internship program, the faculty mentor makes a surprise visit to the internship site, to check the student's presence physically. If the student is found to be absent without prior intimation to the concerned industry, entire training/internship may be canceled. Students should inform through email to the faculty mentor as well as the industry supervisor at least one day prior to avail leave.

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CO-PO & PSO Correlation Articulation Matrix

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	-	-	-	-	-	3	3	-	3	-	3	3
CO2	1	1	1	3	3	-	2	1	-	-	-	-
CO3	2	3	3	3	3	2	3	1	1	-	-	-
CO4	-	-	-	-	-	3	-	1	3	3	-	1
CO5	1	3	3	3	3	2	3	-	1	-	-	1

"A parent's job isn't to preventtheir children from failing, but to pick themup when they do."

-Aaron DeCa

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CHAITANYA BHARATHI INSTITUTE OF TECHNOLOGY (A)

DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

(Inline with AICTE Model Curriculum with effect from AY 2024-25)

SEMESTER – VI

S.No	Course Code	Title of the Course	Scheme of Instruction			Scheme of Examination			Credits
			Hours per Week			Duration of SEE in Hours	Maximum Marks		
			L	T	P/D		CIE	SEE	
THEORY									
1	22EEC24	Power System Protection	3	-	-	3	40	60	3
2	22EEC25	Power System Operation and Control	3	-	-	3	40	60	3
3	22EEC26	Electrical Drives	3	-	-	3	40	60	3
4	22EEExx	**PE-2**	3	-	-	3	40	60	3
5	22EEExx	**PE- 3**	3	-	-	3	40	60	3
6	22EGM01	Indian Constitution and Fundamental Principles	2	-	-	-	-	50	Non Credit
PRACTICAL									
7	22EEC27	Power Systems Lab	-	-	3	3	50	50	1.5
8	22EEC28	Electrical Drives Lab	-	-	3	3	50	50	1.5
9	22EEExx	**PE-2 Lab**	-	-	2	3	50	50	1
10	22EEC33	Mini Project	-	-	4	-	50	-	2
11	22EEU02	Up-skilling Certification Course-II	-	-	-	-	25	-	0.5
Total			**17**	-	**12**	-	**425**	**500**	**21.5**
Clock Hours Per Week: 29									

L:Lecture D: Drawing
T:Tutorial P: Practical/Project Seminar/Dissertation

CIE: Continuous Internal Evaluation
SEE: Semester End Examination

* Shall not be consider in regular teaching hours as it belongs to the course held during winter break.

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22EEC33

MINI PROJECT

Instruction	4 P Hours per week
CIE	50 Marks
Credits	2

Prerequisites:

- Completion of relevant coursework in electrical and electronics engineering.
- Proficiency in programming languages (e.g., C/C++, Python, MATLAB) and software tools for circuit design and simulation.

COURSE OBJECTIVES: This course aims to

1. Provide students with hands-on experience in designing, implementing, and testing small-scale electrical and electronics projects.
2. Apply theoretical knowledge gained in previous semesters to practical engineering problems.

COURSE OUTCOMES: After the completion of this course, the student will be able to

1. Develop practical skills in electrical and electronics engineering.
2. Enhance problem-solving abilities through project-based learning.
3. Foster creativity and innovation in designing electrical and electronics systems.
4. Encourage teamwork and collaboration in project development.

1. PROJECT SELECTION AND PROPOSAL:

- Ensure that your selection criteria cover aspects like feasibility, relevance, impact, and alignment with your objectives.
- Clearly define your project proposal with SMART (Specific, Measurable, Achievable, Relevant, Time-bound) objectives, methodology, and expected outcomes.
- Present your proposal effectively, highlighting the significance and potential of your project.

2. LITERATURE REVIEW:

- Conduct a comprehensive review of literature, patents, and existing solutions relevant to your project topic.
- Analyze and critically evaluate existing methodologies and technologies Identify gaps or areas for improvement.

3. DESIGN AND PLANNING:

- Develop a detailed conceptual design and system architecture, considering factors like scalability, flexibility, and compatibility.
- Thoroughly research and select components based on performance, availability, and cost-effectiveness.
- Create a comprehensive project plan with clear milestones, schedules, and resource allocation.

