



GEMS POLYTECHNIC COLLEGE

(Approved by AICTE, Govt. of India, F. No Northern/2015/1-2474317051)

Affiliated to SBTE, Bihar.

NH-2, Jogiya more, Ratanpura, Aurangabad, Bihar- 824121

DEPARTMENT OF ELECTRICAL ENGINEERING



SELF ASSESSMENT REPORT (SAR)

Academic Year 2023-2024

Diploma Engineering Program

First Time Accreditation

Submitted to



NATIONAL BOARD OF ACCREDITATION

New Delhi

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Part A

Institutional Information

Institutional Information

1.	Name and Address of the Institution:	GEMS Polytechnic College, NH-2 Jogia more, Ratnapura, Aurangabad,Bihar-824121
2.	Name and Address of the Directorate of Technical Education:	State Board of Technical Education, 4th Floor, Technology Bhawan, Vishweshariya Bhawan Campus, Bailey Road, Patna - 800 015. Bihar.
3.	Year of Establishment:	2015
4.	Type of the Institution:	<ul style="list-style-type: none"> ● University ● Deemed University ● Affiliated ● Autonomous ● Any Other(Please Specify)
5.	Ownership Status:	<ul style="list-style-type: none"> ● Central Government ● State Government ● Government Aided ● Self-financing ● Trust ● Society ● Section 25 Company ● Any Other(Please Specify)

6. Other Academic Institutions of the Trust/Society/Company etc., if any:			
Name of Institutions	Year of Establishment	Programs of Study	Location
GEMS Industrial Training Institute	2001	Electrician, Fitter & Welder	Karwandiya, Rohtas, Bihar
GEMS Industrial Training Institute	2015	Electrician, Fitter & Welder	Bhagatganj, Bihar
GEMS Industrial Training Institute	2015	Electrician, Fitter & Welder	Madhubhani, Bihar
GEMS Girls Industrial Training Institute	2014	Draughtsman (Civil), Sewing	Sikaria, Bihar

7. Details of all the programs being offered by the institution under consideration:											
Name of Program	Program Applied level	Start of year	Year of AICTE approval	Initial Intake	Intake Increase	Current Intake	Accreditation status	From	To	Program for consideration	Program for Duration
DIPLOMA IN MECHANICAL ENGINEERING	Diploma	2015	2015	60	Yes	60	Applying first time	-	-	Yes	3
Sanctioned Intake for the Last Five Years for the DIPLOMA IN MECHANICAL ENGINEERING											
Academic Year						Sanctioned Intake					
2023 - 2024						60					
2022 - 2023						48					
2021 - 2022						48					
2020 - 2021						48					
2019 - 2020						48					
2018 - 2019						60					
2017 - 2018						60					

Name of Program	Program Applied level	Start of year	Year of AICTE approval	Initial Intake	Intake Increase	Current Intake	Accreditation status	From	To	Program for consideration	Program for Duration
DIPLOMA IN CIVIL ENGINEERING	Diploma	2015	2015	60	Yes	60	Applying first time	-	-	Yes	3

Sanctioned Intake for the Last Five Years for the DIPLOMA IN CIVIL ENGINEERING

Academic Year	Sanctioned Intake
2023 - 2024	60
2022 - 2023	48
2021 - 2022	48
2020 - 2021	48
2019 - 2020	48
2018 - 2019	60
2017 - 2018	60

Name of Program	Program Applied level	Start of year	Year of AICTE approval	Initial Intake	Intake Increase	Current Intake	Accreditation status	From	To	Program for consideration	Program for Duration
DIPLOMA IN ELECTRICAL ENGINEERING	Diploma	2015	2015	60	Yes	60	Applying first time	-	-	Yes	3

Sanctioned Intake for the Last Five Years for the DIPLOMA IN ELECTRICAL ENGINEERING

Academic Year	Sanctioned Intake
2023 - 2024	60
2022 - 2023	48
2021 - 2022	48
2020 - 2021	48
2019 - 2020	48
2018 - 2019	60
2017 - 2018	60

Name of Program	Program Applied level	Start of year	Year of AICTE approval	Initial Intake	Intake Increase	Current Intake	Accreditation status	From	To	Program for consideration	Program for Duration
DIPLOMA IN ELECTRICAL & ELECTRONICS ENGINEERING	Diploma	2015	2015	60	Yes	60	Applying first time	-	-	Yes	3

Sanctioned Intake for the Last Five Years for the DIPLOMA IN ELECTRICAL & ELECTRONICS ENGINEERING

Academic Year	Sanctioned Intake
2023 - 2024	60
2022 - 2023	48
2021 - 2022	48
2020 - 2021	48
2019 - 2020	48
2018 - 2019	60
2017 - 2018	60

Name of Program	Program Applied level	Start of year	Year of AICTE approval	Initial Intake	Intake Increase	Current Intake	Accreditation status	From	To	Program for consideration	Program for Duration
DIPLOMA IN COMPUTER SCIENCE & ENGINEERING	Diploma	2017	2017	60	Yes	60	Applying first time	-	-	Yes	3

Sanctioned Intake for the Last Five Years for the DIPLOMA IN COMPUTER SCIENCE & ENGINEERING

Academic Year	Sanctioned Intake
2023 - 2024	60
2022 - 2023	48
2021 - 2022	48
2020 - 2021	48
2019 - 2020	48
2018 - 2019	60
2017 - 2018	60

7a. Accreditation History:

Sr.No	Name of the Department	Name of the Program	Year of 1st Accreditation (if Applicable)	Year of 2nd Accreditation (if Applicable)	Year of 3rd Accreditation (if Applicable)
-	-	-	-	-	-

7b. Programs to be considered for Accreditation vide this application:

Sr.No	Level	Discipline	Program
1.	Diploma	Engineering & Technology	Civil Engg.
2.	Diploma	Engineering & Technology	Electrical Engg.
3.	Diploma	Engineering & Technology	Mechanical Engg.
4.	Diploma	Engineering & Technology	Computer Science & Engg.
5.	Diploma	Engineering & Technology	Electrical and Electronics Engineering

8. Total number of Employees:

A. Regular* Employees (Faculty and Staff):

Engineering and Technology- Diploma	Shift 1	Shift 2
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Engineering and Technology- Diploma Shift-1:

Engineering and Technology- Diploma Shift-1	2023-24		2022-23		2021-22		2020-21	
	Min	Max	Min	Max	Min	Max	Min	Max
Faculty in Engineering & Technology (Male)	27	27	31	31	28	28	26	26
Faculty in Engineering & Technology (Female)	11	11	7	7	8	8	4	4
Faculty in Science & Humanities (Male)	4	4	2	2	4	4	2	2
Faculty in Science & Humanities (Female)	-	-	2	2	2	2	2	2
Non-teaching staff (Male)	18	18	16	16	14	14	11	11
Non-teaching staff (Female)	3	3	7	7	3	3	2	2

B. Contractual Staff (Not Covered in 9. A):

Engineering and Technology- Diploma	Shift 1	Shift 2
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9. Total number of Students:

Engineering and Technology- Diploma	Shift 1	Shift 2
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Engineering and Technology- Diploma Shift-1:

Total number of Students:	2023-24	2022-23	2021-22	2020-21
Total no. of Boys	433	379	397	349
Total no. of Girls	105	110	110	89
Total no. of Students	538	489	507	438

10. Contact Information of the Head of the Institution and NBA Coordinator:

Head of the Institution	
Name:	Challa Rama Gopal
Designation:	Principal
Mobile No.:	8294268027
Email ID:	principal@gemspolytechnic.edu.in

NBA Coordinator, If Designated	
Name:	Titus R
Designation:	NBA Coordinator
Mobile No.:	9304706901
Email ID:	nba@gemspolytechnic.edu.in

Part B

Program Level Criteria

Criterion 1

Vision, Mission, Program Educational Objectives

1.1 State the Vision and Mission of the Department and Institution:

Vision of the institute	Empowering the young minds with holistic education and futuristic skills to be a valuable resource for the State and Nation
Mission of the institute	<ul style="list-style-type: none"> ● To provide professional education thereby producing technically competent engineers with moral and ethical values. ● To train students and provide them with leading resources to address problems faced by industry and society. ● To encourage doers to embrace learning and achieve their personal best in building their emotional, social and physical well-being
Vision of the Department	To Generate Competent Electrical Engineers by Imparting Quality Education with Skills and Creativity, inculcating Moral Values to contribute to Society.
Mission of the Department	<p>The Department of Electrical Engineering is committed,</p> <ul style="list-style-type: none"> ● To provide a strong foundation in Electrical Engineering for Understanding and solving the problems in the society and to promote long term learning. ● To equip the young generation in cutting edge tools and technology to develop solutions to meet industry- Specific needs. ● To create valuable human resources by implanting ethical values among students.

1.2 State the Program Educational Objectives (PEOs):

PEO's	Program Educational Objectives Statements
PEO 1	Generate an attitude of curiosity in young graduates in learning leading edge applied sciences like robotics and automation.
PEO 2	Raise a generation who are fully equipped in handling interdisciplinary projects which contribute to design and problem-solving.
PEO 3	Habituate practices of the profession with solid ethical values, and also raising socially responsible ownership in their endeavors.

1.3 Indicate where and how the Vision, Mission and PEOs are published and disseminated among stakeholders:

The Vision, Mission, and PEOs have been effectively communicated through various channels, as outlined below:

Publication Channels:

1. Official College Website: <https://gemspolytechnic.edu.in/>
2. Dedicated Department Web page on the College Website:
<https://gemspolytechnic.edu.in/Electrical-engineering/>
3. Department Brochure
4. Department Newsletter
5. Laboratory Manuals
6. Student Orientation Programs
7. Department Association Activities
8. Course Files
9. Lab Record Copy

Dissemination Points:

1. Faculty and Staff Rooms
2. Department Corridors
3. Classroom Environments
4. Laboratories
5. Departmental Notice Board

1.4 State the process for defining the Vision and Mission of the Department, and PEOs of the program:

The process for defining the Vision and Mission of the Department and PEOs of the program:

Initial Input Gathering

The starting point is to consider the Vision and Mission statements of the institute as the primary input.

Stakeholder Involvement

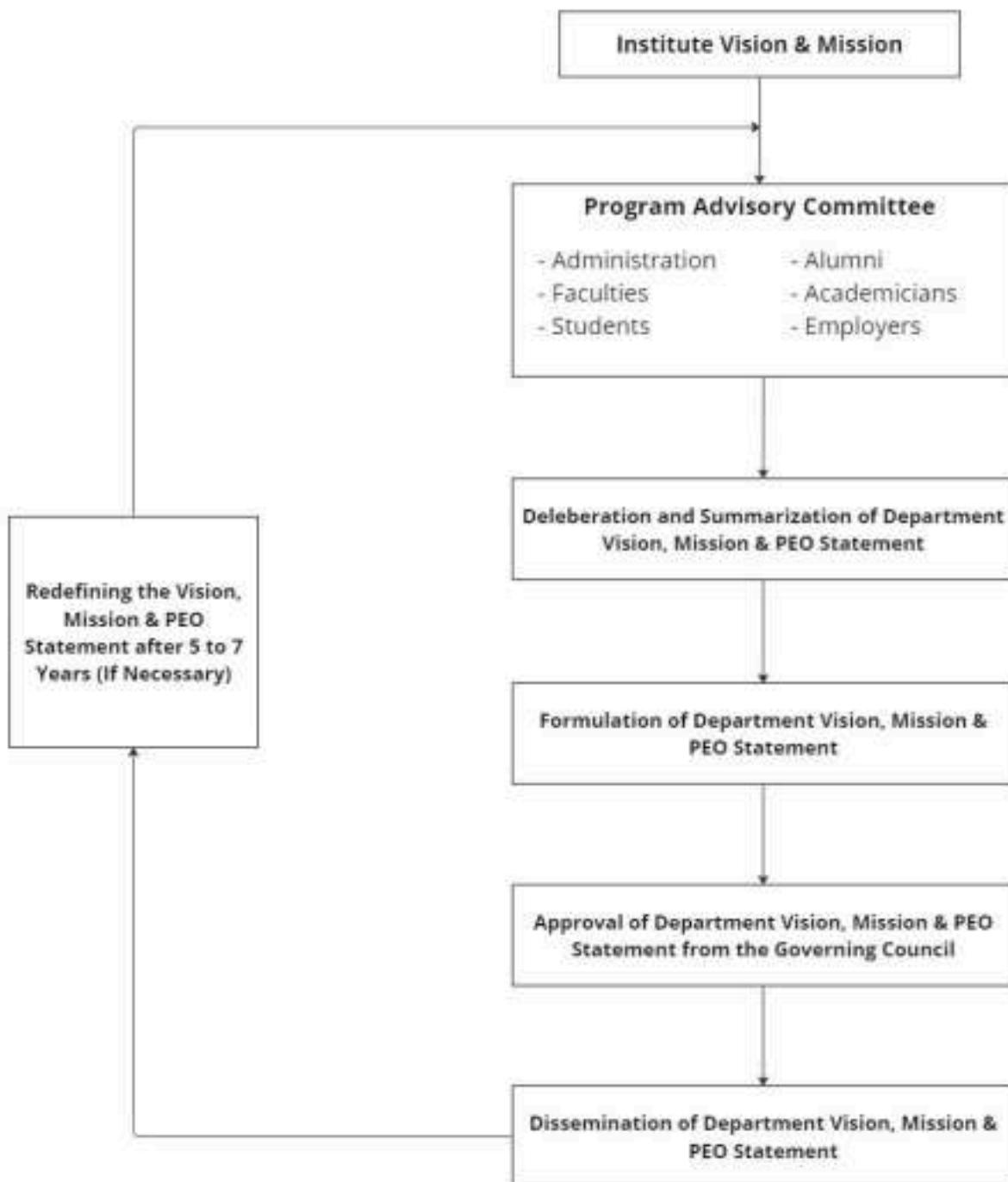
- Inputs are gathered from a range of stakeholders, both internal and external.
- This includes input from internal stakeholders such as management, faculty, and students, as well as external stakeholders like alumni, academicians, and employers.

Deliberation and Summarization:

The next step involves careful deliberation and summarization of the departments Vision, Mission, and Program Educational Objectives (PEOs). This is based on the valuable input received from stakeholders, and this process takes place during Program Advisory Committee (PAC) meetings.

Finalization and Approval:

Once the departments Vision, Mission, and PEOs have been refined based on stakeholder input, they are finalized. These final statements are then presented for approval by the Principal. After approval, the departments Vision and Mission and PEOs are disseminated to all relevant stakeholders.



PEO Mapping with Mission	Justification
<p>PEO1 Statement is</p> <p>Strongly attained by M1 and M2,</p> <p>Moderately attained by M3</p>	<ul style="list-style-type: none"> ● Providing Strong Foundation Of Technical Knowledge in the Field of Electrical Engineering. ● Developing Career Oriented Skills through Enrichment Programs. ● Imparting technical Knowledge in Solving real-time problems.
<p>PEO2 Statement is</p> <p>Strongly by M2 and Moderately attained by M 3</p> <p>Slightly attained by M1</p>	<ul style="list-style-type: none"> ● Developing Problem Solving technical aspects in a multidisciplinary environment. ● Providing technical and Personality-related Skills for Obtaining Innovative Solutions. ● Providing Optimized Solutions for real-world problems through Creativity.
<p>PEO3 Statement is</p> <p>Strongly attained by M3 and M1</p> <p>Moderately attained by M2</p>	<ul style="list-style-type: none"> ● Inculcating Personality and ethically based Skills for achieving Success in desired Stream. ● Enhancing Skills for Workplace Environment. ● Attaining technical excellence in solving problems and obtaining better Solutions.

PEO Statements	M1	M2	M3
To develop technically competitive diploma Engineers in the challenging areas of design and manufacturing and its associated industries in the domain of electrical engineering.	3	3	1
To Motive the diploma engineers to improve their academic career by involving in doing higher education and continuous learning.	1	3	2
To possess a professional attitude as an individual and as a team member with consideration for society, professional ethics and environmental factors.	2	1	3

Criterion 2

Program Curriculum and Teaching-learning processes

2.1 Program curriculum

2.1.1. State the process used to identify extent of compliance of the Board Curriculum for attaining the Program Outcomes (POs) & Program Specific Outcomes (PSOs), mention the identified Curricular Gaps. If any

A. Process used to identify extent of compliance of SBTE curriculum for attaining POs & PSOs :

In order to ensure that our educational programs align with the Program Outcomes (POs) and Program Specific Outcomes (PSOs) as stipulated by the State Board of Technical Education (SBTE), Bihar, GEMS Polytechnic College employs a rigorous process for assessing and enhancing curriculum compliance. This process involves a systematic approach to mapping curriculum elements, analyzing feedback from various stakeholders, and identifying curricular gaps.

Program Specific Outcome (PSOs):

The Program Specific Outcomes (PSOs) serve as a critical component of our curriculum development, shaped by the Department's Vision and Mission, Program Outcomes, Program Educational Outcomes (PEOs), and insights from Industry Representatives and Alumni. Additionally, the PSOs are benchmarked against the outcomes and objectives of technical societies and other esteemed institutions.

A. Process Used to Identify Extent of Compliance of SBTE Curriculum for Attaining POs & PSOs:

Curriculum Structure:

GEMS Polytechnic College adheres to the curriculum and syllabi prescribed by the State Board of Technical Education, Bihar (SBTE). The SBTE curriculum is organized into eight different domains, encompassing a wide range of subjects and courses:

Basic Sciences

Engineering Sciences

Humanities & Social Sciences

Program Core

Program Elective

Open Elective

Project, Seminar, Internship

Audit Courses & MOOCs

Moreover, the course objectives and outcomes are meticulously framed at the commencement of each new curriculum regulation.

Curriculum with CO-PO/PSO Mapping:

To assess the extent of compliance of the SBTE curriculum in achieving the Program Outcomes (POs) and Program Specific Outcomes (PSOs), we employ the following process:

Categorization:

The entire curriculum is categorized into the relevant domains, including Basic Sciences, Engineering Sciences, Humanities & Social Sciences, Program Core, Program Elective, Open Elective, Project, Seminar, Internship, Audit Courses, and MOOCs.

Mapping Matrix:

A correlation matrix is developed, establishing links between individual courses and the corresponding POs and PSOs. This mapping matrix provides a clear overview of the alignment between course content and desired outcomes.

Cumulative Evaluation:

We calculate the cumulative value for every PO and PSO by assessing the percentage of courses that successfully align with each outcome.

Gap Identification:

Curricular gaps are identified by analyzing courses where the percentage of alignment with POs or PSOs falls below the average percentage of alignment across all courses.