4. IMPLEMENTATION:

- Utilize appropriate software tools for circuit design and simulation, ensuring accuracy and reliability.
- If applicable, design a PCB layout efficiently, considering factors like signal integrity and manufacturability.
- Prototype and construct your project meticulously, following best practices and safety guidelines.

5. TESTING AND EVALUATION:

- Conduct rigorous testing to verify and validate the functionality of your project under various conditions.
- Analyze test results systematically, comparing them with expected outcomes and identifying any discrepancies or areas for improvement.

6. DOCUMENTATION AND REPORTING:

- Prepare detailed documentation including design specifications, schematics, and user manuals to facilitate understanding and replication of your project.
- Write a comprehensive final project report, summarizing key findings, challenges, and lessons learned throughout the project.
- Deliver a polished presentation to effectively communicate your project's objectives, methodologies, results, and implications to your audience.

ASSESSMENT:

- Project Proposal: 10%
- Literature Review: 15%
- Design and Planning: 20%
- Implementation: 25%
- Testing and Evaluation: 15%
- Documentation and Reporting: 15%

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DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

(Inline with AICTE Model Curriculum with effect from AY 2025-26)(R22A)

SEMESTER – IV

S. No	Course Code	Title of the Course	Scheme of Instruction			Scheme of Examination			Credits
			Hours per Week			Duration of SEE in Hours	Maximum Marks		
			L	T	P/D		CIE	SEE	
THEORY									
1	22EEC09	Electrical Machines-I	3	-	-	3	40	60	3
2	22EEC10	Power Systems I	3	-	-	3	40	60	3
3	22EEC11	Control Systems	3	-	-	3	40	60	3
4	22EEC12	Digital Electronics	3	-	-	3	40	60	3
5	22ITC24N	Data Structures using C	3	-	-	3	40	60	3
6	22EEM01	Universal Human Values- II: Understanding Harmony	-	1	-	-	50	-	1
PRACTICAL									
7	22EEC14	Electrical Machines-I Lab	-	-	3	3	50	50	1.5
8	22EEC15	Control Systems Lab	-	-	3	3	50	50	1.5
9	22EEC16	Digital Electronics Lab	-	-	3	3	50	50	1.5
10	22ITC25N	Data Structures using C Lab	-	-	2	3	50	50	1
11	22EEU01	Up-skilling Certification Course-I	-	-	-	-	25	-	0.5
Total			**15**	**1**	**11**	-	**475**	**500**	**22**
Clock Hours Per Week: 25									

L: Lecture **D:** Drawing **CIE:** Continuous Internal Evaluation
T: Tutorial **P:** Practical/ Project Seminar/ Dissertation **SEE:** Semester End Examination

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CHAITANYA BHARATHI INSTITUTE OF TECHNOLOGY (A)

DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

(Inline with AICTE Model Curriculum with effect from AY 2024-25)

SEMESTER – VI

S.No	Course Code	Title of the Course	Scheme of Instruction			Scheme of Examination			Credits
			Hours per Week			Duration of SEE in Hours	Maximum Marks		
			L	T	P/D		CIE	SEE	
THEORY									
1	22EEC24	Power System Protection	3	-	-	3	40	60	3
2	22EEC25	Power System Operation and Control	3	-	-	3	40	60	3
3	22EEC26	Electrical Drives	3	-	-	3	40	60	3
4	22EEExx	**PE-2**	3	-	-	3	40	60	3
5	22EEExx	**PE- 3**	3	-	-	3	40	60	3
6	22EGM01	Indian Constitution and Fundamental Principles	2	-	-	-	-	50	Non Credit
PRACTICAL									
7	22EEC27	Power Systems Lab	-	-	3	3	50	50	1.5
8	22EEC28	Electrical Drives Lab	-	-	3	3	50	50	1.5
9	22EEExx	**PE-2 Lab**	-	-	2	3	50	50	1
10	22EEC33	Mini Project	-	-	4	-	50	-	2
11	22EEU02	Up-skilling Certification Course-II	-	-	-	-	25	-	0.5
Total			**17**	**-**	**12**	-	**425**	**500**	**21.5**
Clock Hours Per Week: 29									

L:Lecture D: Drawing **CIE: Continuous Internal Evaluation**

T:Tutorial P: Practical/Project Seminar/Dissertation **SEE: Semester End Examination**

* Shall not be consider in regular teaching hours as it belongs to the course held during winter break.

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SCHEME OF INSTRUCTION AND EXAMINATION

OF

MODEL CURRICULUM (R-20)

I-Semester of ME (PS & PE)

S.No	Course Code	Title of the Course	Scheme of Instruction			Scheme of Examination			Credits
			Hours per week			Duration of SEE in Hours	Maximum Marks		
			L	T	P		CIE	SEE	
THEORY									
1	20EEC101	Real Time Applications for Power Systems	3	-	-	3	40	60	3
2	20EEC102	Power Electronic Converters	3	-	-	3	40	60	3
3	20EEE10X	Program Specific Elective- I	3	-	-	3	40	60	3
4	20EEE10X	Program Specific Elective- II	3	-	-	3	40	60	3
5	20MEC103	Research Methodology and IPR	2	-	-	2	40	60	2
6	AC-1	Audit Course-I	2	-	-	2	0	50	Non-Credit
PRACTICALS									
7	20EEC103	Power Systems Lab	-	-	4	-	50	-	2
8	20EEC104	Power Electronics Simulation Lab	-	-	4	-	50	-	2
TOTAL			16	-	8	-	300	350	18

L: Lecture T: Tutorial P:Practical SEE - Semester End Examination

CIE - Continuous Internal Evaluation

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In line with AICTE Model Curriculum with effect from AY 2023-24

M.E (Power Systems and Power Electronics)

SEMESTER–I

S.no	Course Code	Title of the Course	Scheme of Instruction			Scheme of Examination			Credits
			Hours Per Week			Duration of SEE in Hours	Maximum Marks		
			L	T	P/D		CIE	SEE	
THEORY									
1	23EEC101	Real-Time Control of Power Systems	3	-	-	3	40	60	3
2	23EEC102	Analysis of Power Converters	3	-	-	3	40	60	3
3	23EEE1XX	Program Elective-I	3	-	-	3	40	60	3
4	23EEE1XX	Program Elective-II	3	-	-	3	40	60	3
5	23MEM103	Research Methodology and IPR	2	-	-	3	40	60	2
6	AC-I	Audit Course-I	2	-	-	2		50	NC
PRACTICALS									
7	23EEC103	Advanced Power System Lab	-	-	3	-	50	–	1.5
8	23EEC104	Advanced Power Electronic Circuits and Drives Lab	-	-	3	-	50	–	1.5
Total			**16**	**-**	**6**	**17**	**300**	**350**	**17**
Clock Hours Per Week: 22									

L: Lecture D: Drawing CIE: Continuous Internal Evaluation T: Tutorial P: Practical/Project Seminar/Dissertation SEE: Semester End Examination

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SCHEME OF INSTRUCTION AND EXAMINATION

OF

MODEL CURRICULUM (R-20)

II- Semester of ME (PS & PE)

S.No	Course Code	Title of the Course	Scheme of Instruction			Scheme of Examination			Credits
			Hours per week			Duration of SEE in Hours	Maximum Marks		
			L	T	P		CIE	SEE	
THEORY									
1	20EEC105	Power System Dynamics	3	-	-	3	40	60	3
2	20EEC106	Advanced Power Electronic Circuits	3	-	-	3	40	60	3
3	20EEE10X	Program Specific Elective-III	3	-	-	3	40	60	3
4	20EEE10X	Program Specific Elective-IV	3	-	-	3	40	60	3
5	AC-II	Audit Course-II	2	-	-	2	0	50	Non-Credit
PRACTICALS									
6	20EEC107	Power Electronics Lab	-	-	4	-	50	-	2
7	20EEC108	Power Systems Simulation Lab	-	-	4	-	50	-	2
8	20EEC109	Mini Project with Seminar	-	-	4	-	50	-	2
		TOTAL	14	0	12	-	310	290	18

L: Lecture T: Tutorial P: Practical SEE - Semester End Examination
CIE- Continuous Internal Evaluation

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In line with AICTE Model Curriculum with effect from AY 2023-24

M.E (Power Systems and Power Electronics)