Distribution of Curriculum towards the attainment of POs and PSOs																	
S.No	Course Component	Courses	Credits	Total Course Component Credit	Curriculum Content (% of total number of credits of the program)	Total number of contact Periods per week	Total Periods	Relevance to PO and PSOs (Y / N)									
								PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO 1	PSO 2	PSO3
1	Basic Sciences	Mathematics-I - 2001101	3	21	14.48%	6	40	Y	Y	-	-	-	-	-	-	-	-
2		Applied Physics-I - 2001102	3			5		Y	Y	-	Y	-	-	Y	Y	-	-
3		Applied Chemistry - 2001103	3			5		Y	Y	-	Y	Y	-	Y	-	-	-
4		Applied Physics Lab-I - 2001106	2			4		Y	Y	-	-	-	-	Y	Y	-	-
5		Applied Chemistry Lab - 2001107	2			4		Y	Y	Y	Y	Y	Y	Y	-	-	-
6		Mathematics-II - 2002201	4			6		Y	Y	-	-	-	-	-	Y	-	-
7		Applied Physics-II - 2002202	3			6		Y	Y	Y	-	Y	-	Y	-	-	-
8		Applied Physics Lab-II - 2002206	1			4		Y	Y	-	-	-	-	-	-	-	-
9	Engineering Sciences	Engineering Graphics - 2001105	2	17	11.72%	6	36	Y	Y	Y	-	Y	-	Y	Y	-	-
10		Engg. Workshop Practice - 2001109	2			4		Y	-	-	Y	Y	-	Y	-	-	-

11		Engineering Mechanics - 2002205	3			5		Y	Y	-	-	Y	-	-	-	-	Y
12		Engineering Mechanics Lab 2002209	2			4		Y	Y	-	-	Y	-	-	-	-	Y
13		Introduction to IT Systems - 2002203	2			4		Y	-	-	Y	Y	-	Y	-	-	-
14		Introduction to IT - 2002207 Systems Lab	2			4		Y	-	-	Y	Y	-	Y	-	-	-
15		Fundamental of Electrical & Electronics Engineering - 2002204	3			5		Y	Y	-	-	-	-	-	Y	-	-
16		Fundamental of Electrical & Electronics Engg. Lab - 2002208	1			4		Y	-	-	Y	-	-	-	Y	-	-
17		Humanities	Communication Skills in English - 2001104			2		8	5.52%	4	15	-	-	-	-	Y	Y
18	Communication Skills in English Lab - 2001108		2	4	-	-	-			-		Y	-	Y	-	-	-
19	Sports and Yoga - 2001110		2	2	-	-	-			-		-	Y	-	-	-	-
20	Entrepreneurship and Start-ups 2000601		2	5	Y	Y	Y			-		Y	Y	Y	-	-	-
21	Program Core	Introduction to Electric Power Generation Systems - 2020301	3	62	42.76%	5	120	Y	-	-	-	Y	-	Y	-	Y	-
22		Electrical Circuits - 2020302	3			5		Y	Y	-	-	-	-	-	Y	-	-
23		Electrical and Electronics Measurements - 2020303	4			6		Y	Y	Y	Y	Y	-	Y	Y	Y	Y

24		Electric Motors and Transformers - 2020304	4			6		Y	Y	-	-	-	-	-	Y	Y	-
25		Fundamental of Basic electronics & Digital Electronics - 2020305	3			5		Y	Y	Y	-	Y	-	-	Y	-	-
26		Introduction to electric power generation laboratory (2020306)	1			4		Y	-	-	-	Y	-	Y	-	Y	-
27		Electrical Circuits Laboratory (2020307)	1			4		Y	Y	-	-	Y	-	-	Y	-	-
28		Electrical and Electronic Measurements Laboratory (2020309)	1			4		Y	Y	Y	Y	Y	-	Y	Y	Y	Y
29		Electric Motors and Transformers Laboratory (2020310)	1			4		Y	-	-	Y	-	-	-	Y	-	-
30		Fundamentals of Basic electronics & Digital Electronics (TW)(2020312)	1			1		Y	-	-	-	Y	Y	Y	-	-	Y
31		Power Electronics 2020401	3			5		Y	Y	-	-	Y		Y	Y	Y	Y
32		Electric Power Transmission and Distribution 2020402	3			5		Y	Y	-	-	-	-	Y	-	Y	-
33		Induction, Synchronous and Special Electrical Machines 2020403	3			5		Y	Y	-	-	Y	-	-	Y	-	-
34		Solar Power technologies 2020404	3			5		Y	-	-	-	-	-	-	Y	Y	-

35		Industrial drives 2020405	3			5		Y	-	-	-	-	Y	Y	Y	Y	Y
36		Power Electronics Laboratory 2020406	1			4		Y	-	-	Y	-	-	Y	Y	Y	Y
37		Induction, Synchronous and Special Electrical Machines Laboratory 2020407	1			4		Y	-	-	Y	-	-	-	Y	-	-
38		Industrial Drives laboratory 2020408	1			4		Y	-	-	Y	-	Y	Y	Y	Y	Y
39		MATLAB 2020409	1			4		Y	Y	-	Y	-	-	-	Y	-	-
40		Electric power transmission and distribution (T.W) 2020410	1			1		Y	Y	-	-	Y	Y	Y	-	Y	-
41		Solar power technologies (T.W) 2020411	1			1		Y	-	-	-	-	-	-	Y	Y	-
42		Course Under Moocs /SWAYAM/AutoCAD in electrical engineering or others 2020412	1			2		Y	-	-	-	-	-	Y	-	-	Y
43		Microprocessor & Microcontroller 2020501	4			6		Y	-	-	Y	Y	Y	Y	-	-	Y
44		Energy Conservation and Audit 2020502	3			5		Y	-	-	Y	Y	-	Y	Y	Y	Y
45		Microcontroller Applications Laboratory 2020506	2			4		Y	Y	-	Y	Y	Y	Y	-	-	Y
46		Energy Conservation and Audit Lab 2020507	1			4		Y	-	-	-	-	Y	Y	Y	-	Y

47		Building Electrification 2020602	4			6		Y	-	Y	-	-	-	Y	-	Y	Y
48		Utilization of Electrical Energy 2020603	4			6		Y	-	-	-	Y	Y	Y	Y	Y	Y
49	Project, Seminar, Internship	Summer training/Industrial Visits 2020413	2	9	6.21%	2	11	Y	-	-	-	-	-	-	Y	Y	Y
50		Minor Project 2020510	2			3		Y	Y	Y	Y	-	Y	-	Y	Y	-
51		Seminar 2020609	2			2		Y	Y	Y	Y	Y	Y	Y	-	-	Y
52		Major Project 2020610	3			4		Y	Y	Y	Y	-	Y	-	Y	Y	-
53	Program Elective	Switchgear and Protection (2020503C)	3	16	11.03%	5	32	Y	Y	Y	Y	Y	-	-	Y	Y	-
54		Electric Traction (2020504C)	3			5		Y	-	-	-	-	-	-	Y	Y	-
55		Soft Computing Techniques (2020505A)	2			5		Y	Y	Y	-	Y	-	Y	Y	-	-
56		Switchgear and Protection Laboratory (2020508C)	2			4		Y	-	Y	Y	-	-	-	Y	-	-
57		Electric Traction Lab. (2020509C)	1			4		Y	-	-	-	-	-	-	Y	Y	-
58		Network Theory(2020604A)	3			5		Y	Y	Y	-	-	-	-	Y	Y	-
59		Building Electrification Laboratory (2020608A)	2			4		Y	-	-	-	-	Y	-	-	-	-

60	Inter Disciplinary courses	Web Technology Lab 2018308	1	4	2.76%	4	9	Y	-	-	-	-	-	-	-	-	-	-		
61		Python 2018311	1			1		Y	-	-	-	-	-	-	-	-	-	-	-	-
62		Project Management (2015605B)	2			4		Y	Y	-	-	-	Y	Y	Y	-	-	-	-	-
63	Audit Courses & Moocs	C/KYP/IT Essential / Python/ Others (2001111)	1	8	5.52%	1	6	Y	-	-	Y	Y	Y	-	-	-	-	Y		
64		Course under MOOCS /SWAYAM/ETC/(2002210)	2			1		Y	-	-	-	-	-	Y	-	-	-	-	-	-
65		KYP/IT Essential/Python/Others (2002211)	1			1		Y	-	-	-	Y	-	-	-	-	-	-	-	-
66		Environmental Science (2002212)	2			1		Y	Y	-	-	Y	-	Y	-	-	-	-	-	-
67		Course under Moocs/ NPTEL / Others (2020511)	1			1		Y	-	-	-	-	-	Y	-	-	-	-	-	-
68		Course Under Moocs /NPTEL/ Others TW (2020611)	1			1		Y	-	-	-	-	-	Y	-	-	-	-	-	-
TOTAL			145	145	100.00%	No. of Courses Mapped with POs & PSOs		65	33	15	23	32	18	37	35	23	19			

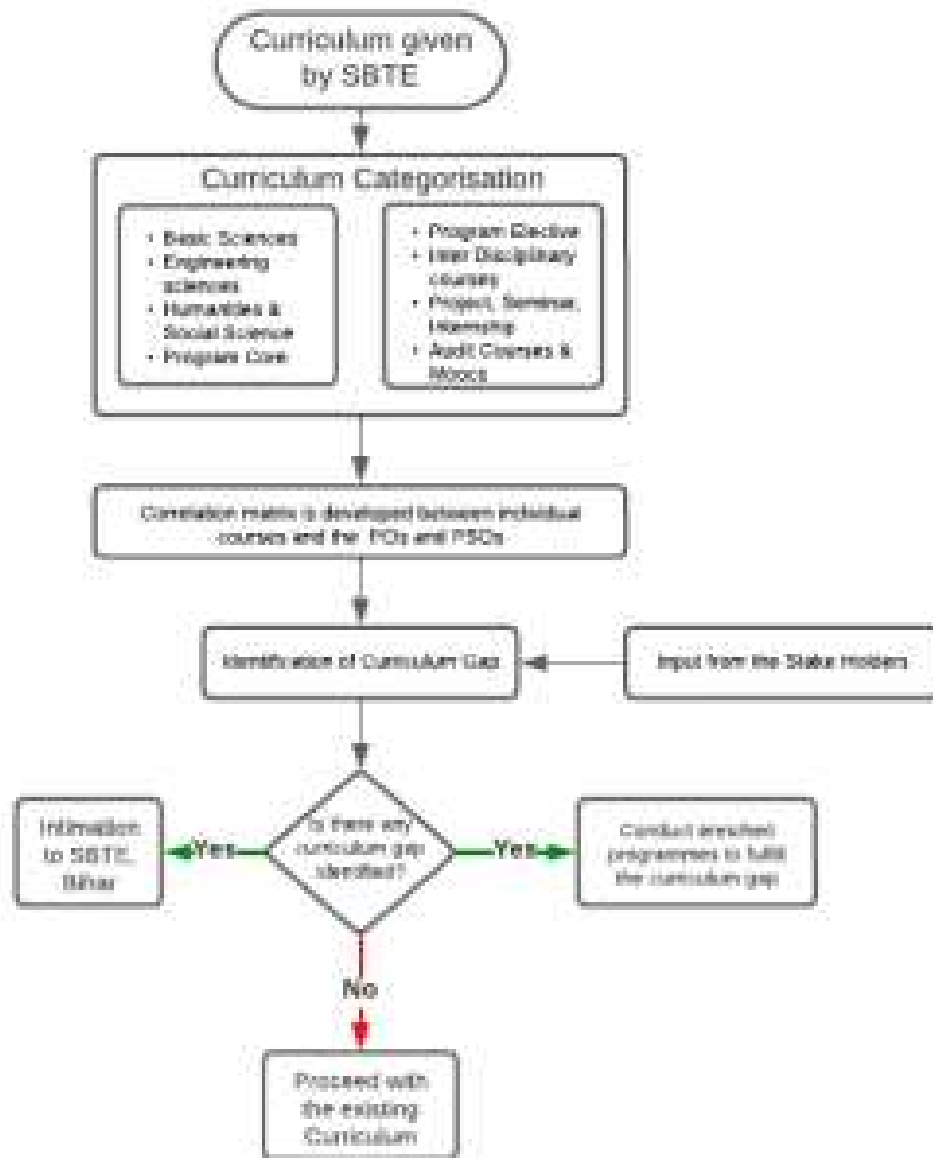


Table: Compliance of SBTE curriculum with POs**Total No. of Courses: 68**

S.NO	Program Outcomes	Number of courses Mapped with POs	Percentage
PO 1	Basic and Discipline specific Knowledge	65	95.59%
PO 2	Problem Analysis	33	48.53%
PO 3	Design / Development of solutions	15	22.06%
PO 4	Engineering Tools, Experimentation and Testing	23	33.82%
PO 5	Engineering Practices for society, Sustainability and Environment	32	47.06%
PO 6	Project Management	18	26.47%
PO 7	Life-Long Learning	37	54.41%
Average Percentage (%)			46.85%

Percentage of courses mapping with PO = No.of courses mapped with PO / Total number of courses in curriculum

The Following PO's are identified as curricular gaps are obtained from the above mentioned table:

PO 3	Design / Development of solutions
PO 4	Engineering Tools, Experimentation and Testing
PO 6	Project Management

Table: Compliance of SBTE curriculum with PSOs**Total No. of Courses: 68**

S.NO	Program Outcomes	Number of courses Mapped with POs	Percentage
PSO 1	To make use of the basic concept of AC machines, DC machines, selection of suitable drives based on the application, Electrical Maintenance and Service	35	51.47%
PSO 2	To select the concept of generation, transmission, distribution, utilization of electrical energy based on the needs of the society.	23	33.82%
PSO 3	To design and estimate the total Electrical cost and material requirements for residential building, Workshop, Laboratory as an individual and as a team.	19	27.94%
Average Percentage (%)			37.75%

Percentage of courses mapping with PSO = No.of courses mapped with PSO / Total number of courses in curriculum

The Following PSO's are identified as curricular gaps are obtained from the above mentioned table:

PSO 2	To select the concept of generation, transmission, distribution, utilization of electrical energy based on the needs of the society.
PSO 3	To design and estimate the total Electrical cost and material requirements for residential building, Workshop, Laboratory as an individual and as a team.

Feedback from Stakeholders:

The Program Advisory Committee (PAC) Meeting plays a pivotal role in the curriculum assessment process. It serves as a platform for deliberating and incorporating feedback received from various stakeholders, including industry representatives, alumni, faculty, and students. This feedback loop

ensures that the curriculum remains responsive to the evolving needs and expectations of the industry and community.

In conclusion, GEMS Polytechnic College places a strong emphasis on maintaining a curriculum that aligns with the Program Outcomes (POs) and Program Specific Outcomes (PSOs) outlined by SBTE. Through systematic mapping, assessment, and stakeholder engagement, we continually strive to bridge any curricular gaps and provide students with a well-rounded education that prepares them for success in their chosen fields.

B.List the curricular gaps for the attainment of POs & PSOs:

In the pursuit of educational excellence, it is imperative to critically examine and identify areas within the curriculum of the Diploma in Electrical Engineering program where improvements are needed to align more effectively with the Program Outcomes (POs) and Program Specific Outcomes (PSOs).

The identification of curricular gaps in the Diploma in Electrical Engineering program was a comprehensive process that incorporated two primary sources of assessment:

- The compliance with the State Board of Technical Education (SBTE) curriculum and
- The valuable feedback from various stakeholders.

The following is a comprehensive list of curricular gaps identified within the program:

Sr. No	Gaps Identified	Explanation	Relevance to PO's/PSO's
1.	Industry Readiness	The curriculum lacks exposure to real-world industry practices and expectations, leaving graduates less prepared for the demands of electrical engineering careers. There is a gap in our program where students are not adequately equipped with the practical skills and knowledge required to seamlessly transition into the workforce.	PSO3,PO2
2.	Emerging Technologies	The curriculum does not sufficiently cover emerging technologies in electrical engineering, resulting in graduates who may not be up to date with the latest advancements in the field. An identified curricular gap is the omission of instruction on cutting-edge technologies, hindering our students' ability to stay	PSO3,PO7

		competitive in the fast-evolving world of electrical engineering.	
3.	Essential Fundamentals	<p>The curriculum falls short in providing comprehensive coverage of essential fundamentals, leaving graduates without a solid grasp of crucial foundational knowledge in their respective fields.</p> <p>This gap in essential fundamentals can adversely impact their readiness for the challenges presented by a dynamic and evolving academic and professional landscape.</p>	PO1
4.	Environmental awareness and Sustainability	<p>The curriculum lacks adequate coverage of sustainability and environmental awareness in electrical engineering, leaving graduates less informed about pressing ecological issues and potential solutions.</p> <p>One noticeable curricular gap is the absence of education on contemporary sustainability practices and environmental challenges, which hampers our students' preparedness to engage in a world that increasingly demands environmentally responsible decision-making and actions.</p>	PO5
5.	Career Guidance	<p>There is a gap in providing students with effective career guidance, as the curriculum does not include guidance on career options, job market trends, or strategies for job searching.</p> <p>Students lack adequate support and information for making informed career choices within the field of electrical engineering, which hinders their long-term success in the profession.</p>	PO7

2.1.2. Contents beyond the Syllabus

(Provide details of the additional course/learning material/content/laboratory experiments/projects etc., arising from the gaps identified in 2.1.1. the delivery details and relevance to POs and PSOs for Solar fuels are synthetic fuels produced from solar energy. They are the most economically viable, efficient, scalable, and environmentally friendly solution for long-distance transportation. A cutting-edge technology that offers a sustainable alternative to fossil fuels. each of the assessment year in the format given below)

At GEMS Polytechnic College, we understand the significance of providing education that goes beyond the confines of the syllabus. We believe in offering students a comprehensive learning experience that not only covers the prescribed curriculum but also equips them with additional knowledge and skills to excel in their chosen fields. This commitment is evident through our proactive approach in addressing identified gaps and our diverse range of initiatives aimed at delivering content beyond the syllabus.

A. Steps Taken to Get Identified Gaps Included in the Curriculum

Engagement with SBTE, Bihar:

Recognizing the importance of a curriculum that aligns with the evolving needs of industry and society, we have taken proactive steps to address identified gaps.

One crucial avenue for this is our engagement with the State Board of Technical Education (SBTE), Bihar.

We have initiated a formal communication process by sending letters to SBTE, Bihar, requesting a review of the curriculum gaps we have identified.

Our aim is to advocate for the inclusion of these gaps in the upcoming new regulation of the syllabus. This collaborative approach ensures that our curriculum remains dynamic and responsive to the changing educational landscape and industry requirements.

Semester	Course Name	Suggested Topic	Curriculum Gap	Relevance to PO's/PSO's
IV SEMESTER	Solar Power technologies	SOLAR FUELS	Solar fuels are synthetic fuels produced from solar energy. They are the most economically viable, efficient, scalable, and environmentally friendly solution for long-distance transportation. A cutting-edge technology that offers a sustainable alternative to fossil fuels.	PO2,PO3,PO5, PSO3
IV SEMESTER	Power Electronics	Ac Voltage Controller	This topic is crucial for a comprehensive understanding of modern power systems	PO2,PO4,PO6, PSO2

			& industrial application, providing students with practical insights & enhancing their problem-solving skills	
V SEMESTER	Energy Conservation and Audit	Energy Management System	Energy management system is an important topic of Energy conservation system, Computer aided tools used by operators for electric utility grids to motor control and optimize the performance of the generation or transmission	PO2,PO3,PO5, PS03

B. Delivery Details of Content beyond Syllabus:

To ensure that our students receive content that extends beyond the syllabus, we have implemented a series of special initiatives designed to bridge curricular and attainment gaps. These initiatives are tailored to provide students with practical knowledge, valuable insights, and essential skills that enhance their overall learning experience.

Some of these initiatives include:

S.no	Delivery Process	Delivery Details of Content beyond Syllabus
1	Lecture on Content Beyond the Syllabus	Respective course-handling faculties will identify the topic for industry readiness and emerging technology in their course as content beyond the syllabus, which will be delivered during the regular course duration itself.
2	Lab Experiments on Content Beyond the Syllabus	Respective lab course-handling faculties will identify experiments related to industry readiness and emerging technology in their lab courses as content beyond the syllabus. These experiments will be incorporated into the regular lab course duration.
3	Value-Added Courses	We offer value-added courses that complement the core curriculum. These courses cover emerging topics, advanced technologies, and specialized skills, giving students a competitive edge in their respective fields.

4	Guest Lectures	Distinguished experts from academia and industry are invited to conduct guest lectures. These sessions provide students with exposure to real-world insights, industry trends, and the opportunity to interact with industry leaders.
5	Industrial Visits	Students are encouraged to participate in industrial visits, where they can observe industrial processes and gain practical knowledge. These visits help them connect theoretical concepts to real-world applications.
6	In-Plant Training	In-plant training programs enable students to work within an industrial setting. This hands-on experience allows them to apply classroom knowledge, develop technical skills, and understand industry practices.
7	Mini Projects	Students engage in mini projects that encourage innovation, problem-solving, and teamwork. These projects foster creativity and practical application of their learning.
8	Soft Skills Training	We provide soft skills training to enhance students' communication, teamwork, and interpersonal skills. These skills are crucial for personal and professional development.
9	Mock Interviews	To prepare students for the job market, we conduct mock interviews facilitated by both internal academic experts and external industrial experts. These sessions offer constructive feedback and help students build confidence for actual job interviews.

At GEMS Polytechnic College, our commitment to delivering content beyond the syllabus is rooted in our dedication to nurturing well-rounded, employable graduates. By actively addressing identified gaps and offering these diverse initiatives, we empower our students with the knowledge, skills, and confidence to excel in their academic and professional journeys.

C. Mapping of content beyond syllabus with the POs & PSOs (3)

CAY 2023-2024

S.No	Gap	Action Taken	Date-Month-Year	Resource Person with Designation	Mode	No. of students present	Relevance to POs, PSOs
1	Industry Readiness	Applications of Sensors in Industrial Automation	01.03.24	Mr.Janes,Trainer Sparkle	Offline	70	POs-1,3,5,6,7 PSOs-1,2,3

CAY 2022-23

S.No	Gap	Course	Action Taken	Date-Month-Year	Resource Person with Designation	Mode	No. of students present	Relevance to POs, PSOs
1	Environmental Awareness and sustainability	Introduction to Electric power generation	Lecture on Content beyond the Syllabus - Smart Grid	15.03.23	Miss. Pathma Priya, Department of Electrical and Electronics Engineering, GPC	Offline	30	POs-1,5,7 PSOs-1
2	Industry Readiness	Electric Circuits	Lecture on Content beyond the Syllabus - Synchronous Condenser	21.03.23	Mrs.D.Priya, Department of Electrical Engineering, GPC	Offline	30	POs-1,7 PSOs-1
3	Essential Fundamentals	Electrical and electronic measurements	Lecture on Content beyond the Syllabus - Wheatstone bridge	16.02.23	Mr. Raghunath, Department of Electrical and Electronics Engineering, GPC	Offline	30	POs-1,4 PSOs-2
4	Industry Readiness	Electric motors and transformers	Lecture on Content beyond the Syllabus - Back to back testing of a transformer	22.02.23	Mr. Ganesh Babu, Department of Electrical Engineering, GPC	Offline	30	POs-4,6 PSOs-1

5	Emerging Technologies	Fundamentals of Basic and Digital Electronics	Lecture on Content beyond the Syllabus - Real Time applications of transistor	28.02.23	Mrs.Catharine, Department of Electrical and Electronics Engineering, GPC	Offline	30	POs 5,6,7 PSOs-2
6	Industry Readiness	Mathematics-II	Lecture on Content beyond the Syllabus - Coordinate Geometry	20.03.23	Mr. Sumit Kumar Singh, Department of Electrical and Electronics Engineering, GPC	Offline	47	POs-1,2 PSOs-3
7	Environmental Awareness and sustainability	Environmental Science(TW)	Lecture on Content beyond the Syllabus - Destructive and Non-destructive testing	1.03.23	Mr. Anil kolli, Department of Mechanical Engineering, GPC	Offline	47	POs-1,2, 4 PSOs-2
8	Essential Fundamentals	communication skills	Lecture on Content beyond the Syllabus - Conversation skills	17.02.23	Mrs.Jaslin christy, Department of Civil Engineering, GPC	Offline	47	POs-1,7 PSOs-1
9	Emerging Technologies	Engineering graphics	Lecture on Content beyond the Syllabus - AutoCAD commands	02.02.23	Mr. Arun pandian, Department of Mechanical Engineering, GPC	Offline	47	POs-1,5, 7 PSOs-2

10	Emerging Technologies	Soft computing techniques	Lecture on Content beyond the Syllabus - Concepts of Machine learning	28.02.23	Mr.Vivek, Department of Computer and Science Engineering, GPC	Offline	26	POs-1,7 PSOs-2
11	Environmental Awareness and sustainability	Energy Conservation & Audit	Lecture on Content beyond the Syllabus - Framework of Energy management System	28.01.23	Mr.Jabas Edwin raj,Department of Electrical Engineering, GPC	Offline	26	POs 5,6,7 PSOs-2
12	Essential Fundamentals	Switchgear and protections	Lecture on Content beyond the Syllabus - Oil circuit breaker	17.03.23	Mr.Ram Gopal Challa,Department of Electrical Engineering, GPC	Offline	26	POs 5,6,7 PSOs-3
13	Industry Readiness	Electric traction	Lecture on Content beyond the Syllabus - Overhead Equipments Design	23.02.23	Mr.Bhaskar Ranjan,Department of Electrical Engineering, GPC	Offline	26	POs-3,7 PSOs-3
14	Essential Fundamentals	Microprocessor and Microcontroller	Lecture on Content beyond the Syllabus - 8086 Architecture	18.01.23	Mr. Sumit Kumar Singh, Department of Electrical and Electronics Engineering, GPC	Offline	26	POs-2,6, 7 PSOs-3

15	Emerging Technologies	Energy Conservation & Audit	Lecture on Content beyond the Syllabus - Analysis on Aerodynamics	14.02.23	Mr.Jabas Edwin raj,Department of Electrical Engineering, GPC	Offline	26	POs-1,2,7 PSOs-1
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S.No	Gap	Action Taken	Date-Month-Year	Resource Person with Designation	Mode	No. of students present	Relevance to POs, PSOs
1	Industry Readiness	Workshop on Soldering Practices	04.02.23	Mr.Simon,CPC CTC Coordinator	Offline	68	POs-2,3,6 PSOs-3
2	Emerging Technologies	Interaction on Coal based thermal power plant	30.01.23	Mr.Boopathy Raja,DGM,NTPC	Offline	68	POs-1,5,7 PSOs-3
3	Environmental Awareness and sustainability	Light Up- An activity on Electric lamp designing	12.05.23	Mrs.Catharine,Lecturer, GEMS Polytechnic college	Offline	75	POs-3,5,7 PSOs-3
5	Career Guidance	Guest Lecture - National Startup day	11-01-2023	Mr.Abraham Dennyson. B.tech,MBA, PGD-PHN Senior manager-Program analyst at Project Concern International.	Online	53	POs-1,7 PSOs-1
4	Emerging Technologies	Technical quiz	03-09-2023	ISTE	Offline	90	POs-2,7 PSOs-2
5	Career Guidance	Career Guidance	30-08-2023	Dr. P. K. Rao, Training and Placement Expert, Department of Science and	Offline	23	POs-1,7 PSOs-3

				Technology, Patna, Bihar			
6	Emerging Technologies	Paper presentation	28-06-20 23	Mr. Anil Kolli, HoD ME Mrs. Pameela HoD EEE GEMS Ploytechnic college	Offline	18	POs-1,6,7 PSOs-3
7	Emerging Technologies	Metal Art	27-06-20 23	Mrs. Catharine, Lecturer GEMS Polytechnic college	Offline	42	POs-3,6 PSOs-3
8	Emerging Technologies	Technical Quiz	27-06-20 23	Mrs. Chinthiya Lecturer GEMS Polytechnic college	Offline	20	POs-1,6,7 PSOs-3
9	Emerging Technologies	National Science Day - QUIZ competition, Poster presentation.	28-02-20 23	Mr.Ragunath A. IIC President GEMS Polytechnic College	Offline	60	POs-1,6,7 PSOs-3
10	Industry Readiness	Industrial Visit to Hydro electric power plant	28.10.23	Mr.Jabas Edwin Raj ,HOD,Electrical Engineering Department	Offline	60	POs-1,7 PSOs-3

CAY M1 2021-22

S.No	Gap	Course	Action Taken	Date-Mo nth-Year	Resource Person with Designation	Mode	No. of stud ents pres ent	Relevanc e to POs, PSOs
1	Industry Readiness	Mathematics-I	Lecture on Content beyond the Syllabus - Linear differential equations	5.09.22	Mr. Sanjeeva, Department of Electrical Engineering, GPC	Offline	36	POs-1,2 PSOs-3

2	Environmental Awareness and Sustainability	Applied Physics-II	Lecture on Content beyond the Syllabus - coulomb's law in electromagnetism	17.08.22	Mr. Velangi Babu, Department of Electrical and Electronics Engineering, GPC	Offline	36	POs-1,7 PSOs-1
3	Essential Fundamentals	Introduction to IT system	Lecture on Content beyond the Syllabus - Computer fundamentals	23.08.22	Miss.Kanti Verma, Department of Computer and Science Engineering, GPC	Offline	36	POs-7 PSOs-3
4	Essential Fundamentals	Fundamentals of Electric & Electronic Engg.	Lecture on Content beyond the Syllabus - Digital Number systems	07.09.22	Mr. Robin, Department of Electrical and Electronics Engineering, GPC	Offline	36	POs-1,7 PSOs-2
5	Essential Fundamentals	Mathematics-I I	Lecture on Content beyond the Syllabus - Homogeneous differential equations	03.08.22	Mr. Sanjeeva, Department of Electrical Engineering, GPC	Offline	39	POs-2,7 PSOs-3
6	Industry Readiness	Applied Physics-I	Lecture on Content beyond the Syllabus - Working of Motors	16.08.22	Mr. Vijay Bhaskar, Department of Electrical Engineering, GPC	Offline	39	POs-3,4 PSOs-1
7	Essential Fundamentals	Communication skills	Lecture on Content beyond the Syllabus - MS-office	01.08.22	Miss.Kanti Verma, Department	Offline	39	POs-7 PSOs-3

					of Computer and Science Engineering, GPC			
8	Industry Readiness	Electrical and electronic measurements	Lecture on Content beyond the Syllabus - Measuring Instruments	21.09.22	Mr. Robin, Department of Electrical and Electronics Engineering, GPC	Offline	39	POs-3,4 PSOs-2
9	Industry Readiness	Engineering Mechanics	Lecture on Content beyond the Syllabus - Gear train, Hoist Mechanism, Gear pulley block	14.09.22	Mr. Sudhir, Department of Mechanical Engineering, GPC	Offline	39	POs-1,7 PSOs-2
10	Essential Fundamentals	Microprocessor and Microcontroller	Lecture on Content beyond the Syllabus - 8086 architecture with programming models	09.09.22	Mr. Sumit Kumar Singh, Department of Electrical and Electronics Engineering, GPC	Offline	23	POs-2,6, 7 PSOs-3
11	Emerging Technologies	Energy conservation & audit	Lecture on Content beyond the Syllabus - Energy management System	19.08.22	Mr. Jabas Edwin raj, Department of Electrical Engineering, GPC	Offline	23	POs 5,6,7 PSOs-2
12	Essential Fundamentals	Switchgear & Protections	Lecture on Content beyond the Syllabus - Lighting arrester and Oil circuit breaker	25.08.22	Mr. Ram Gopal Challa, Department of Electrical	Offline	23	POs 5,6,7 PSOs-3

					Engineering, GPC			
13	Industry Readiness	Building Electrification	Lecture on Content beyond the Syllabus - Design of OHE	10.08.22	Mr.Bhaskar Ranjan,Depar tment of Electrical Engineering, GPC	Offline	23	POs-3,7 PSOs-3
14	Emerging Technolog ies	Soct computing techniques	Lecture on Content beyond the Syllabus - Machine learning	17.09.22	Mr.Vivek, Department of Computer and Science Engineering, GPC	Offline	23	POs-1,7 PSOs-2

S.No	Gap	Action Taken	Date-Mont h-Year	Resource Person with Designation	Mode	No. of student s present	Relevanc e to POs, PSOs
1	Emerging Technologies	Seminar on Railway trends	11.08.22	Mr.Abner,PGD Rail & Metro technology	Offline	68	POs-1,5,7 PSOs-1
2	Industry Readiness	Logo designing Competition	29.11.22	Mr.Ganesh,Depar tment of Electrical Engineering, GPC	Offline	68	POs-1,7 PSOs-3
3	Emerging Technologies	Fabrication of transformer	03.09.22	Mr.Bhaskar Ranjan,Departme nt of Electrical Engineering, GPC	Offline	46	POs-5,6,7 PSOs-2
4	Career Guidance	Career Guidance Program	30.08.22	Dr.Kamesh,Traini ng & Placement Expert,Dept of Science & technology ,Patna	Offline	68	POs-5,7 PSOs-3

5	Environmental Awareness and Sustainability	E-waste Awareness program	28.11.22	Mrs.Catharine, Department of Electrical & Electronic Engineering, GPC	Offline	68	POs-1,5 PSOs-2
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CAY M2 2020-21

S.No	Gap	Course	Action Taken	Date-Month-Year	Resource Person with Designation	Mode	No. of students present	Relevance to POs, PSOs
1	Industry Readiness	Solar Power technologies	Lecture on Content beyond the Syllabus - Photovoltaic Power conversion system	13.09.21	Mr.Bhaskar Ranjan, Department of Electrical Engineering, GPC	Offline	42	POs-3,5,7 PSOs-3
2	Industry Readiness	Electrical circuits	Lecture on Content beyond the Syllabus - Super Nodal Analysis	22.10.21	Mr Ragnath A, Department of Electrical & Electronics Engineering, GPC	Offline	42	POs-1,2 PSOs-1
3	Industry Readiness	Electric motors and transformers	Lecture on Content beyond the Syllabus - Design of Single Phase transformer	17.11.21	Mr. Vijay Bhaskar, Department of Electrical Engineering, GPC	Offline	25	POs1,3 PSOs-3
4	Essential Fundamentals	Industrial drives	Lecture on Content beyond the Syllabus - Wheatstone bridge	26.10.21	Mr. Sumit Kumar Singh, Department of Electrical and Electronics Engineering, GPC	Offline	25	POs-1,7 PSOs-2
5	Industry Readiness	Fundamentals of Electrical & Electronic Engg.	Lecture on Content beyond the Syllabus - Transistor daily life applications	24.11.21	Mr. Ketu Kumar Sahitya, Department of Electrical and	Offline	32	POs-3,5,7 PSOs-3

					Electronics Engineering, GPC			
6	Industry Readiness	Power Electronics	Lecture on Content beyond the Syllabus - AC Voltage Controller	23.09.21	Mrs.Pameela, Department of Electrical and Electronics Engineering, GPC "	Offline	32	POs-1,3,7 PSOs-1
7	Industry Readiness	Electrical & Electronic Measurements	Lecture on Content beyond the Syllabus - Performance of Online and Offline UPS	25.10.21	Mr. David Naik, Department of Electrical and Electronics Engineering, GPC	Offline	26	POs-1,7 PSOs-1
8	Industry Readiness	Induction synchronous and special electrical Machines	Lecture on Content beyond the Syllabus - Speed Control of Alternators	15.11.21	Mr.Jabas Edwin raj,Department of Electrical Engineering, GPC	Offline	26	POs-3,4,7 PSOs-2
9	Emerging Technologies	Solar Power technologies	Lecture on Content beyond the Syllabus - Solar tracking system	25.11.21	Mr.Bhaskar Ranjan,Department of Electrical Engineering, GPC	Offline	26	POs-3,6,7 PSOs-1
10	Industry Readiness	Energy Conservation and Audit	Lecture on Content beyond the Syllabus - Load dynamics basics	13.11.21	Mr. Sumit Kumar Singh, Department of Electrical and Electronics Engineering, GPC	Offline	26	POs 1,7 PSOs-2

S.No	Gap	Action Taken	Date-Month -Year	Resource Person with Designation	Mode	No. of students present	Relevance to POs, PSOs
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1	Emerging Technologies	Workshop on Robotics & Arduino programming	24-11-2021	Mr.Dinesh Palappan,Startup & Entrepreneurship Coordinator	Offline	50	POs-3,4,6 PSOs-1
2	Industry Readiness	Circuit Simulation Workshop	03.09.21	Mr.Dinesh Palappan,Startup & Entrepreneurship Coordinator	Offline	50	POs-3,4,7 PSOs-3
3	Emerging Technologies	Android App development training	02.09.21	Mr.Dinesh Palappan,Startup & Entrepreneurship Coordinator	Offline	50	POs-5,6,7 PSOs-2
4	Industry Readiness	Industrial Visit to Barun Power grid	07.12.21	Mrs. Pameela M ,HOD,Electrical and Electronics Engineering Department	Offline	29	POs-1,7 PSOs-2
5	Industry Readiness	Industrial Visit to Hydro electric power plant	10.08.21	Mrs. Pameela M ,HOD,Electrical and Electronics Engineering Department	Offline	29	POs-1,7 PSOs-3

2.2 Teaching-Learning Process:

A. Adherence to Academic Calendar

Adherence to the academic calendar is critical to maintaining a structured and efficient educational environment within our department. Our department's academic calendar is meticulously prepared ahead of each semester, considering the institution's calendar and the SBTE (State Board of Technical Education) Calendar. This careful planning ensures that the department's activities are well-coordinated and aligned with the broader educational framework.

Here are the key components of our department's academic calendar:

Semester Structure:

The academic calendar outlines the working days of the semester, providing a clear overview of the duration of the academic term. This serves as a foundational framework for all academic and non-academic activities within the department.

Internal Test Schedule:

To gauge students' progress and ensure timely assessments, the calendar includes the schedule for internal tests. This allows students and faculty members to adequately prepare and allocate their time for exam preparation and review.

Project Reviews:

For courses involving project work, the calendar specifies dates for project reviews. This ensures students receive timely feedback on their projects and can make necessary improvements.

Industrial Visits:

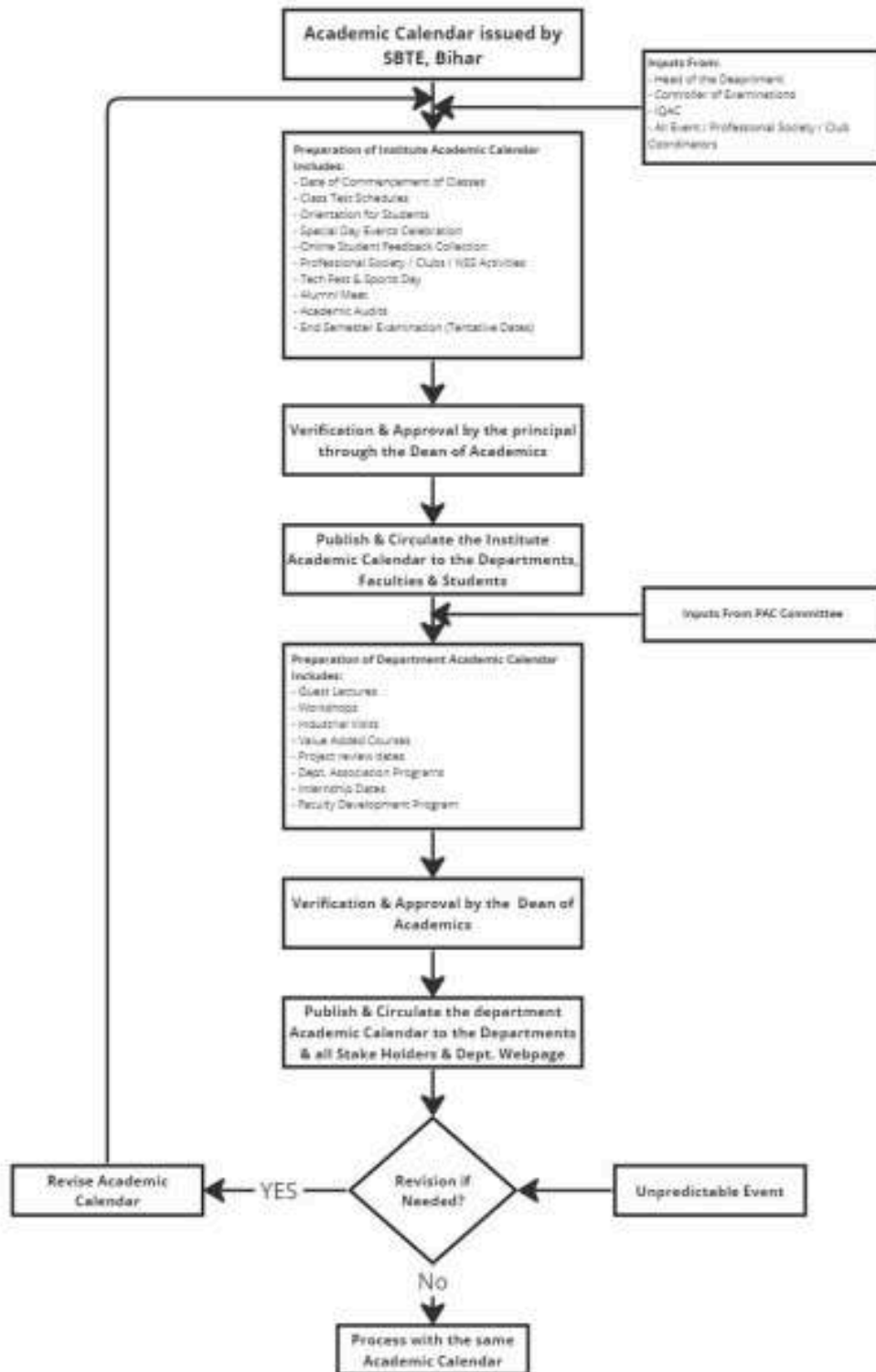
Many of our programs emphasize practical learning and industry exposure. The academic calendar incorporates planned industrial visits, providing students with opportunities to gain real-world insights into their fields of study.

Additional Activities:

Beyond regular classes and assessments, the academic calendar accommodates various other activities designed to enrich the learning experience. These include guest lectures by industry experts, seminars on emerging topics, workshops to enhance practical skills, and participation in professional society activities.

Communication:

The academic calendar is not a static document; it is a living guide that evolves as necessary. It is disseminated among faculty members and students to ensure everyone is aware of the schedule and can plan their commitments accordingly. Any updates or changes are communicated promptly to maintain transparency and adherence to the plan.



Adhering to the department's academic calendar is vital for creating a conducive learning environment where both faculty and students can maximize their potential. It fosters discipline, and time management, and ensures that all educational objectives are met systematically and organized.

By following the calendar diligently, we aim to provide our students with a holistic and enriching educational experience while staying aligned with the institution's and SBTE's guidelines.

B. Use of various instructional planning and delivery methods (3)

At our institution, the faculty is dedicated to fostering a dynamic and enriching learning environment for our students. To achieve this goal, we employ a diverse array of innovative teaching and learning methodologies that cater to different learning styles and enhance the overall educational experience. Below, we outline our key instructional methods:

Lecture Methods:

Curriculum Alignment:

We meticulously adhere to the curriculum and syllabus outlined by the SBTE, which serves as the foundation for preparing our academic calendar and teaching plans. This alignment ensures that our students receive education that is not only comprehensive but also industry-relevant.

Tutorial Hours:

For courses demanding a deeper analytical perspective, we conduct tutorial hours. These sessions provide students with the opportunity for in-depth discussions and a thorough understanding of course material.

Interactive Teaching:

While we embrace traditional lecture methods, we encourage active participation from students during lectures. This engagement allows students to seek clarifications and engage in real-time discussions, fostering a deeper understanding of the subject matter.

ICT Based Learning:

Enhanced Information Delivery:

ICT-based learning plays a pivotal role in enriching the quality of education and teaching. To this end, we leverage various ICT tools and platforms to enhance information delivery.