SEMESTER–II

S.no	Course Code	Title of the Course	Scheme of Instruction			Scheme of Examination			Credits
			Hours Per Week			Duration of SEE in Hours	Maximum Marks		
			L	T	P/D		CIE	SEE	
THEORY									
1	23EEC105	Advanced Computational Methods in Power Systems	3	-	-	3	40	60	3
2	23EEC106	Power Converters and Control Techniques for Microgrids	3	-	-	3	40	60	3
3	23EEC107	Data Science Applications in Power Engineering	3	-	-	3	40	60	3
4	23EEE1XX	Program Elective-III	3	-	-	3	40	60	3
5	23EEE1XX	Program Elective-IV	3	-	-	3	40	60	3
PRACTICALS									
6	23EEC108	Power Systems Computational Lab	-	-	3	-	50	-	1.5
7	23EEC109	Data Science Applications Lab	-	-	3	-	50	-	1.5
8	23EEC110	Mini Project	-	-	2	-	50	-	1
Total			**15**	**-**	**8**	**15**	**350**	**300**	**19**
Clock Hours Per Week: 23									

L: Lecture D: Drawing CIE: Continuous Internal Evaluation T: Tutorial P:

Practical/Project Seminar/Dissertation SEE: Semester End Examination

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SCHEME OF INSTRUCTION AND EXAMINATION

OF

MODEL CURRICULUM (R-20)

III- Semester of ME (PS & PE)

S.No	Course Code	Title of the Course	Scheme of Instruction			Scheme of Examination			Credits
			Hours per week			Duration of SEE in Hours	Maximum Marks		
			L	T	P		CIE	SEE	
THEORY									
1	20EEE10X	Program Specific Elective- V	3	-	-	3	40	60	3
2	OE	Open Elective	3	-	-	3	40	60	3
PRACTICALS									
3	20EEC110	Industrial Project /Dissertation Phase 1		-	20	Viva	100	-	**10**
TOTAL			**6**	**0**	**20**	-	**180**	**120**	**16**

L: Lecture T: Tutorial P: Practical SEE - Semester End Examination
CIE - Continuous Internal Evaluation

SCHEME OF INSTRUCTION AND EXAMINATION

OF

MODEL CURRICULUM (R-20)

IV- Semester of ME (PS & PE)

S.No	Course Code	Title of the Course	Scheme of Instruction			Scheme of Examination		Credits
			Hours per week			Maximum Marks		
			L	T	P	CIE	SEE	
PRACTICALS								
1	20EEC111	Industrial Project /Dissertation Phase II	-	-	32	100	100	16
TOTAL			**0**	**0**	**32**	**100**	**100**	**16**

L: Lecture T: Tutorial P: Practical SEE - Semester End Examination
CIE Continuous Internal Evaluation

List of Program Specific Electives/ Open Electives/ Audit Courses

Course Code	Program Specific Electives Group-1
20EEE101	Electrical Power Distribution System
20EEE102	Mathematical Methods for Power Engineering
20EEE103	Restructured Power Systems
20EEE107	Renewable Energy System
20EEE109	Digital Protection of Power System
20EEE110	Power Quality
20EEE114	Smart Grids
20EEE115	High Voltage Engineering

Course Code	Program Specific Electives Group-2
20EEE104	Power Semi Conductor devices & Modelling
20EEE105	Electric Drive Systems
20EEE106	HVDC
20EEE108	Artificial Intelligence Techniques for Power Systems
20EEE111	FACTS and Custom power devices
20EEE112	Switch mode & Resonant Converters
20EEE113	Energy Auditing & Management
20EEE116	Electric and Hybrid Vehicles

Course Code	Open Electives
20CSO 101	Business Analytics
20MEO101	Industrial Safety
20MEO 102	Introduction to Optimization Techniques
20MEO 103	Composite Materials
20CEO 101	Cost Management of Engineering Projects
20EEO 101	Waste to Energy

Course Code	Audit Courses – I & II
20EGA 101	English for Research Paper Writing
20EGA 102	Indian Constitution and Fundamental Rights
20EGA 103	Stress Management by Yoga
20EGA 104	Personality Development through Life Enlightenment Skills
20ECA 101	Value Education
20CEA 101	Disaster Mitigation and Management
20ITA 101	Pedagogy Studies
20EEA 101	Sanskrit for Technical Knowledge

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M.E (Power Systems and Power Electronics)