Tools and Platforms:

Our program incorporates a variety of ICT-based learning tools, including multimedia projectors, Smart Boards, PowerPoint presentations, Google Classroom, MOODLE (Learning Management System), and VMEDULIFE (Campus Management System).

Seminars:

We allocate dedicated seminar hours in our timetable to facilitate enhanced learning and to keep students updated with rapidly evolving technology.

Collaborative Learning:

Interactive Learning:

Collaborative learning is a cornerstone of our approach, wherein groups of students collaborate to analyze and apply concepts interactively. This fosters a deeper understanding and knowledge retention.

Involvement of Student Groups:

We actively involve student groups in collaborative learning exercises, technical quizzes, and project work to encourage teamwork and critical thinking.

Value-Added Courses:

To further promote learning and skill development, we conduct value-added courses. These courses provide students with opportunities for specialized training, often guided by industry experts.

Beginners/Freshers Connect Program:

Bridge Courses:

At the commencement of each academic year, we offer bridge courses for fundamental science subjects like mathematics, physics, chemistry, and engineering graphics. These courses help incoming students recall and comprehend core theories, ensuring a strong foundation.

Faculty Orientation:

At the beginning of every semester, newly appointed faculty members undergo orientation to familiarize themselves with teaching methods and pedagogical strategies.

Bloom's Taxonomy:

Faculty members are also introduced to Bloom's taxonomy objectives to enhance their educational activities and facilitate more effective teaching.

Through the adoption of these diverse instructional planning and delivery methods, we aim to create an engaging, interactive, and effective learning environment that prepares our students for success in their academic pursuits and future careers

C. Methodologies to support weak students and encourage bright students (4)

Every student possesses unique learning attitudes and habits. It is crucial to adapt teaching methods and strategies to cater to the diverse needs of students, ensuring that neither slow learners are left behind nor advanced learners are held back. This process manual serves as a comprehensive guide to facilitate the development of effective strategies for both slow and advanced learners, while also addressing the needs of average learners.

Process to Identify Slow and Advanced Learners:**Slow Learners:**

Students who score below 40% in-class tests and face challenges in assignments, class participation, responsiveness, general awareness, and attentiveness will be classified as slow learners.

Advanced Learners:

Students who consistently score above 60% in-class tests and excel in assignments, class participation, responsiveness, general awareness, and attentiveness will be categorized as advanced learners.

SLOW LEARNERS

To identify slow learners:

Review class test results below 40%.

Track absenteeism.

Observe classroom participation.

Collaborate with teachers.

Maintain a list of challenges.

Activities for Slow Learners:

Remedial Classes:

Conduct focused sessions.

Explain, give examples, and practice.

Retesting:

Offer retests in areas of struggle.

Ensure comfortable conditions.

Assignments:

Customize tasks for learning needs.

Encourage critical thinking.

Peer Group Support:

Pair with classmates excelling in subjects.

Peer mentors provide extra help.

Monitoring of Slow Learners:

Involve subject teachers:

Update them on progress.

Use a monitoring format:

Track attendance, participation, and improvement.

Implement a mentorship program.

Assign mentors for guidance:

Conduct progress meetings.

Involve parents:

Regularly update them.

Seek their input.

Encourage continuous feedback:

Modify strategies as needed.

ADVANCED LEARNERS:

Identification of Advanced Learners:

- Identify based on academic performance (above 60%) and attendance.
- Collaborate with subject teachers.
- Maintain a database of achievements and interests.

- Regularly communicate to understand aspirations.

Motivating Participation in Technical Events:

- Keep them informed about upcoming events.
- Provide event selection guidance.
- Encourage group participation.
- Acknowledge achievements through awards.

Encouraging Online Certification Programs:

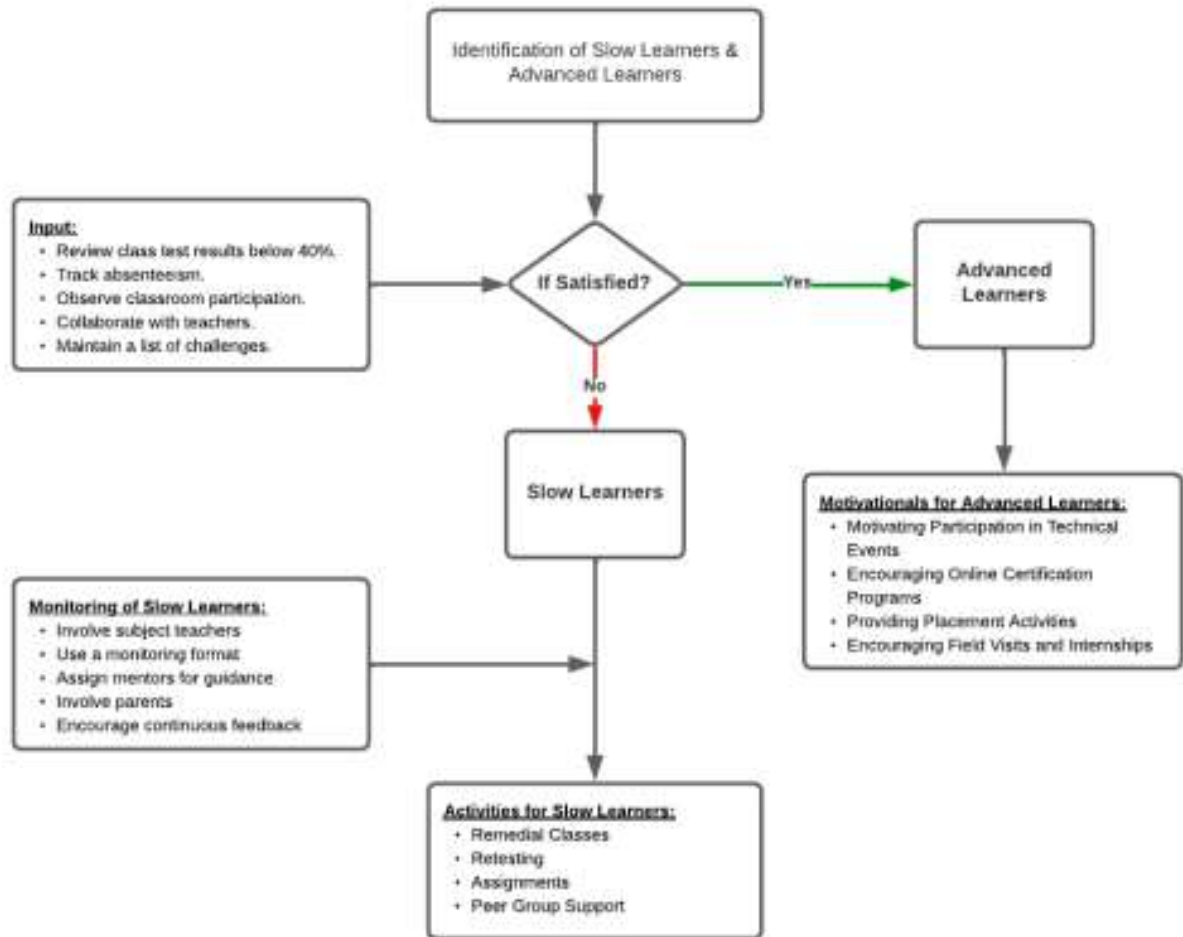
- Explore MOOC courses on platforms like NPTEL, SPOKEN TUTORIAL, CISCO, etc.
- Select courses aligning with your academic interests and career goals.
- Manage your time effectively to balance coursework and certification requirements.

Providing Placement Activities:

- Offer career guidance.
- Enhance interview skills.
- Facilitate networking events.
- Collaborate with industries for placements.

Encouraging Field Visits and Internships:

- Organize industry visits.
- Facilitate internships.
- Connect with mentors.
- Promote learning reflection and sharing.



D. Quality of classroom teaching

Quality teaching is essential for effective learning. To ensure high-quality classroom teaching, the following aspects are prioritized:

Interactive Classroom Ambience:

- Classrooms are designed to foster interaction among students.
- Visual aids, group activities, and discussions create an engaging learning environment.

Smart Board Integration:

- Smart boards are installed institution-wide to enhance teaching.
- Faculty members use this technology to make lessons engaging and interactive, capturing students' attention.

Real-world Learning with Smart Boards:

- Smart boards enable faculty to create dynamic, real-world learning experiences.
- These boards facilitate real-time assessment and practical learning.

Collaborative Problem Solving:

- Complex tutorial problems are tackled collaboratively in classrooms.
- Faculty and students work together, promoting teamwork and critical thinking.

Administrative Observations:

- Regular visits by the Principal, Dean of Academics, and Head of Department.
- Observations help improve teaching quality, and valuable feedback is conveyed to faculty members.

Student Engagement:

- Students are encouraged to present short "Snap Talks" during class hours, enhancing their communication skills and confidence.

Hands-on Learning:

- Faculty bring real components and models to classrooms for clear concept demonstrations.
- This hands-on approach aids students' comprehension.

Class Committee Meetings:

- Regular meetings are conducted to monitor and evaluate classroom teaching quality.
- Collaborative efforts with faculty and student representatives identify areas for improvement.

Feedback Collection:

- Feedback from students is collected mid-semester and at the end of each semester for all courses.
- This feedback helps evaluate the teaching and learning process and informs improvements.
- Prioritizing these aspects ensures that classroom teaching is dynamic, engaging, and continuously improved to benefit both faculty and students.

E. Conduct of experiments

To facilitate effective experimentation, the following procedures are meticulously followed:

Group Division and Lab Allocation:

- The class is divided into two groups: Group A and Group B.
- Alternate use of laboratory facilities is scheduled to ensure efficient utilization; for instance, when Group A utilizes Lab 1, Group B uses Lab 2, and vice versa.
- Lab sessions are meticulously scheduled, and students are informed of their allocated lab sessions in advance.

Batch Formation:

- Each group is further divided into batches consisting of 3 to 5 students.
- This allows for efficient management and supervision during practical sessions.

Preparation and Instruction:

- Comprehensive laboratory manuals and course plans are developed before each semester.
- Students receive detailed instructions on experimental procedures and safety protocols before commencing practical sessions.

Data Recording and Accuracy:

- Students are provided with lab observation notebooks to record readings and calculations during experiments.
- The significance of accurate data collection is emphasized, and students are well-versed in the format and guidelines for recording observations.

Transcription and Verification:

- Following experiments, students transcribe their observations and results into their lab record notebooks.
- In subsequent classes, thorough verification and authentication of entries are conducted to ensure data accuracy.

Additional Experiments:

- Beyond the curriculum, students are encouraged to conduct additional experiments to enhance their practical knowledge and design capabilities.

Faculty and Lab Personnel Duties:

Faculty members in charge and lab assistants play pivotal roles by:

- Regularly inspecting and maintaining laboratory equipment for functionality and safety.

- Reporting any faulty equipment for prompt repair or replacement.
- Maintaining an up-to-date inventory of all lab equipment and materials.
- Keeping records of batch assignments, lab schedules, and student attendance.
- Continuously updating and improving laboratory manuals and course plans based on student feedback and evolving educational requirements.

By adhering to these systematic procedures, the institution ensures the smooth and efficient conduct of experiments, fostering a conducive environment for hands-on learning and practical skill development.

F. Continuous Assessment in the laboratory

In accordance with SBTE guidelines, practical courses undergo continuous assessment, combining both Internal and External marks, as outlined in the SBTE Syllabus.

Continuous Assessment Components:

Completion of the Experiment:

Regular progress in conducting experiments.

Periodic Submission of Observation and Record:

Timely submission of comprehensive observations and records.

Individual Experiment Evaluation:

In-depth assessment involving parameters such as Theoretical Concept, Experimental Execution, Viva-Voce, and Record Note.

Internal Assessment (A):

Individual Experiment Evaluation (out of 50 marks):

- Detailed Parameters for Evaluation.
- Evaluation criteria encompass Theoretical Concept, Experimental Execution, viva voce, and Record Note.

Model Examination:

- A model exam was conducted, accounting for 50 marks.

Calculation of Internal Marks:

- Final internal marks were derived from consolidating experiment marks and model exam results, with a total of 100 marks.

- The total of 100 marks will be converted to the value of the internal marks specified in the SBTE-prescribed syllabus.

External Assessment (B):

- External marks assigned during end-semester practical examinations.
- Evaluation by an external examiner designated by SBTE, Bihar, following predefined criteria.

Overall Laboratory Assessment:

- Total marks for a student in a laboratory course are determined by adding an Internal Mark (A) and an External Mark (B).
- The pass marks for laboratory exams are subject-specific and are outlined in the SBTE syllabus.

G. Student feedback of teaching-learning process and action taken

"Student Feedback of Teaching-Learning Process and Action Taken" is a vital mechanism in our educational institution, enabling continuous improvement and accountability. Through structured feedback collection and a proactive approach, we aim to enhance the teaching and learning experience. This process empowers both students and faculty to collaboratively work towards achieving excellence in education.

1. Purpose of Student Feedback:

Student feedback serves several critical purposes:

- To assess the effectiveness of the teaching-learning process.
- To identify areas for improvement in course delivery.
- To address classroom-related issues and grievances.
- To foster continuous enhancement in teaching methods.

2. Feedback Collection Process:**a. Mid-Semester Feedback:**

- Collected to proactively identify and address concerns early in the semester.
- Allows for prompt adjustments to enhance the teaching-learning experience.

- Provides insight into initial student experiences and perceptions.

b. End-of-Semester Feedback:

- Offers a comprehensive assessment of the entire semester, aiding in the evaluation of the overall teaching and learning journey.

c. Student Feedback Questions:

Students are asked to provide feedback on various aspects using a 4-point scale:

- Punctuality of the teacher.
- Coverage of relevant topics beyond the syllabus.
- Effectiveness in delivering technical/content.
- Communication skills.
- Use of teaching aids.
- Motivation to learn.
- Support for practical demonstration skills.
- Support for hands-on training.
- Commitment to self-improvement based on feedback.
- Willingness to offer help and advice to students.
- Consistency in evaluating and returning assignments and test papers.
- Syllabus coverage as per SBTE guidelines.
- Classroom discipline and control.
- Syllabus completion as per SBTE syllabus.
- Any additional feedback or grievances.

Participation Rate:

Measures the percentage of students participating in the feedback process.

Formula: Participation Rate (%) = (Number of Students Participating / Total Number of Students) x 100.

Benchmark: Maintaining a participation rate of 80% or higher is required.

3. Action Taken on Feedback:

a. Target Performance:

- Faculty members are expected to meet or exceed a target performance level of 75% or above based on student feedback scores.

b. Explanation Letter:

- Faculty members falling below 75% must provide an explanation letter to the Dean of Academics and the Principal through the Head of the Department (HOD).

c. Warning Letter:

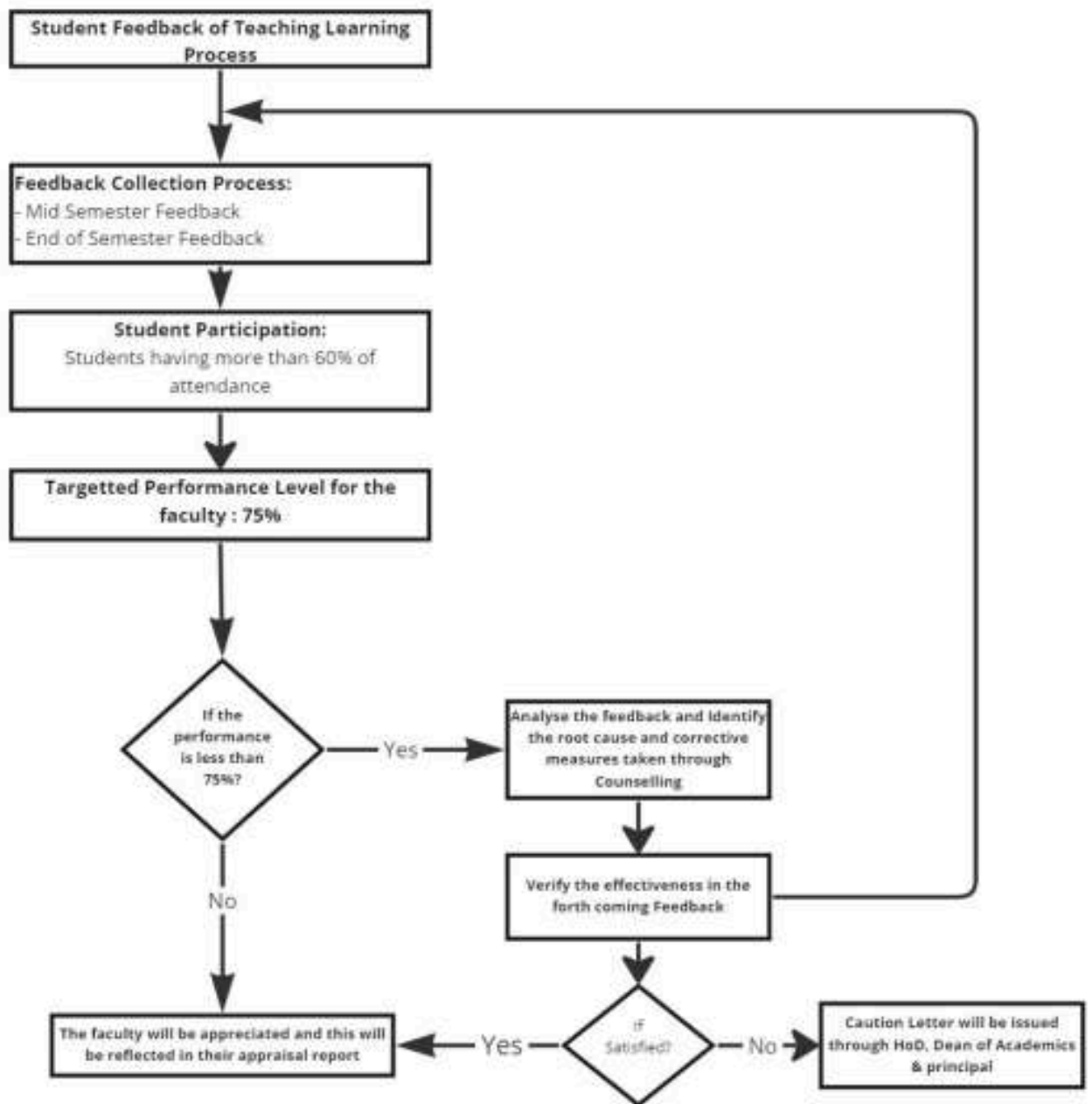
- If performance remains unsatisfactory despite the initial feedback and explanation letter, a warning letter is issued to the faculty member by the Principal through the Dean of Academics.

d. Monitoring and Evaluation:

- Continuous monitoring and evaluation of faculty members' progress throughout the semester.
- A second feedback round is conducted at the semester's end to assess improvements.

4. Reporting and Communication:

- Feedback scores and any letters of explanation or warning are communicated to faculty members through official channels.
- Involvement of the Principal, Dean of Academics, and HOD in the communication process ensures transparency and accountability.



2.2.2 Initiatives to improve the quality of semester tests and assignments

A. Process for Internal semester question paper setting and evaluation and effective process implementation

Establishing a seamless and meticulous process for internal semester question paper setting and evaluation is paramount to ensuring the quality and fairness of assessments. In this endeavor, effective process implementation plays a crucial role in upholding academic standards and promoting student success.

Exam Schedule Preparation:

The Exam cell meticulously plans the test date schedule, aligning it with the academic calendar, and includes three Class tests and one optional Model Exam. Consideration is given to SBTE Bihar Exam schedules to avoid conflicts.

Syllabus-Based Question Paper Formation:

Question papers are meticulously designed to align with the syllabus coverage for each test:

- Class Test 1: Encompasses the initial 30% of the entire syllabus.
- Class Test 2: Covers the subsequent 35% of the entire syllabus.
- Class Test 3: Targets the remaining 35% of the entire syllabus.
- Model Exam: Encompasses 100% of the entire syllabus.

Question Paper Preparation:

- Respective subject-handling faculties collaborate to create question papers, ensuring comprehensive coverage of topics.
- The question papers undergo thorough verification and approval by the Head of the Department (HOD) to maintain quality and consistency.
- Approved question papers are promptly submitted to the Exam Cell.

Question Paper Format:


Internal question papers adhere to the standards set by SBTE for end-semester question papers.

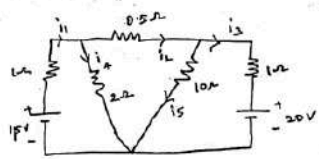
Format for Class Test 1, 2 & 3:

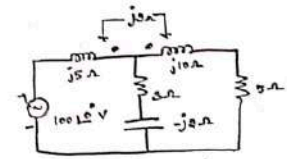
- Part-A: 11 Questions x 1 Mark = 11 Marks
- Part-B: 3 Questions x 4 Marks = 12 Marks (Either/or Options)
- Part-C: 2 Questions x 6 Marks = 12 Marks (Either/or Options)
- Total: 35 Marks

Format for Model Exam:

- Part-A: 20 Questions x 1 Mark = 20 Marks
- Part-B: 5 Questions x 4 Marks = 20 Marks (Either/or Options)
- Part-C: 5 Questions x 6 Marks = 30 Marks (Either/or Options)
- Total: 70 Marks

 GEMS POLYTECHNIC COLLEGE Electrical Engineering [2023-24]			
Class Test - I			
Subject: [2020604A] Network Theory(2020604A) - Theory Faculty: Ganeshbabu M Batch; No dataavailable Year: Third Year - SIXTH SEMESTER Marks 35 Date: 20 March, 2024 Duration: 100 Minutes			
Instructions * Carefully read all questions before commencing your answers. * Draw neat diagram wherever necessary. * Ensure the use of appropriate units and symbols in your responses. * For problems involving calculations, demonstrate your step-by-step working.			
Question	Marks	Course Outcome	Blooms Level
Part A Answer all questions 11 x 1 = 11 marks			
1. Which of the following is linear element? a. Semiconductor Diode b. Heater coil c. Transistor d. Electric Arc	1.00	CO 315.4	Understand
2. Which of the following is Passive elements a. Transistor b. OP AMP c. Resistor d. Generator	1.00	CO 315.1	Remember
3. During Steady state condition, inductor behaves as a. Open Circuit b. Short Circuit c. Capacitor d. None of these	1.00	CO 315.1	Remember
4. Kirchhoff's Voltage law is concerned with a. Junction Voltage b. IR Drops c. Battery EMF's d. Both a & b	1.00	CO 315.1	Understand
5. Which is the best preferred method to calculate currents following in the circuit a. Superposition Principle b. Mesh voltage Analysis c. Node Current Analysis d. None of these	1.00	CO 315.1	Apply
6. If there are 3 branches & 4 nodes in a network, the no. of mesh equations are: a. 1 b. 4 c. 1 d. 3	1.00	CO 315.1	Apply
7. The AC power in a purely resistive circuit zero when a. Voltage is Zero b. Current is Zero c. Both Current & Voltage are Zero d. Either Current or Voltage is zero	1.00	CO 315.3	Understand

8. The Quality factor of RLC series circuit can be increased by increasing the value of a. Resistance b. Inductance c. Capacitance d. All of the above	1.00	CO 315.3	Apply
9. In Pure inductive circuit, the power factor is a. Infinity b. Max c. Min d. Zero	1.00	CO 315.3	Remember
10. The value of current flowing in a RLC series during Resonance is a. Max b. Min c. Zero d. Infinity	1.00	CO 315.3	Remember
11. At parallel resonance, a parallel resonant circuit has power factor. a. Zero b. 0.5 c. Unity d. Infinite	1.00	CO 315.3	Understand
Part B Answer all questions 3 x 4 = 12 marks			
12.(a) What are the standard input signals? Explain with neat diagram. <i>(OR)</i>	4.00	CO 315.1	Understand
12.(b) What is an RMS value of an AC quantity? Obtain expression for the RMS value of a sinusoidal current in terms of its maximum value.	4.00	CO 315.1	Apply
13.(a) What do you mean by Source transformation? Explain with Example. <i>(OR)</i>	4.00	CO 315.1	Understand
13.(b) What are the steps for writing node equations in matrix form. Explain it.	4.00	CO 315.1	Apply
14.(a) Derive the expression of resonant frequency for a series RLC circuit. <i>(OR)</i>	4.00	CO 315.3	Apply
14.(b) Explain the phenomenon of parallel resonance.	4.00	CO 315.3	Understand
Part B Answer all questions 2 x 4 = 12 marks			
15.(a) Find the various branch currents in the passive element of the network shown in figure. 	6.00	CO 315.1	Apply

15.(b) Find the current in 1-ohm resistance in the magnetically coupled circuit shown in figure. <i>(OR)</i> 	6.00	CO 315.1	Apply
16.(a) A series RLC circuit consists of a resistance of 1 k ohm, an inductance of 10 mH and capacitance of 100 μF. For a supply voltage of 100 V, determine the following: (a) resonant frequency, (b) maximum current in the circuit, (c) Q factor of the circuit (d) Half-power frequencies <i>(OR)</i>	6.00	CO 315.3	Apply
16.(b) A choke coil (RL) is connected in series with a 2μF capacitor, supply voltage of 230V & circuit draws 55A when the resonance frequency is 50Hz. Calculate i. The resistance & inductance of coil ii. Voltage across capacitor <i>(OR)</i>	6.00	CO 315.3	Apply
CO 315.1	Describe the Circuit Elements & Solve the circuits using by Network Techniques.		
CO 315.3	Compare & Solve the RLC elements using resonance circuits.		
Faculty in charge <i>(GANESH BABU M)</i>	HOD/EE <i>(MR. WIN RAJ K)</i>		

Lecturer
Dept. of Electrical Engineering
GEMS Polytechnic College
Ratanpura, Aurangabad
Bihar-824121.

HOD
Dept. of Electrical Engineering
GEMS Polytechnic College
Ratanpura, Aurangabad

Answer Key Preparation:

- Faculty members take responsibility for preparing the answer keys for internal tests, ensuring accuracy and consistency.

Evaluation and Result Analysis:

- Faculty members commit to evaluating answer scripts within a 3-day window from the test date, maintaining efficiency and timeliness.
- Result analysis is meticulously conducted and submitted to the HOD for review and action.
- Evaluated answer scripts are promptly distributed to students, fostering transparency and understanding.
- Classroom discussions led by faculty members enable students to comprehend their performance and the correct answers effectively.
-
- This comprehensive process ensures the effective implementation of the internal semester question paper setting and evaluation, promoting fairness, quality, and academic excellence.

B. Question paper setting taking into account outcomes/learning levels

The process of setting question papers is a vital aspect of assessing students' subject knowledge, analytical skills, design aptitude, and their ability to justify their responses. It is essential to align these assessments with the intended learning outcomes. To achieve this, questions are crafted following Bloom's Taxonomy, ensuring a holistic evaluation of students' cognitive abilities.

Question Paper Setting:**Three Class Tests for Theory Courses:**

- In each semester, three Class Tests are conducted for theory courses, providing multiple opportunities for students to demonstrate their understanding and skills.

Alignment with Course Outcomes (COs):

- Question papers are meticulously designed to encompass all Course Outcomes (COs) for theory courses over the course of the three Class Tests.
- Faculties are instructed to create questions based on the COs distributed unit-wise.

Inclusion of COs and Bloom Level:

- To enhance clarity and transparency, question papers include references to the corresponding Course Outcomes (COs) and specify the Bloom level associated with each question, aligning the assessment with learning objectives.

Structured Evaluation:

- During the evaluation process, marks allocated for each question are entered question-wise on the answer sheet's front page.
- Additionally, the corresponding question's CO number is mentioned, facilitating a comprehensive assessment of students' attainment of learning outcomes.
- This approach ensures that the question paper-setting process is tightly aligned with the intended learning outcomes, enabling a thorough evaluation of a student's cognitive skills and subject knowledge.

C. COs coverage in-class tests / mid-term tests and assignments

A crucial aspect of effective pedagogy is ensuring that the learning objectives are met through various assessments. In our educational institution, the mapping of Class Tests, Mid-Term Tests, and Assignments with Course Outcomes (COs) is meticulously executed to gauge students' progress and attainment of desired learning outcomes.

Mapping of Class Tests with Course Outcomes (COs):

To comprehensively assess student performance and align with the syllabus coverage, questions in Class Tests are thoughtfully linked with specific Course Outcomes (COs) as follows:

- Class Test 1: Encompasses the initial 30% of the syllabus.
- Class Test 2: Covers the subsequent 35% of the syllabus.
- Class Test 3: Addresses the remaining 35% of the syllabus.

This structured approach ensures that students are evaluated on the entirety of the curriculum, with their performance reflecting the achievement of COs throughout the semester.

Mapping of Assignments with Course Outcomes (COs):

- Assignments play a pivotal role in reinforcing learning and enhancing students' skills. The alignment of assignments with Course Outcomes (COs) is a deliberate process to promote holistic development. Here's how it is implemented:

Two Assignments with Clear Timelines:

- Students are given two assignments, each carrying 25 marks, which are scheduled before Class Test 2 (covering 50% of the syllabus) and before Class Test 3 (completing 100% of the syllabus). These assignments are to be submitted within a week, encouraging timely completion.

CO-Based Mapping:

- Assignments are carefully mapped with specific COs based on the nature of the questions. This alignment ensures that assignments address the intended learning outcomes effectively.

Emphasis on Skill Enhancement:

- Faculty members emphasize the significance of assignments in enhancing students' technical competence, vocabulary, presentation skills, and writing proficiency. Assignments encompass various formats, including Class Mini Project Models, Posters, Subjective/Descriptive Questions and Answers, Multiple Choice Test Questions, Seminars/Presentations, and Reports on Industry Visits.
- This approach not only facilitates comprehensive evaluation but also aids in reinforcing learning objectives and fostering skill development among our students.

2.2.3 Quality of Experiments**A. Experimental methodologies****Write Answer:**

- Quality is a paramount aspect of any educational institution's laboratory experiments. The effectiveness of these experiments is essential in shaping the practical skills and knowledge of students. In this regard, our institution places significant emphasis on ensuring the quality of experiments through various measures and strategies.

A. Experimental Methodologies

Expert Involvement: Our experiments are conducted under the guidance of experienced subject lecturers, ensuring that students receive the best practical knowledge from experts in the field.

Equipment Maintenance: To maintain the quality of experiments, laboratory assistants regularly inspect and maintain the laboratory equipment. This proactive approach ensures that students work with reliable instruments, enhancing the learning experience.

Logbook Maintenance: Throughout the year, detailed logbooks are maintained in the laboratories. These records not only track the progress of experiments but also serve as valuable resources for students to refer to in the future.

Consumables Planning: Prior to each semester, the laboratory anticipates the consumables required for experiments. This foresight helps in conducting practical sessions smoothly, without interruptions.

Maintenance Communication: Any repair or maintenance needs related to the laboratory are promptly communicated to the principal, ensuring a safe and conducive learning environment for students.

B. Innovative experiments including industry-attached practices, and virtual labs (05)

Write Answer:

Beyond Syllabus Experiments: In a bid to enhance students' practical skills and knowledge, experiments that go beyond the syllabus are regularly conducted. This approach fosters a spirit of exploration and curiosity among students.

State-of-the-Art Laboratories: Well-equipped laboratories are provided to students, enabling them to acquaint themselves with the latest technology and tools used in their respective fields.

Industry Practices: Real-time industry procedures are adopted wherever feasible in the laboratory. This bridges the gap between academic learning and industry demands, preparing students for the workforce effectively.

Virtual Labs Integration: To facilitate better understanding and remote learning, our institution leverages virtual labs, including resources from IITs. These virtual labs include video lectures and animated demonstrations, enriching students' knowledge beyond the physical laboratory.

Accessible Resources: A curated list of experiments under virtual labs, along with their web links, is readily available to students. This valuable resource is shared with students and is accessible on the department's official website, enhancing accessibility and convenience.

C. Relevance to outcomes**Write Answer:**

- Every experiment conducted in our laboratories is meticulously mapped to the corresponding Course Outcomes (COs) and Program Outcomes (POs)/Program Specific Outcomes (PSOs). This mapping ensures that the experiments directly contribute to achieving the educational objectives set by the institution. It allows us to assess and measure the effectiveness of each experiment in meeting the intended learning outcomes.
- In conclusion, the quality of experiments in our institution is a product of careful planning, expert guidance, innovative practices, and a strong focus on aligning with desired educational outcomes. We are committed to providing our students with the best possible laboratory experience, equipping them with the skills and knowledge necessary for success in their academic and professional journeys.

2.2.4. Quality of Student Projects and Report Writing**A. Identification of projects and allocation methodology****Write Answer:**

- At GEMS Polytechnic College, we recognize that true learning goes beyond the classroom, and one of the most effective ways to validate and apply the knowledge acquired by our students is through project work.
- We place great importance on the quality and execution of student projects as they not only deepen the understanding of subjects but also provide invaluable hands-on experience in translating theoretical knowledge into practical applications.
- Our project teams, consisting of 4 to 6 students each, are guided by dedicated Faculty Guides who play a crucial role in helping the teams achieve their project objectives. Engaging in project work offers students several benefits, including:

Enhanced Subject Understanding:

- Project work leads to a more profound comprehension of the subject matter, allowing students to apply their knowledge in real-world scenarios.

Hands-On Practical Experience:

- Students gain practical experience, honing their skills and competencies by working on tangible projects.

Opportunity to Showcase Skills:

- Projects provide students with a platform to exhibit their skills and creativity, fostering a sense of accomplishment.

Teamwork and Communication Development:

- Collaborative project work promotes teamwork and communication skills, essential attributes in today's professional landscape.

Project Allocation Methodology

- Our approach to project allocation is systematic and comprehensive:

Assignment of Project Coordinator:

- At the beginning of each academic year, the Head of the Department (HOD) appoints a Project Coordinator to oversee the project allocation process.

Diverse Team Formation:

- The Project Coordinator assembles project teams with a balanced mix of students, including those with varying academic performance levels, such as Best, Average, and slower learners. This diversity ensures well-rounded project teams.

Guide Allocation:

- Faculty members with expertise in specific areas of specialization and fields of interest are assigned as guides to project batches, aligning the students' project topics with the faculty's knowledge and experience.

Project Identification in Zeroth Review

- Our zeroth review process ensures the selection of high-quality projects:

Multiple Project Ideas:

- Students are required to present a minimum of 2 to 3 project ideas or base papers that support their proposed project work.

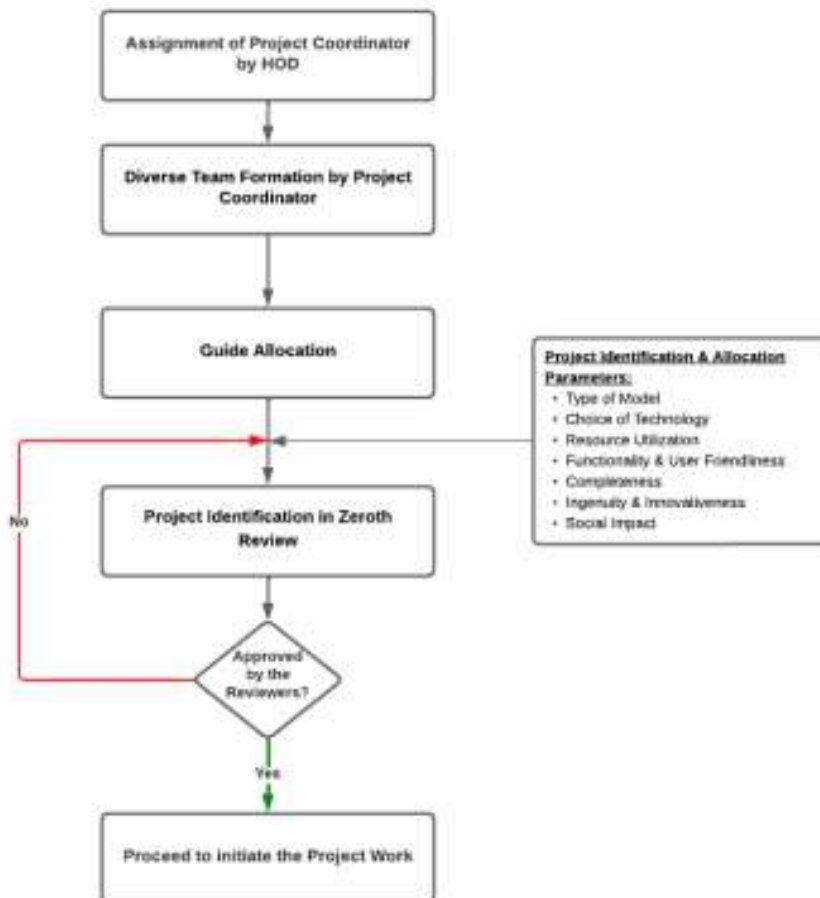
Presentation Standards:

- Project presentations must include a minimum of 7 slides, detailing the project's objectives, methodology, expected outcomes, and relevance.

Project Identification & Allocation Parameters

Project allocation is based on rigorous evaluation criteria and rubrics, including:

1. **Type of Model:** Assessing the appropriateness and suitability of the chosen project model.
2. **Choice of Technology:** Evaluating the selection of technology in line with project goals.
3. **Resource Utilization:** Ensuring optimal use of available resources and materials.
4. **Functionality & User Friendliness:** Evaluating the project's functionality and user-friendliness.
5. **Aesthetic and Completeness:** Assessing the overall aesthetics and completeness of the project, including documentation.
6. **Ingenuity & Innovativeness:** Recognizing creativity and innovation in project design.
7. **Social Impact:**
 - Analyzing the potential social impact of the project on the community or industry.
 - Projects are subject to final approval by a reviewer committee, which thoroughly evaluates them based on the parameters mentioned above.
 - This stringent evaluation process ensures that our students engage in meaningful, relevant, and high-quality project work, contributing to their holistic development and future success in their chosen fields.



B. Types and relevance of the projects and their contribution towards the attainment of POs and PSOs

Write Answer:

In the field of Electrical Engineering, projects play a pivotal role in enhancing students' learning experiences and preparing them for real-world challenges. These projects span across various domains, each contributing uniquely to the attainment of Course Outcomes (COs) and Program Outcomes (POs) / Program Specific Outcomes (PSOs). Let's explore the relevance of projects in different Electrical Engineering domains and their alignment with COs, POs, and PSOs.

Domains in Electrical Engineering with Relevant Projects:

- HomeAutomation using IoT

- Battery Management System using Arduino
- Smart Energy Meter using GSM
- Implementation of a Web of Things Based Smart Grid to Remotely Monitor and Control Renewable Energy Source
- Home Automation System
- Enerbee - Example of an Advanced Metering Infrastructure based on Zigbee
- Solar & Smart Energy Systems
- Power Factor Metering System using Arduino
- Automatic Solar Tracker
- Using Arduino Development Platform in the Diagnosis of AC Electrical Machines
- Arduino Projects
- Design and Implementation of Real Time Transformer Health Monitoring System using Gsm Technology
- Smart Energy Projects-
- Design and Implementation of Advanced Security System - Invisible Eye (Power Saving System)
- PCB Manufacturing
- Foot Step based Power Generation and Multi-Purpose Optimization
- MATLAB for Engineers
- Universal Electrical Power Generation & Multipurpose Optimization – Solar, Wind and Rain
- Digital Signal Processing using MATLAB
- Electrical Substation Scrutinizing and Controlling Device from Remote Area
- Simscape Electrical using MATLAB
- Wireless Power Transmission
- Image Processing using MATLAB
- Transformer Industrial Parameters Management Control System and Intimation to Electricity Board
- Advanced Image Processing using MATLAB
- Online Speed Control of DC Motor with High Speed Network
- Digital Signal Processing using Python
- Energy Scrutiny System With Auto Load
- Circuit Design with Proteus
- Talking Energy Meter
- PCB Design and Simulation with KiCAD

- MicroControllerbasedIntelligent Multi Timer System for Industrial Automation
- Lab VIEW for Engineers
- Auto Digital-Speed Indicator with Speed Control
- PLC Programming for Engineers
- GSM and PIR Sensor based Light Controller and Networked Safety System
- Smart Traffic Lighting System
- Electric Field and Ultrasonic Sensor based Security System
- Automation using PLC
- Mobile Controlled DC Motor Speed Controller Similar many on related to branch.

Contribution to Course Outcomes (COs):

CO1: Identify and define the problem and technology to be adopted

- Students learn to identify engineering problems specific to their project domain.
- They gain knowledge of relevant technologies and their applications.

CO2: Function as a team in the planning and execution of the project work

- Projects necessitate teamwork, enhancing collaboration and communication skills.
- Planning and execution involve project management, time, and resource allocation.

CO3: Apply appropriate knowledge of engineering to achieve identified objectives of the project

- Students apply theoretical and practical engineering knowledge to solve real-world problems.
- They adapt their skills to meet project objectives.

CO4: Fabricate a demonstrable output

- Project work often culminates in a physical or functional prototype, demonstrating their problem-solving abilities.

Alignment with Program Outcomes (POs) and Program Specific Outcomes (PSOs):

Every project undertaken is carefully mapped to the respective POs and PSOs of the Electrical Engineering program. This ensures that students are not only acquiring technical expertise but also developing skills and competencies in line with the broader program objectives. Each project contributes to the program's mission of producing well-rounded and capable Electrical Engineers ready to address the challenges of the industry.