SEMESTER–III

S.no	Course Code	Title of the Course	Scheme of Instruction			Scheme of Examination			Credits
			Hours Per Week			Duration of SEE in Hours	Maximum Marks		
			L	T	P/D		CIE	SEE	
THEORY									
1	23EEE1XX	Program Elective-V	3	-	-	3	40	60	3
2	OE	Open Elective	3	-	-	3	40	60	3
3	AC-II	Audit Course-II	2	-	-	2	-	50	NC
4	23EEC111	Industrial Project /Dissertation Phase I	-	-	20	-	100	-	10
Total			**8**	**-**	**20**	**8**	**180**	**170**	**16**
Clock Hours Per Week: 28									

L: Lecture D: Drawing CIE: Continuous Internal Evaluation T: Tutorial P: Practical/Project Seminar/Dissertation SEE: Semester End Examination

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List of Program Elective/Open Elective s/Audit Courses

Elective-I	
23EEE101	Restructured Power systems
23EEE102	Design of Power Electronic Converters
23EEE103	Signal Processing Techniques
23EEE104	Digital Control Systems
23EEE105	Smart Appliances and Internet of Things
Elective- II	
23EEE106	Smart Electrical Distribution System
23EEE107	Modeling and Analysis of Renewable Energy Sources
23EEE108	Advanced Electric Drives
23EEE109	Distribution System Planning and Automation
23EEE110	Machine Learning and Application
Elective-III	
23EEE111	Power Quality Improvement Techniques
23EEE112	High Power Inverters
23EEE113	Industrial and Strategic Applications of Superconductivity
23EEE114	Modern Control Theory
23EEE115	Smart Grid Technologies
Elective-IV	
23EEE116	Power System Dynamics
23EEE117	Power Electronics for Power systems
23EEE118	Control and Integration of Renewable Energy Sources
23EEE119	Microgrid Dynamics and Control
23EEE120	Evolutionary Algorithms Applications in Power Engineering
Elective-V	
23EEE121	Digital Protection of Power Systems
23EEE122	Advanced Control Techniques for Power Converters
23EEE123	Electric and Hybrid Vehicles
23EEE124	Wide Area Monitoring and Control
23EEE125	Energy Auditing and Management
Open Electives	
23CSO101	Business Analytics
23MEO101	Industrial Safety
23MEO102	Introduction to optimization Techniques
23MEO103	Composite Materials
23CEO101	Cost Management of Engineering Projects
Audit Courses	
23EGA101	English for Research Paper Writing
23EGA102	Constitution of India
23EGA103	Stress Management by Yoga
23EGA104	Personality Development through Life's Enlightenment Skills
23ECA101	Value Education
23CEA101	Disaster Mitigation and Management
23ADA101	Pedagogy Studies
23EEA101	Sanskrit for Technical Knowledge

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20EEC111 **INDUSTRIAL PROJECT / DISSERTATION PHASE- II**

Instruction	32 Hours per week
SEE	100 Marks
CIE	100 Marks
Credits	16

Course Objectives: At the end of the course:

1. Students will be able to use different experimental techniques and will be able to use different software/ computational/analytical tools.
2. Students will be able to design and develop an experimental set up/ equipment/test rig.
3. Students will be able to conduct tests on existing set ups/equipments and draw logical conclusions from the results after analyzing them.
4. Students will be able to either work in a research environment or in an industrial environment.
5. Students will be conversant with technical report writing and will be able to present and convince their topic of study to the engineering community.

Course Outcomes: On successful completion of the course students will be able to:

1. Contribute to Research and Development work.
2. Apply a holistic view to critically, independently and creatively to identify, formulate and deal with complex issues.
3. Evaluate critically different engineering/Technological solutions.
4. Integrate knowledge critically and systematically
5. Develop the ethical aspects of Research work.

Guidelines:

1. It is a continuation of Project work started in semester III.
2. The student has to submit the report in prescribed format and also present a seminar.
3. Develop strong communication skills to defend their work in front of technically qualified audience
4. The candidate has to prepare a detailed project report consisting of introduction of the problem, problem statement, literature review, objectives of the work, methodology (experimental set up or numerical details as the case may be) of solution and results and discussion.
5. The report must bring out the conclusions of the work and future scope for the study. The work has to be presented in front of the examiners panel consisting of an approved external examiner, an internal examiner (HoD and BoS Chair Person) guide/co-guide.
6. The candidate has to be in regular contact with his/her guide/co-guide.