Mapping of Projects to POs/PSOs (2023-2024):

Sl.No	Name of the student	Register Number	Project Type	Project Title	Project Guide	Relevance of PO's / PSO's	Relevant SDG's
1	1. Mathew S Musa 2. Harsh Kumar 3. Sonu Kumar 4. Pawan Kumar	1992021401 1992021031 1992021043 1992021039	Business Based	Designing an energy-saving device	Mr. Ganeshbabu M	PO's-1,2,3,4,5,6,7 PSO's-1&3	SDG-1, SDG-7, SDG-9

	5. Aman Kumarr	1992021026		utilizing a Passive Infrared (PIR) sensor.			
2	1. Aman Kumar Rai 2. Sandeep Kumar 3. Shivkesh Kumar 4. Himanshu Kumar 5. Nitesh Kumar 6. Prince Raj	1992021027 1992021016 1992021019 1992021032 1992021037 1992021041	Business Based	Bluetooth Operated Home Automation	Mr. Bhaskar Ranjan	PO's-1,2,3,4,5,6,7 PSO's-1,2,3	SDG-9 , SDG-11
3	1. Akash Kumar 2. Anurag Kumar 3. Himanshu Kumar 4. JayShree Kumari 5. Chandan Kumar	1992021015 1992021028 1992021008 1992021034 1992021030	Community Based	Creating a smart home system employing IoT technology for automation and control.	Mr. Ganeshbabu M	PO's-1,2,3,4,5,6,7 PSO's-1,2,3	SDG-3 , SDG-4, SDG-5
4	1. Raj Kumar 2. Sumit Kumar 3. Ankit Kumar 4. Sandeep Kumar 5. Ranjan Kumar	1992021012 1992020032 1992021003 1992020027 1992020038	Community Based	LED Street light control with Power Saver	Mr. Anugrah Ashish	PO's-1,2,3,4,5,6,7 PSO's-1,2,3	SDG-9 , SDG-12
5	1. Sachin Kumar 2. Sandeep Kumar 3. Aryan Singh 4. Sneha Kumari 5. Manjit Kumar	1992021015 1992021017 1992021004 1992021020 1992021009	Business Based	Solar wireless Electric Vehicle charging System	Mr. Bhaskar Ranjan	PO's-1,2,3,4,5,6,7 PSO's-1,2,3	SDG-7 , SDG-9, SDG-11

6.	1. Sushil Kumar 2. MD Ramjan Sarwar 3. MD Sayeed Anwar 4. Bittu Kumar 5. Manish Kumar	1992020034 1992020015 1992020013 1992019023 1992020602	Business Based	Battery Management system using Arduino	Mr. Jabas Edwin Raj	PO's-1,2,3,4,5,6,7 PSO's-1&3	SDG-9 , SDG-13
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Mapping of Projects to POs/PSOs (2022-2023):

Sl.No	Name of the student	Register Number	Project Type	Project Title	Project Guide	Relevance of PO's / PSO's	Relevant SDG's
1	1. Piyush Kumar Verma 2. Piyush Kumar 3. Prem Kumar 4. Sakshee Priya 5. Shriram Kumar	1992020017 1992020016 1992020018 1992020025 1992020040	Business Based	Automated Trimmer	Mr. Bhaskar Ranjan	PO's-3, 2,6 PSO's-2	SDG-9 , SDG-8, SDG-12
2	1. Dheeraj Kumar Sonu 2. Anjali Kumari 3. Riya Singh 4. Ashish Kumar	1992020010 1992020003 1992020022 1992020006	Business Based	Hot Flask	Mr. Simon Antipas	PO's-3, 6 PSO's-3	SDG-9 , SDG-3, SDG-12
3	1. Prince Kumar 2. Aditya Kumar 3. Shikha Kumari 4. Vikash Kumar	1992020019 1992020001 1992020029 1992020036	Community Based	Induction Hotpack	Mr. Simon Antipas	PO's-2, 3,6 PSO's-3	SDG-9 , SDG-8, SDG-12
4	1. Krishna Kumar Gupta 2. Arpit Kumar 3. Manish Kumar Singh 4. Nitesh Kumar Ram 5. Harsh Deep Khatri	1992020047 1992020005 1992020041 1992020048 1992020011	Community Based	Pulpit Timer	Mr. Catharine	PO's-3, 4,6 PSO's-2	SDG-9 , SDG-12

5	1. Suman Sourab 2. Abhishek Kumar LE-EE 3. Sheshpal Kumar 4. Supriya Kumari 5. Tannu Kumari	1992020031 1992020605 1992020604 1992020033 1992020045	Business Based	Stepper Motor Clock	Mr.Ganeshbabu M	PO's-3, 6 PSO's-3	SDG-9 , SDG-12
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Mapping of Projects to POs/PSOs (2021-2022):

S.no	Register Number	Name of the Student	Project Type	Project Title	Project Guide	Relevance of PO's / PSO's	Relevant SDG's
1	1992019039 1992019025 1992019027 1992019010 1992019026	1. Vikash Kumar 2. Ritikm Sagar 3. Amrendra Kumar 4. Roushan deep 5. Manikant Kumar	Community Based	Bio-gas power plant	Mr.Bhaskar Ranjan	PO's-2,4,6 PSO's-2	SDG-9 , SDG-8, SDG-12
2	1992019002 1992019003 1992019001 1992019004	1. Saloni Kumari 2. Beauty Kumari 3. Aakriteee Sinha 4. Shristi Kumari	Business Based	Home Automatio n System using Bluetooth	Mrs.Priya	PO's-3,6 PSO's-2	SDG-9 , SDG-12
3	1992019022 1992019005 1992019019 1992019020 1992019021	1. Sneha Bharathi 2. Machiniphi K 3. Beauty Bala 4. Khushi Kumari 5. Anjali Kumari	Business Based	Arduino self Drive Car	Mrs.Catharine	PO's-6 PSO's-3	SDG-9 , SDG-8, SDG-11, SDG-12
4	1992019045 1992019018 1992019040	1. Roushan kumar deep 2. MD Shadab Zafar	Community Based	Mobile controlled smart	Mr.R.Jabas Edwin Raj	PO's-3,6 ,7 PSO's-3	SDG-9 , SDG-8, SDG-11,

	1992019008 1992019006 1992019031	3. Abhishek Kumar 4. Shrawan kumar 5. Sorav Kumar 6. Amarjeet Kumar		irrigation pump			SDG-12
5	1992019043 1992019032 1992019012 1992019007 1992019009 1992019044	1. Badal Kumar 2. Pintu Kumar 3. Kapil Dev Kumar 4. Raju Kumar Dev 5. Saurabh Kumar 6. Abhishek Raj	Business Based	Smart Dustbin using Arduino	Mr.Vijaya Bhaskar	PO's-3,5,6 PSO's-3	SDG-9 , SDG-12
6	1992019034 1992019013 1992019030 1992019033 1992019014	1. Raju Kumar 2. Aman Kumar 3. Rohit Kumar 4. Ravi Ranjan Kumar 5. Harsh Kumar	Community Based	Automatic Water pump controller	Mr.Sumit Kumar Singh	PO's-3,4,6 PSO's-2	SDG-9 , SDG-12

Mapping of Projects to POs/PSOs (2020-2021):

Sl.No	Register Number	Name of the Student	Project Type	Project Title	Project Guide	Relevance of PO's / PSO's	Relevant SDG's
1	1993918003 1992018002 1992018018 1992018017	1. Ranjan Kumar 2. Shweta Kumari 3. Kaushal Kumar 4. Devashish Kumar	Community Based	Automatic Irrigation System For Home Garden	Mr. Dinesh Palappam SAPC	PO's-2,3,6 PSO's-3	SDG-9 , SDG-12, SDG-15
2.	1993918005 1992018006 1992018012 1992018007	1. Asif Ali 2. Ankit Kumar 3. Prabhat Kumar 4. Ashutosh Kumar Singh	Business Based	A line Following robot	Mr. Ragunath A	PO's-3,6 PSO's 2	SDG-9 , SDG-8 SDG-12

3.	1992018015 1992018016 1992018003	1. Nageshwar Kumar 2. Vidya Kumari 3. Sapna Kumari	Business Based	Human Presence detection Automation	Mr. Vijaya Bhaskar Karnika	PO's-3,4 ,6 PSO's-2	SDG-9 , SDG-12
4.	1993918002 1993918004 1992018005 1992018009	1. Shubam Raj 2. Golu Kumar 3. Naveen Kumar 4. Ayush sourabh	Business Based	GPC wings	Mr. Simon V Antipas	PO's-3,6 ,7 PSO's-1	SDG-9 , SDG-12
5	1992018013 1992018008 1993916602 1993916603	1. Nagmani Kumar 2. Vivek Kumar 3. Ashish Kumar 4. Md. Irshadul Haque	Business Based	All Terrain Vehicle with Magnetic Heading	Mr. Bhaskar Ranjan	PO's-3,6 PSO's 2	SDG-9 , SDG-12
6.	1993918601 1993918602 1992018011	1. Prashun Bharti 2. Jyoti Kumari 3. Rajeev Kumar	Business Based	GPS Clock with Humidity and temperature display.	Mr. Ragunath A	PO's-3,6 PSO's 2	SDG-3, SDG-9 , SDG-12

In conclusion, projects in Electrical Engineering span various domains and are instrumental in helping students achieve the Course Outcomes, while also contributing to the fulfillment of Program Outcomes and Program Specific Outcomes. These projects provide a comprehensive learning experience, equipping students with the knowledge, skills, and abilities required to excel in their future careers as Electrical Engineers.

C. Process for monitoring and evaluation

Write Answer:

The successful execution and assessment of student projects are critical aspects of the academic journey, ensuring that the intended objectives are met. This process involves a structured approach to monitor and evaluate student projects, providing a comprehensive view of their progress and quality. Here's an overview of the process:

Process for Monitoring

Review Schedule Establishment:

- At the beginning of the academic year, a tentative review schedule is prepared by the project coordinator.
- This schedule is approved by the Head of the Department (HOD) and displayed on the notice board for student reference.

Project Work Timetable:

- Weekly 2-4 hours are allotted in the timetable for project work to ensure dedicated time for project-related activities.

Regular Guidance:

- During the designated project hours, students are expected to regularly meet with their project guide to discuss and receive guidance on their project work.

Review Meetings:

- Three review meetings are scheduled during the semester to evaluate the progress and quality of the projects.
- During these reviews, students make a formal presentation to a committee, showcasing the progress made on their projects.

Marks Calculation:

- The total marks obtained in these three reviews are considered to decide on the overall performance of the project, contributing to the attainment of internal marks.
- The reviews are conducted as per the schedule with a team of panel members.

Student Project Diary:

- Continuous improvement in the project is tracked using the well-established student Project Diary, which contains various parameters, including project team details, general instructions, action plans, attendance records, weekly reports, and review performance along with rubrics.

Process for Evaluation

The evaluation process is an integral part of ensuring the quality and progress of student projects:

Progression Assessment:

- The progression and evaluation of the work are discussed at every review by the project committee members and the project coordinator.

These assessments and discussions are documented in the student project diary.

Assessment Criteria:

- Students are assessed based on the presentation and the progression of their work. Several rubrics are used to evaluate different aspects of the project at various stages.

Evaluation of Reviews:

Review #	Review Agenda	Rubrics parameter	Review Assessment Max. Marks
Review 1	Project Synopsis / Proposal Evaluation	Identification of problem & Analysis Objectives and Methodology of Project Proposal Study of Existing System and Feasibility of Project Innovativeness / The creativity of the idea/project Social responsibility Presentation (Technical Content, Communication, Body language)	30 Marks
Review 2	Mid-Term Project Evaluation	Design Methodology Planning of Project Work Demonstration and Presentation Team Work	20 Marks
Review 3	End Semester Internal Project Evaluation	Incorporation of Suggestions Project Demonstration	15 Marks

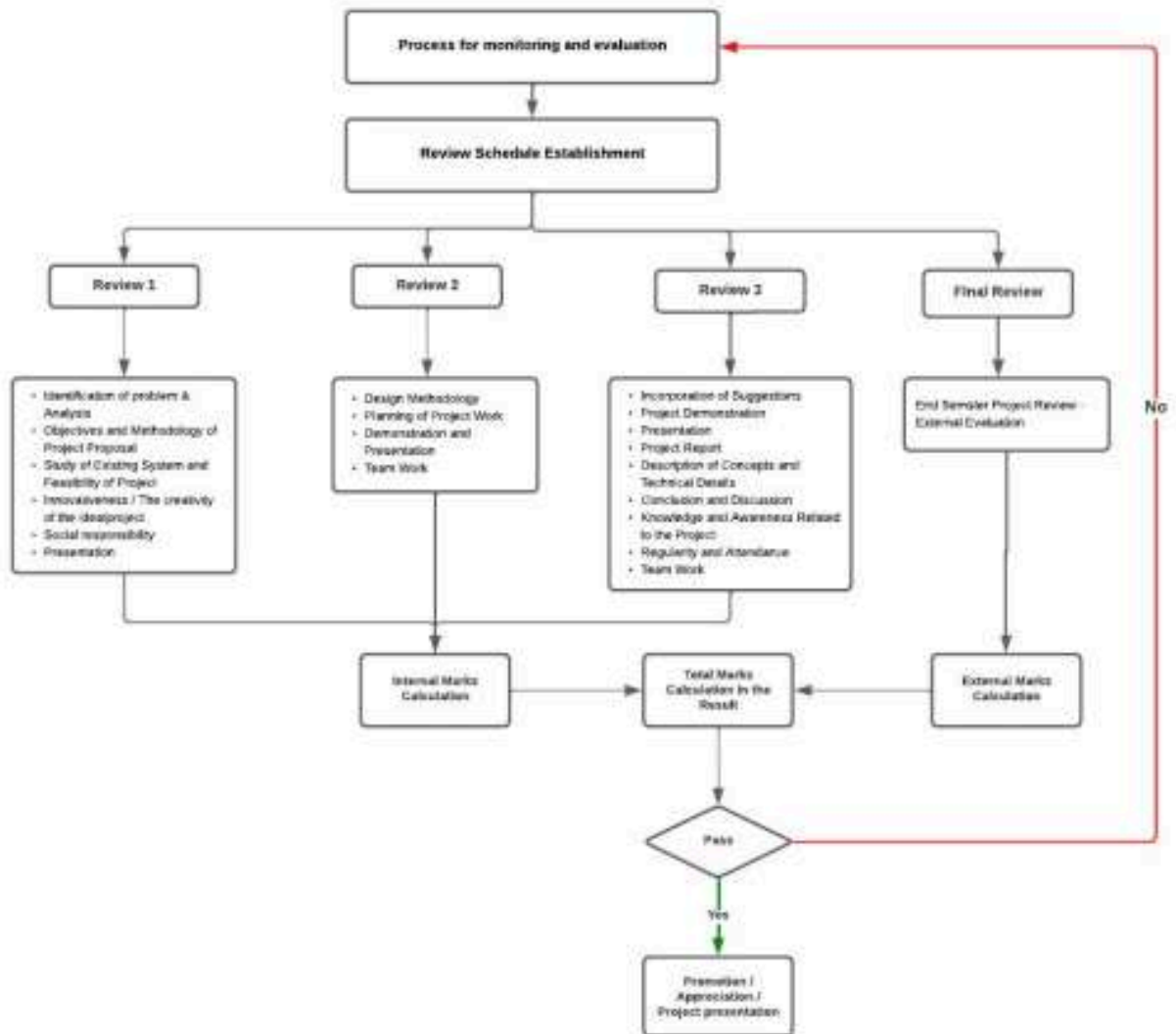
		Presentation	
	Project Report Evaluation	Project Report Description of Concepts and Technical Details Conclusion and Discussion	15 Marks
	Evaluation by Guide	Knowledge and Awareness Related to the Project Regularity and Attendance Team Work	20 Marks
Total (A%)			100 Marks

- The total of 100 marks from all reviews will be converted into corresponding internal marks, as specified in the SBTE Bihar guidelines.
- All review marks are considered for internal assessment.
- Project evaluation marks adhere to SBTE, Bihar Guidelines.

In summary, the process for monitoring and evaluating student projects is a systematic and thorough approach to ensure the successful completion and assessment of these projects, contributing to students' academic growth and achievement.

D. Process to assess individual and team performance

Write Answer:



The evaluation of student projects is a comprehensive process that assesses both individual and team performance. Throughout the project lifecycle, performance is continuously monitored and assessed through various stages and criteria:

Three Internal Reviews:

- Students' performance is evaluated at three key review points during their project journey.
- These reviews are essential for tracking progress and quality.

Final External SBTE Examinations (Viva Voce):

- After completing all three internal reviews, students undergo a final external examination conducted by an external examiner appointed by the State Board of Technical Education (SBTE).
- The viva voce examination assesses the students knowledge, presentation skills, and understanding of their project.

- The total marks evaluated for each student's project are the sum of the internal and external marks, amounting to a total of 100 marks.
- This thorough assessment process ensures that students' individual and team performances are consistently monitored, helping them grow and achieve academic excellence.

Specific parameters, as detailed in the table below, are used to assess students' work and contributions.

Category	Marks
Internal Evaluation	30
External Evaluation	70
Total Marks	100

E. Quality of deliverables, working prototypes

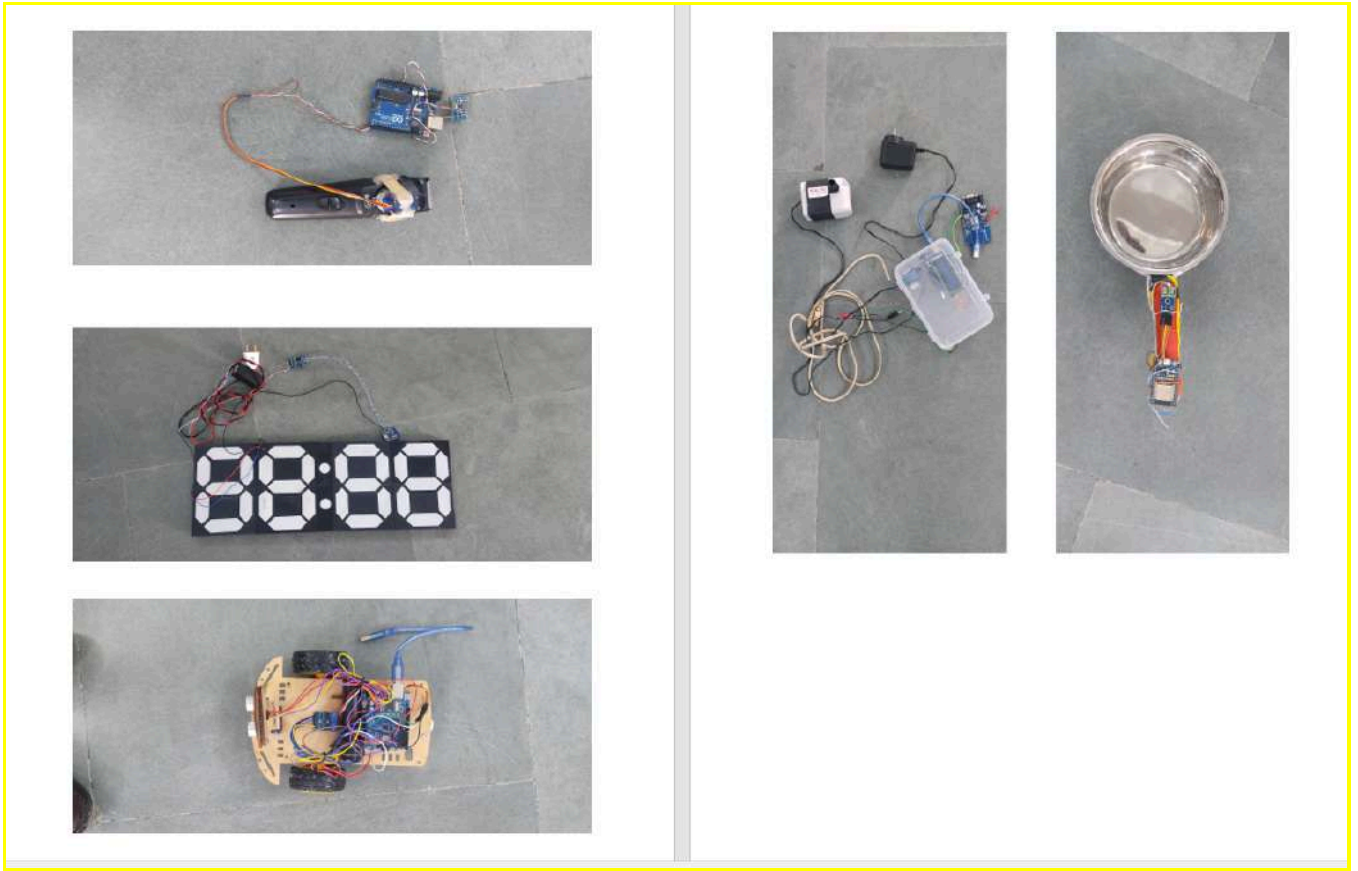
Working type Projects :

S.no	Name of the First Author	Name of the Co-Authors (Students)	Title of the Article	Academic Year
1	Mr. Bhaskar Ranjan	Piyush Kumar Verma Piyush Kumar Prem Kumar Sakshee Priya Shriram Kumar	Design, Fabrication, and Experimental Implementation of an Automated Trimmer System	2022-2023
2	Mr. Anugrah Ashish Kumar	Dheeraj Kumar Soni Ashish Kumar Anjali Kumari Riya Singh	Development and Implementation of a Hot Flask: Design and Experimental Insights	2022-2023
3	Mr. Jabas Edwin Raj	Prince Kumar Adithya Kumar Vikas Kumar Shikha Kumari	Induction Hot Pack: Design, Fabrication, and Experimental Evaluation	2022-2023

4	Mrs. Catharine	Krishna Kuma Gupta Arpit Kumar Manish Kumar Singh Nitesh Kumar Ram Harsh Deep Khatri	Pulpit Trimmer: A Project on Design, Fabrication, and Experimental Implementation	2022-2023
5	Mr. Ganeshbabu M	Suman Sourab Abhishek Kumar Sheshpal Kumar Tannu Kumari Supriya Kumari	Stepper Motor: Design, Fabrication, and Experimental Study	2022-2023
6	Mr. Bhaskar Ranjan	Vikash Kumar Ritik Kumar Sagar Amendra Kumar Roushan Deep Manikant Kumar	Bio Gas Plant: Design, Fabrication, and Experimental Assessment	2021-2022
7	Mr. Jabas Edwin Raj	Roushan Kumar Deep MD Shadab Zafar Abhishek Kumar Shrawan Kumar Abhishek Raj Sourab Kumar	Mobile-Controlled Smart Irrigation System: Design, Fabrication, and Experimental Insights	2021-2022
8	Mrs. Catharine	Sneha Bharathi Machiniphi Beauty Bala Khushi Kumari Anjali Kumari	Arduino Uno Self-Drive Car: Design, Fabrication, and Experimental Evaluation	2021-2022

The culmination of student projects involves the submission of fabricated projects and working prototypes. These deliverables are not only integral to the evaluation process but also serve as a testament to the students' practical skills and innovative capabilities. After the final viva voce

examination, the projects are showcased and displayed in the respective laboratories, allowing others to learn from and be inspired by the work of their peers.



F. Papers published /Awards/ Recognition received by projects at State/ National level

In addition to project completion, students are encouraged to extend their achievements in various ways:

National-Level Project Competitions:

- Students are motivated to present their projects in prominent national-level project competitions, allowing them to gain recognition and learn from peers across the country.

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National-Level Project Competitions:

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Sl. No	Date of Project Expo	Event Details	Event Organizer	Project Title	Team Members	Participated / Awards Won
1	25th February 2023	National Level Science Exhibition	Sityog Institute of Technology, Aurangabad, Bihar	Design and Development of a rover using Theon Johnson Mechanism	Suriya Mani,EE Md Amish, Mech Satyam Kumar, Mech	1st prize cash award of Rs. 11,000





S.No	Name of the First Authors	Name of the Co-Authors (Students)	Title of the Article	Academic Year	Journal Publication Details
1	Mr. Bhaskar Ranjan	Piyush Kumar Verma Piyush Kumar Prem Kumar Sakshee Priya Shriram Kumar	Design, Fabrication, and Experimental Implementation of an Automated Trimmer System	2022-2023	INTERNATIONAL JOURNAL OF COMMUNICATION SYSTEM & NETWORK TECHNOLOGIES, VOLUME 11, ISSUE 3, ISSN : 2053-6283
2	Mr. Anugrah Ashish Kumar	Dheeraj Kumar Soni Ashish Kumar Anjali Kumari Riya Singh	Development and Implementation of a Hot Flask: Design and Experimental Insights	2022-2023	INTERNATIONAL JOURNAL OF COMMUNICATION SYSTEM & NETWORK TECHNOLOGIES, VOLUME 11, ISSUE 2, ISSN : 2053-6283
3	Mr. Jabas Edwin Raj	Prince Kumar Adithya Kumar Vikas Kumar Shikha Kumari	Induction Hot Pack: Design, Fabrication, and Experimental Evaluation	2022-2023	INTERNATIONAL JOURNAL OF COMMUNICATION SYSTEM & NETWORK TECHNOLOGIES, VOLUME 11, ISSUE 3, ISSN : 2053-6283
4	Mrs. Catharine	Krishna Kuma Gupta Arpit Kumar Manish Kumar Singh Nitesh Kumar Ram Harsh Deep Khatri	Pulpit Timer: A Project on Design, Fabrication, and Experimental Implementation	2022-2023	INTERNATIONAL JOURNAL OF COMMUNICATION SYSTEM & NETWORK TECHNOLOGIES, VOLUME 11, ISSUE 2, ISSN : 2053-6283
5	Mr. Ganeshbabu M	Suman Sourab Abhishek Kumar Sheshpal Kumar Tannu Kumari Supriya Kumari	Stepper Motor: Design, Fabrication, and Experimental Study	2022-2023	INTERNATIONAL JOURNAL OF COMMUNICATION SYSTEM & NETWORK TECHNOLOGIES, VOLUME 11, ISSUE 2, ISSN : 2053-6283
6	Mr. Bhaskar Ranjan	Vikash Kumar Ritik Kumar Sagar Amendra Kumar Roushan Deep Manikant Kumar	Bio Gas Plant: Design, Fabrication, and Experimental Assessment	2021-2022	INTERNATIONAL JOURNAL OF COMMUNICATION SYSTEM & NETWORK TECHNOLOGIES, VOLUME 9, ISSUE 1, ISSN : 2053-6283

7	Mr. Jabas Edwin Raj	Roushan Kumar Deep MD Shadab Zafar Abhishek Kumar Shrawan Kumar Abhishek Raj Sourab Kumar	Mobile-Controlled Smart Irrigation System: Design, Fabrication, and Experimental Insights	2021-2022	INTERNATIONAL JOURNAL OF COMMUNICATION SYSTEM & NETWORK TECHNOLOGIES, VOLUME 9, ISSUE 1, ISSN : 2053-6283
8	Mrs. Catharine	Sneha Bharathi Machiniphi Beauty Bala Khushi Kumari Anjali Kumari	Arduino Uno Self-Drive Car: Design, Fabrication, and Experimental Evaluation	2021-2022	INTERNATIONAL JOURNAL OF COMMUNICATION SYSTEM & NETWORK TECHNOLOGIES, VOLUME 9, ISSUE 3, ISSN : 2053-6283

Participation in BCST - Student Project Programmes:

- Students are actively encouraged to participate in the Bihar Council on Science and Technology (BCST) - Student Project Programmes. These platforms provide opportunities for networking, exposure, and recognition at the state level.

In summary, student projects not only provide an opportunity for hands-on learning and application of knowledge but also serve as a platform for recognition, publication, and skill development. The multifaceted approach to assessment ensures that students' efforts and achievements are recognized and celebrated at both the institutional and broader academic levels.

2.2.5. Industry Interaction and Community Services

A. Industry-supported Labs

- This section highlights Gems Polytechnic College's initiatives and efforts in promoting industry interaction and contributing to community services.
- Gems Polytechnic College maintains a strong connection with various industries, facilitating an enriched learning environment for its students. This interaction includes:

Memorandum of Understanding (MoU) with Companies:

- The institution has established MoUs with leading companies, fostering collaboration and knowledge sharing.

3D Printing Lab:

- The college has a state-of-the-art 3D printing lab, supported by industry, to empower students with cutting-edge technology skills.

Automobile Lab:

- Equipped with components and parts supplied by J.K. Ravindra TATA Motors, Aurangabad, Bihar, this lab enhances students' understanding of automotive engineering, exposing them to real-world applications.

Memorandum of Understanding (MoU) with Companies:

The institution has established MoUs with leading companies, fostering collaboration and knowledge sharing.

List of MOUs

S. No.	Company / Organization
1	KP RELIABLE TECHNIQUE INDIA PVT LTD
2	JK & RAVINDRA AUTOMOBILES PVT LTD (Tata Motors)
3	WINDCARE INDIA PVT LTD
4	MICRO SEAMLESS
5	HEINRICH AG, GERMANY
6	EOS, GERMANY



B. Delivery of Appropriate Coursework by Industry Experts:

The Department Head and staff at Gems Polytechnic College are committed to providing students with valuable insights from industry experts. The following initiatives are undertaken:

Value-added Courses:

The college arranges specialized courses, guest lectures, seminars, and workshops conducted by industry professionals to help students develop technical skills.

S.No	Date	Academic Year	Semester & Batch	Mode of Event (GuestLecture / Workshop / Hands-on training, etc.)	Event Topic
1	02.09.21	2021-2022	Vth - 2019-2022, IInd - 2020-2023	Workshop	Android App development training

2	03.09.21	2021-2022	Vth-2019-2022	Workshop	Circuit Simulation Workshop
3	24-11-21	2021-2022	VIth-2019-2022 IIrd-2020-2023	Workshop	Robotics & Arduino programming
4	03.09.22	2022-2023	IVth-2021-2023	Hand on Training	Fabrication of transformer
5	11.08.22	2022-2023	IVth-2021-2023	Seminar	Railway trends
6	17.08.23	2022-2023	VIth-2021-2023 IVth-2022-2024 IIInd-2023-2025	Guest Lecturer	Role of Power Electronics In Power system
7	30.01.23	2022-2023	VIth-2021-2023 IVth-2022-2024	Guest Lecture	Interaction on Coal based thermal power plant
8	28.11.22	2022-2023	VIth-2021-2023 IVth-2022-2024	Hands of Training	E waste awareness Activity

Department of Electrical Engineering



EVENT ACTIVITIES



Soldering



E-Waste





Department of Electrical Engineering

Fabrication of Transformer



C. Industrial Visits/Tours for Students:

Write Answer:

The institution recognizes the importance of real-world exposure in an engineering curriculum. To provide practical knowledge and connect students with industry practices, they organize industrial visits, encompassing the following steps:

Industry Selection:

- Contacts are developed, and industry addresses are collected for planned visits.

Permission Requests:

- The Head of the Department approves letters requesting permission from the concerned industry, specifying the date, time, and the number of students accompanied by staff.

Academic Year-wise Visits: A comprehensive list of industry visits is organized on an annual basis.

S.No	Academic Year	Semester	Batch / Session	Industry Name & Location	No.of Students Visited	Relevance to POs & PSOs
1	2021-2022	5th	2018-2021	SONE WESTERN LINK CANAL H.E. PROJECT(BHPC),DEHRI ON SONE	33	PO(1,2,3,4,5,6,7) & PSO3
2	2021-2022	4th	2019-2022	Industrial Visit to Barun Power grid	37	PO(1,2,3,4,5,6,7) & PSO3
3	2022-2023	6th	2020-2023	Hydro Power Plant Indra Puri	23	PO(1,2,3,4,5,6,7) & PSO3
4	2023-2024	6th	2021-2024	WALWHAN SOLAR BH LTD 25MW	31	PO(1,2,3,4,5,6,7) & PSO3





D. Industrial Training/Internship:

Write Answer:

At Gems Polytechnic College, students are encouraged to pursue industrial training during their semester breaks. This process is facilitated by faculty members and includes engagement with industry experts and alumni. Furthermore, industrial training is an integral part of the State Board of Technical Education (SBTE) curriculum, ensuring high participation rates. The process includes:

Guidance and Support:

- Faculty members offer guidelines, suggestions, and contact details for internships, alongside recommendations and support from alumni working in relevant industries.

High Participation:

- The majority of students successfully complete their internships, thanks to the inclusion in the SBTE curriculum.

S.No	Academic Year	Company Name & Location	No. of Students Attended	No.of Days
1	2022-2023	J.K Ravindra TATA Motors , Aurangabad	1	30
2		NTPC	4	30
3		BSPT	21	30
4		UPPPT	1	30
5	2021-2022	BSPHCL	11	25
6		J.K Ravindra TATA Motors , AurangabadJ.K Ravindra TATA Motors	7	31
7		BRBCL Aurangabad	6	30
8		NTPC, Aurangabad	1	40
9		Power Grid, TEHTA	1	30
10	2020-2021	AEE GRID Sub Station, SONE NAGAR	2	15
11		North Karanpura Super Thermal Power Project	2	30

E. Post Training/Internship Assessment:

Write Answer:

After completing their training or internship, students at Gems Polytechnic College undergo a comprehensive assessment, which includes:

Submission of Reports and Certificates:

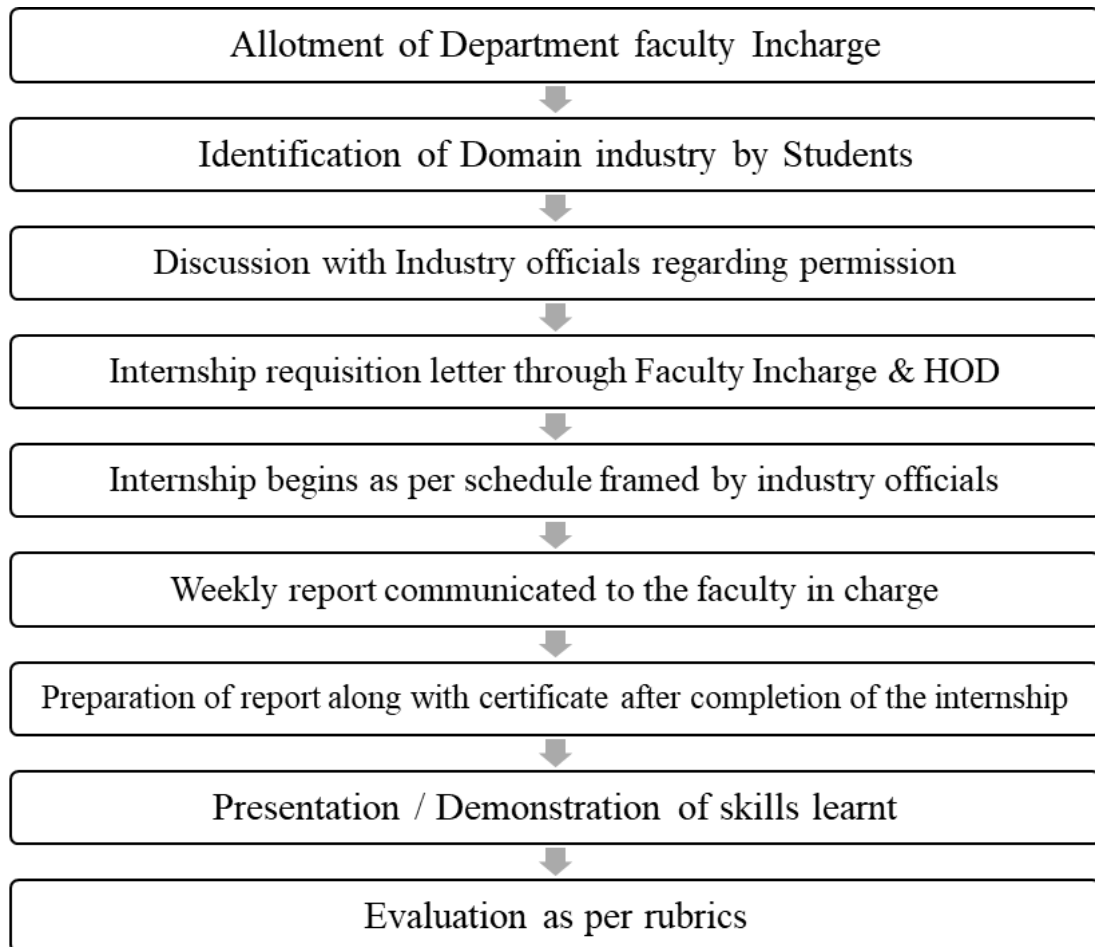
- Students are required to submit their in-plant training reports and certificates from the respective companies.

Presentation of Knowledge:

- Students present the knowledge and skills acquired during their training through PowerPoint presentations (PPTs).

Rubric-Based Assessment:

- Course teachers evaluate students based on attendance, presentation quality, acquired skills, and knowledge gained.



F. Contribution to Community-related Projects/Activities:**Write Answer:**

In our commitment to fostering social responsibility and innovation, the Department of Electrical Engineering at Gems Polytechnic College empowers final-year students to channel their skills and knowledge towards community-related projects. We inspire our students to undertake initiatives that directly contribute to the betterment and upliftment of the community and society, fostering a culture of impactful engagement beyond the classroom.

S. No	Academic Year	Project Title	Student Members	Project Guide(s)	Contribution to Community-related
1	2021-2023	Electric ThermalStell Milk Boiler	Dheeraj Kumar Sonu	Mr.Simon Antipas	<p>1. This project introduces an innovative solution for portable milk pasteurization and temperature control through the development of a versatile double boiler system powered by low voltage Dc source(5 V to 12 V). Leveraging Induction heating Technology.</p> <p>2. Milk pasteurization is a critical process to eliminate harmful pathogens while preserving the milk's nutritional value . The proposed double boiler system integrates advanced technology to achieve this process portably and effectively. The utilization of induction heating offers rapid, uniform,and efficient heat distribution crucial for achieving</p>
2			Ashish Kumar		
3			Anjali Kumari		
4			Riya Singh		

					precise pasteurization temperatures.
5	2020-2021	Mobile Controlled Smart Irrigation System	Shrawan Kumar	Mr.R.Jabas Edwin Raj	<p>1. The key objective of the project is to monitor the soil moisture content during its drying and wet conditions with the aid of a moisture sensor circuit.</p> <p>2. Calculate the corresponding relative humidity and irrigate it based on its nature using a PC lab view system RIO,IOT, GSM and an automatic water inlet setup which can also monitor and record temperature.</p>
6			Sourav Kumar Sinha		
7			Abhishek Kumar		
8			MD Shadab Zafar		
9			Raushan Kumar Deep		<p>3. A record of soil moisture, temperature, Rainfall is maintained in a database for backup.</p> <p>4.This backup is used for weather forecasting and directs the farmers regarding the type of crop to be cultivated in future.IOT gives the whole information to the operator about irrigation.</p>
9	2020-2021	Home	Saloni Kumari		<p>1. Implementation of Home Automation using the latest technology gives us more conveyance security and safety. Smartphone affordability increases every year and they</p>

10		Automation System using Bluetooth	Beauty Kumari	Mrs.D.Priya	<p>began to play important roles in our day to day life due to its size and portability.</p> <p>2. This report presents the design and implementation of a low cost prototype of bluetooth based automation system using Android phone.Android application is developed to provide users an interface through which they can be able to send signals easily for controlling appliances remotely.</p>
11			Shristi Kumari		
12			Aakaritee Sinha		

2.2.6 Information Access Facilities and Student Centric Learning Initiatives

A. Availability of facilities & Effective Utilization; *specify the facilities, materials and scope for self-learning, Webinars, NPTEL Podcast, MOOCs etc*

In today's dynamic educational landscape, access to information and the implementation of student-centric learning initiatives are paramount. Here, we explore the facilities available for inform

A. Availability of Facilities and Effective Utilization:

Central Library:

Our central library is a treasure trove of knowledge. It offers textbooks and reference books covering a wide array of subjects related to the curriculum. In addition, students have access to book

Department Library:

The departmental library is another valuable resource. It houses books specifically tailored to the subjects within the department's curriculum. Furthermore, it includes supplementary materials t

PowerPoint Presentations (PPTs):

PPTs serve as a powerful teaching tool. Faculty members use them to deliver subject matter in a structured and point-wise manner, enhancing the efficiency of learning. The visual and organize

E-Notes (PDF Format):

E-Notes are shared with students through platforms like Google Classroom, email, and WhatsApp groups. These digital resources facilitate easy access to study materials, enabling students to s

Educational Videos:

Multimedia content, including videos, audio, images, animations, and interactive material, enriches the learning experience. Educational YouTube channels are utilized to showcase real indus ability to revisit content as needed.

NPTEL Course Video Links:

Specific curriculum topics are best understood through NPTEL video content. Course instructors compile lists of relevant topics and provide links for students to access these high-quality educ

Website-Notes:

Educational websites offer a plethora of resources, such as video tutorials, instructional lectures, DIY guides, self-help tutorials, interactive presentations, and animated explanations. These reso

Previous Semester Question Bank (Unit-Wise):

Faculty members maintain a repository of previous semester question papers organized by unit. These resources are readily available to students, aiding their exam preparation and understanding

Multiple Choice Questions Bank (Unit-Wise):

Similar to the question bank, unit-wise multiple-choice questions are available for students. These resources assist in self-assessment and reinforce the understanding of individual units.

Massive Open Online Courses (MOOCs):

Our college is affiliated with prestigious platforms such as NPTEL, SPOKED Tutorial, IIT Bombay, and Cisco. Through these platforms, students receive comprehensive training, evaluations, an

B. Student Centric Learning Initiatives & Effective Implementation (5)

In addition to providing access to a wealth of resources, our institution is committed to implementing student-centric learning initiatives:

Personalized Learning Paths:

- We recognize that every student is unique, and their learning needs differ. We encourage personalized learning paths that allow students to choose to study.

Interactive Learning Platforms:

- We promote the use of interactive online platforms and forums where students can engage with their peers and faculty members to discuss coursework

Project-Based Learning:

- Practical application of knowledge is emphasized through project-based learning. Students are encouraged to undertake real-world projects that not only deepen their understanding but also enhance their problem solving & critical thinking.