Guidelines for awarding marks in CIE:		Max. Marks: 100
Evaluation by	**Max .Marks**	**Evaluation Criteria / Parameter**
Review Committee	05	Review 1
	10	Review 2
	10	Review 3
	15	Final presentation with the draft copy of the report standard format
	10	Submission of the report in a standard format
Supervisor	10	Regularity and Punctuality
	10	Work Progress
	10	Quality of the work which may lead to publications
	10	Analytical / Programming / Experimental Skills
	10	Report preparation in a standard format

Evaluation by	**Max .Marks**	**Evaluation Criteria / Parameter**
External and Internal	20	Power Point Presentation
	40	Quality of thesis and evaluation
Examiner(s) together	20	Quality of the project 1. Innovations 2. Applications 3. Live Research Projects 4. Scope for future study 5. Application to society
	20	Viva-Voce

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23EEC112

INDUSTRIAL PROJECT/DISSERTATION PHASE-2

Instruction	32 P Hours per Week
Duration of SEE	-
SEE	100 Marks
CIE	100 Marks
Credits	16

Prerequisite: Students should have successfully completed the Phase-1 and also acquired the skillset related Literature Review, Technical Writing and Project Management

COURSE OBJECTIVES: This course aims to

1. Provide students with advanced technical knowledge and skills in power systems and power electronics to undertake complex industrial projects.
2. Help students develop a deep understanding of industrial project management, including project planning, execution, and evaluation.
3. Develop students' research methodology skills and the ability to conduct independent research related to power systems and power electronics.

COURSE OUTCOMES: After the completion of this course, the student will be able to

1. Explore all the possible solutions to practical problems related to power systems and power electronics.
2. Design a given power system and power electronics circuits using appropriate software tools.
3. Identify right the industrial equipment and tools required for a given problem in the power systems and power electronics industry.
4. Familiar with the latest trends and technologies in the field of power systems and power electronics and with Industry standards, ethics, safety, and environmental issues
5. Develop Professionalism in Research report writing, attitude, behavior, and leadership,

CO-PO Articulation Matrix

PO CO	PO 1	PO 2	PO 3	PO 4
CO 1	3	3	2	2
CO 2	3	3	2	2
CO 3	3	3	3	3
CO 4	3	3	3	2
CO 5	3	3	3	3

1 - Slightly; 2 - Moderately; 3 - Substantially

Guidelines:

PART-A: The student should

1. Be punctual and regular in attending all project-related activities, including classes, laboratory sessions, and field visits. in the power systems and power electronics industry
2. Take initiative and be proactive in seeking guidance and support from their project guide /supervisor or mentor.
3. Develop good communication skills, including the ability express ideas clearly and concisely, and listen actively to feedback and suggestions.
4. Maintain a detailed record of project work, including laboratory notes, project reports, and presentations.
5. Conduct himself/herself in a professional manner, including adhering to ethical standards, respecting diversity and differences, and maintaining a positive attitude towards your work.

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PART-B: The student should

1. Know that Continuous Internal Evaluation (CIE) by the supervisor and Departmental committee is based on the following table.
2. Present the work carried by him/her with the Departmental committee which Consists of Head, Chairperson-BoS, Supervisor and Project Coordinator followed by External Examiner [depending upon the case]

Evaluation by	Max. Marks	Evaluation Criteria/Parameter
Department Review Committee	05	Review1
	10	Review2
	10	Submission
	15	Final presentation with the draft copy of report in standard format
	10	Submission of report in standard format
Supervisor	10	Regularity and Punctuality
	10	Work Progress
	10	Quality of the work which may lead publications
	10	Report Preparation
	10	Analytical / Programming/ Experimental Skills

Evaluation by	Max. Marks	Evaluation Criteria / Parameter
External and Internal Examiners together	20	Power Point Presentation
	30	Quality of Thesis Evaluation
	10	Publication/ Patent/Prototype/product
	20	Quality of the project • Innovations • Applications • Live Research Projects • Scope for future study • Application society
	20	Viva- Voce

HEAD
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