Continuous Feedback and Assessment:

- Regular assessments and feedback mechanisms are in place to monitor students progress and provide timely guidance for improvement.

Mentorship Programs:

- Faculty members act as mentors to students, providing academic and career guidance. This mentorship approach fosters a supportive learning environment.

Career Development Opportunities:

- Students are exposed to various career development initiatives, including internships, workshops, and seminars, to ensure their readiness for the job market.

In conclusion, our institution places a strong emphasis on information access facilities and the implementation of student-centric learning initiatives. We believe that by providing comprehensive skills needed for success in their academic and professional journeys.

2.2.7 New Initiatives for embedding Professional Skills**A. Employability skill enhancement Initiatives and effective implementation**

At GEMS Polytechnic College, we believe in preparing our students to excel in their careers. To achieve this, we have implemented a range of employability skill enhancement initiatives:

Institution's Innovation Council (IIC) :

- The Institution's Innovation Council (IIC) of GEMS Polytechnic College prepares the pathway for Entrepreneurial journey of students as per the guidelines of the Ministry of Education's Innovation Cell. It creates the awareness of Innovation, design thinking, Problem solving and Startups by various activities such as assessments, Exposure Visit, Workshops on innovation and startups, IPR, Business model, Technologytransfer to market, etc.
- And continuously guiding in the path of entrepreneurship by providing opportunity Expert sessions, success stories of entrepreneurs, Internal Competitions, National LevelCompetitions Such as Smart India Hackathon. Incubation and pre-incubation facilities develop their creativity into innovative solutions of society problems and giving confidence to become entrepreneurs and make them job providers instead of Job seekers.

Academic Year : 2022-2023

Sl.No.	Name of the Member & Designation	IIC Role
	Mr. Ragunath A, Lecturer, EEE Dept	President
2	Mr. Robin S, Lecturer, EEE Dept	Vice-President
3	Mr. Johan Deva Raj, Lecturer, Mech Dept	Convener
4	Mr. Prabhu Nath, Lecturer, Mechanical Dept	Innovation Activity Coordinator
5	Mr. Victor Emmanuel, Lecturer, Civil Dept	Startup Activity Coordinator
6	Mr. Bhaskar Ranjan, Lecturer, EE Dept	Internship activity Coordinator
7	Mr. Simon V Antipas, Lecturer, EE Dept	IPR Activity Coordinator
8	Mrs. Catharine C, Lecturer, EE Dept	NIRF Coordinator
9	Mr. Kumar S, Lecturer, CSE Dept	Member
Student Members:		
10	Ms. Arya Nandini, 3 rd CSE	Innovation coordinator
11	Mr. Ashish Kumar Sharma, 3rd EEE	Social media coordinator
12	Mr. Saurav Kumar, 3rd Mech	Member
13	Mr. Rohit Kumar, 2nd Mech	Innovation coordinator, Member
14	Mr. Pratyam Prakash , 2nd Civil	Startup coordinator
15	Mr. Aditya Kumar , 3rd EE	IPR coordinator

16	Mr. Prince Kumar, 3rd EE	Internship coordinator
External Member:		
17	Mr. Vishal Nair, Co-Founder, Light Salt Pvt. Ltd.	Member

The Composition of Institution's Innovation Council (IIC): (2023-2024)

Sl.No	Name of the Member & Designation	IIC Role
1	Mr. Ragunath A, Lecturer, EEE Dept	President
2	Mr. Robin S, Lecturer, EEE Dept	Vice-President
3	Mr. Johan Deva Raj, Lecturer, Mech Dept	Convener
4	Mr. Prabhu Nath, Lecturer, Mechanical Dept	Innovation Activity Coordinator
5	Mr. Victor Emmanuel, Lecturer, Civil Dept	Startup Activity Coordinator
6	Mr. Bhaskar Ranjan, Lecturer, EE Dept	Internship activity Coordinator
7	Mr. P. Kumaraswamy, Sr. Lecturer, Mech Dept	IPR Activity Coordinator
8	Mrs. Catharine C, Lecturer, EE Dept	NIRF Coordinator
9	Mr. Kumar S, Lecturer, CSE Dept	Member
Student Members:		
10	Ms. Rumana Akhtar-CSE 1st year	Member
11	Ms. Sambhavna Bajpai-CSE 3rd year	Innovation Coordinator
12	Mr. Nikhil Singh-CSE 3rd year	IPR Coordinator
13	Mr. Ayush Raj-CSE 2nd year	Member
14	Ms. Megha Raj-CSE 2nd year	Internship Coordinator
15	Mr. Vivek Ranjan- Mech 3rd year	Member
16	Mr. Kishlay Kumar- Mech 1st year	Member
17	Mr. Shashank Pandey- Mech 2nd year	Startup Coordinator
18	Ms. Priyanka Kumari Singh- Mech 2nd year	Innovation Coordinator
19	Mr. Mahtab Alam- Mech 2nd Year	Member
20	Mr. Pratyam Prakash- Civil 3rd Year	Startup Coordinator

21	Ms. Manisha Kumari-Civil 3rd Year	Internship Coordinator
22	Ms. Komal Kumari-Civil 2nd Year	Member
23	Mr. Amir Subhani-Civil 2nd Year	Member
24	Mr. Shivam kumar- Civil 1st Year	Member
25	Mr. Abhijit Thakur- EEE 3rd Year	Social Media Coordinator
26	Mr. Ravi Shankar Kumar- EEE 3rd Year	Member
27	Ms. Awantika Singh-EEE 3rd Year	Member
28	Mr. Deepraj Kumar-EEE 2nd Year	Member
29	Mr. Raushan Kumar-EEE 2nd Year	Member
30	Ms. Kirti kumari verma-EEE 2nd Year	Member
31	Mr. Raj Kumar- EE 3rd Year	Startup Coordinator
32	Ms. Sneha Kumari- EE 3rd Year	Internship Coordinator
33	Mr. Suryamani Kumar- EE 2nd Year	Innovation Coordinator
34	Mr. Sumit Kumar- EE 2nd Year	Member
35	Mr. Omprakash Singh-EE 1st Year	Member
External Member:		
36	Mr. Vishal Nair, Co-Founder, Light Salt Pvt. Ltd.	Member

Career Guidance & Higher Education Cell:

- Choosing the right career path and pursuing higher education are critical decisions. Our dedicated cell provides students with comprehensive guidance and counseling, helping them make informed choices regarding their career and higher education options.

Training & Placement Cell:

- The Training & Placement Cell plays a pivotal role in honing students' soft skills. We offer training sessions on communication, leadership, teamwork, and problem-solving. Students are coached on resume preparation, group discussions, and mock interviews to enhance their employability.

Para Academic Department:

- Our Para Academic Department complements the academic curriculum by offering skill-focused courses and workshops. These courses are designed to enhance practical skills, making students job-ready upon graduation.

B. Personality development related Initiatives & effective implementation

We understand that academic excellence is just one aspect of a student's holistic development. Personality development is equally important. To foster well-rounded individuals, we have initiated several personality development programs:

Communication Skills Workshops: Effective communication is the cornerstone of professional success. Regular workshops and activities are conducted to enhance students' verbal and written communication skills.

Leadership and Team Building: Leadership qualities and the ability to work in teams are highly valued in the professional world. Students are encouraged to participate in leadership and team-building exercises to develop these skills.

Cultural and Artistic Pursuits: Art and culture play a vital role in personality development. Students have opportunities to engage in cultural activities, including music, dance, and theater, allowing them to explore their creative side.

Mindfulness and Stress Management: In today's fast-paced world, stress management is crucial. We offer programs on mindfulness and stress management techniques to help students maintain their mental well-being.

Ethics and Values Education: Our institution places a strong emphasis on ethics and values. Workshops and seminars on ethical behavior and values-based decision-making are integral to our curriculum.

Industry Interaction: Students regularly interact with industry professionals through seminars, guest lectures, and industrial visits. These interactions provide insights into the professional world and help students align their skills with industry expectations.

Mentorship Programs: Faculty members and experienced professionals serve as mentors to students, providing guidance on personal and professional development.

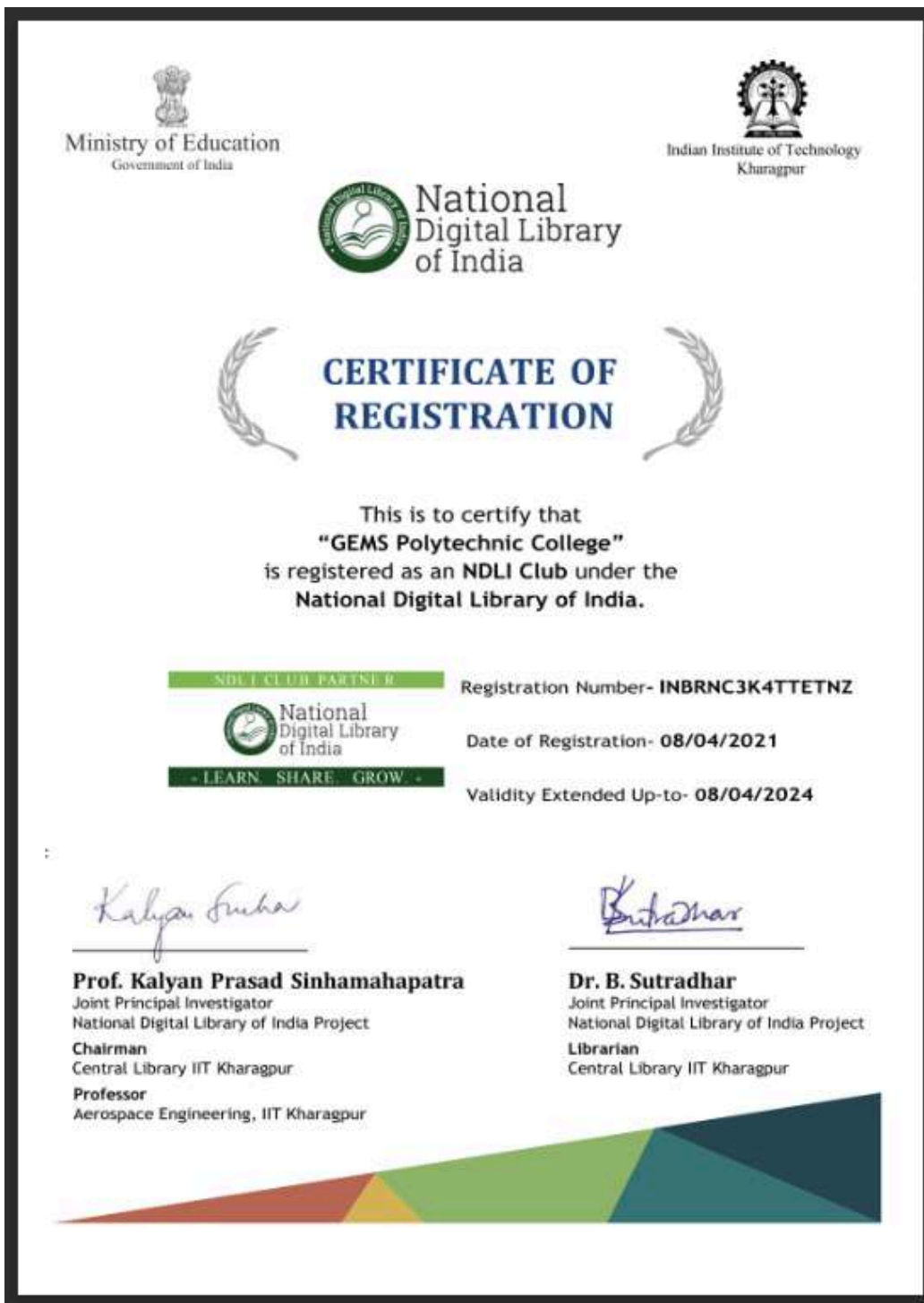
In conclusion, GEMS Polytechnic College is committed to preparing students not only for academic success but also for a successful and fulfilling professional life. Our initiatives in employability skill enhancement and personality development reflect our dedication to nurturing well-rounded individuals who are ready to excel in their chosen careers and contribute positively to society.

2.2.8 Co-curricular & Extra Curricular Activities

At GEMS Polytechnic College, we believe in nurturing well-rounded individuals, and our commitment to this holistic development is reflected in the diverse co-curricular and extracurricular activities we offer to help students prepare for the challenges of the world beyond academics.

GPC-NDLI CLUB Activities:

The GPC-NDLI (National Digital Library of India) Club is a hub of intellectual engagement and enrichment.



We organize a variety of events throughout the academic year, including:

Reading Skill Competition: Encouraging a love for reading and improving comprehension skills among students.

Elocution Competition: Providing a platform for students to hone their public speaking and oratory

skills.

Decoding Competition: Challenging students to decipher complex problems, fostering critical thinking.

Quiz Competition: Promoting knowledge acquisition and healthy competition among students.

Orientation Program: Guiding students on the effective utilization of digital resources for research and learning.

Poster Presentation: Encouraging creativity and effective communication through visual displays.



Sports Day:

Our annual Sports Day is a celebration of physical fitness, teamwork, and sportsmanship. Held once a year, this two-day event brings together students from all three academic years. It features

SPORTS DAY



Morphosis Tech Fest:

The Morphosis Tech Fest is a highlight of our academic calendar. Held annually and open to students

from all three years, this two-day extravaganza showcases technical prowess and creativity
Singing

- Paper Presentation
- Technical Quiz
- Photography
- Debate
- Just a Minute (JAM)
- Best Out of Waste
- Treasure Hunt
- Cooking Without Fire
- Short Film
- Typing Speed
- Paper Wings

Morphosis Tech Fest is an opportunity for students to not only showcase their technical skills but also collaborate, innovate, and push the boundaries of their knowledge.



Department of Electrical Engineering

CO-CURRICULAR & EXTRA CURRICULAR ACTIVITIES



NSS & Morphosis
& Sports




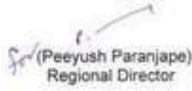




NSS (National Service Scheme):

The NSS unit at GEMS Polytechnic College actively engages in community service and social responsibility. Each academic year, NSS student and faculty volunteers participate in a range of a **Tree Plantation:** Contributing to environmental conservation.

Social Awareness Programs: Promoting awareness about critical societal issues.

<p>भारत सरकार युवा कार्यक्रम एवं खेल मंत्रालय राष्ट्रीय सेवा योजना, क्षेत्रीय निदेशालय C विंग, 7वां मंज, कर्पूरी ठाकुर सदन, सी.जी.ओ. कॉम्प्लेक्स आशियाना - दिहा रोड, पटना - 800 025 फोन : 0612-2952934 ई-मेल : nsrccpatna@gmail.com patna-nss@nic.in</p>		<p>Government of India Ministry of Youth Affairs & Sports Regional Directorate of NSS "C" Wing, 7th Floor, Karpuri Thakur Sadan, CGO Complex Ashiyana - Digha Road, Patna - 800 025 Phone : 0612-2952934 E-mail : nsrccpatna@gmail.com patna-nss@nic.in</p>
F.No. 52/ NSS/RD/PAT/2020/ 3399 - 3402.		Date - 17-11-2021
To,		
The Principal GEMS Polytechnic College, Ratanpura, Aurangabad, Bihar		
Subject: Opening of new NSS Unit - reg.		
Sir,		
With reference to the email dated 12 th and 15 th September- 2021, it is hereby to inform you that initially this office may provide approval to open Self Finance Unit of NSS for your college. With the passage of time, this office may approve your NSS unit as Govt. Funded Unit after reviewing the level of progress of NSS in your college. A short note regarding the NSS has been attached with this letter along with the form which is to be submitted to this office, duly filling up all details.		
Thus, it is requested to you to submit duly filled up form so that this office may provide approval for opening the NSS Unit in your college.		
Yours Faithfully,		
 (Peeyush Paranjape) Regional Director		
Copy to:		
1. The Director, Directorate of NSS, Govt. of India, Ministry of Youth Affairs & Sports, New Delhi-110011 2. The Under Secretary (NSS), Govt. of India, Ministry of Youth Affairs & Sports, Shastri Bhavan, New Delhi-110001 3. The SNO cum Director, Department of Art, Culture & Youth Development, Govt. of Bihar, Patna, Bihar		

Cleaning the Environment (Swachh Bharat): Actively participating in cleanliness drives.

S.No	Name of the Activity	Date	Place	No.of GPC Students/Volunteers Participated	Beneficiaries (No.of People benefitted & Place)
1	AWARENESS PROGRAM ON NSS DAY AND ENVIRONMENT DAY.	09 -09 -2022	JOGIYA	Member - 35	JOGIYA
2	FREE HEALTH AWARENESS & MEDICAL CAMP	26 -10- 2023	JAGDISH PUR	Students - 5 members Staff 17 members	140
3	Girl's Protection Nation's Pride	13/2/23	Government Middle Middle School Jogiya	Ms . Kanti Verma Lecturer CSE GEMS Polytechnic College	50
4	Free Health Awareness & Medical Camp	5/4/23	PitamPur Aurangabad Bihar	Mrs. Roja, Senior Nurse, GEMS Polytechnic College,	75
5	MERI LIFE- ONE STUDENT ONE TREE	8/8/2023	GPC Campus	Principal GEMS Polytechnic College and All Dept. HODs.	55

6	Free Health Awareness & Medical Camp	11/8/2023	Tiwari Bigha	Mrs. Roja, Senior Nurse, GEMS Polytechnic College,	127
7	Free Health Awareness & Medical Camp	8/9/2023	Deohara	Mrs. Roja, Senior Nurse, GEMS Polytechnic College,	61
8	NSS Inaugural	22/4/22	GPC Auditorium	Mr. Piyush Pranjape, Regional Director, Ministry of Youth & Sports Affairs, Government of India,	100
9	Tree plantation & Awareness.	9/9/22	Jogiya High School Aurangabad Bihar	Mr. Arun Mukhiya Tengra Panhayat Aurangabad Bihar	60



Community Development Activities: Providing tuition, sharing moral values, and teaching computer knowledge to nearby village children.

Through NSS, our students learn the importance of community engagement, social responsibility, and empathy.

In conclusion, our co-curricular and extra-curricular activities are an integral part of the educational experience at GEMS Polytechnic College. These activities not only enrich students' lives but that will serve them well in their future endeavors.

Criterion 3

Course Outcomes and Program Outcomes

3. COURSE OUTCOMES AND PROGRAM OUTCOMES:

Program Outcomes

PO 1:	Basic and Discipline specific knowledge: Apply knowledge of basic mathematics, science and engineering fundamentals and engineering specialization to solve the engineering problems.
PO 2:	Problem analysis: Identify and analyze well-defined engineering problems using codified standard methods.
PO 3:	Design/ development of solutions: Design solutions for well-defined technical problems and assist with the design of systems components or processes to meet specified needs.
PO 4:	Engineering Tools, Experimentation and Testing: Apply modern engineering tools and appropriate techniques to conduct standard tests and measurements.
PO 5:	Engineering practices for society, sustainability and environment: Apply appropriate technology in the context of society, sustainability, environment and ethical practices.
PO 6:	Project Management: Use engineering management principles individually, as a team member or a leader to manage projects and effectively communicate about well-defined engineering activities.
PO 7:	Life-long learning: Ability to analyze individual needs and engage in updating in the context of technological changes.

PROGRAM SPECIFIC OBJECTIVES (PSOs)

PSO 1:	To employ the basic concept of applied science in developing electrical machines for discrete applications and services.
PSO 2:	To understand the concept of generation, transmission, distribution, utilization of electrical energy and solar systems to solve technical problems of the society.
PSO 3:	To design and estimate the electrical cost and material requirements for services like residential building, Workshop, Laboratory in such wise.

3.1 Establish the correlation between the courses and the POs & PSOs

3.1.1 Course Outcomes(SAR should include course outcomes of one course from each semester of study, however, should be prepared for all courses)

Course Name: C 101 [Mathematics - I (2001101)] Course Year : 2022-2023

Faculty Name: Mr. D. Sanjeeva Kumar Daddanala

CO Number	CO Statement
CO 101.1	Illustrate necessary background in trigonometry and appreciate the importance of the geometric study as well as for the calculation and the mathematical analysis.
CO 101.2	Apply a pattern linking in coordinate geometry a connection between algebra and geometry through graphs of lines and curves.
CO 101.3	Demonstrate the basic algebraic manipulation with complex numbers & Partial fractions.
CO 101.4	Solve simple and identify the value of factorial notations on Permutation, Combinations & expansion of binomial theorem
CO 101.5	Solve systems of linear equations by using the matrices & determinants.

Course Name: C 115 [Fundamentals of Electrical & Electronics Engg.(2002204)]

Course Year : 2022-2023

Faculty Name: Mr. Anugrah Ashish Kumar

CO Number	CO Statement
CO 115.1	Explain the fundamental of Diode & its family
CO 115.2	Explain the operational Amplifier circuit & block diagram
CO 115.3	Use the Boolean algebra for constructing logic gates
CO 115.4	Explain the fundamental of Electric circuit & Magnetic circuit
CO 115.5	Explain the basic concept of AC circuits
CO 115.6	Explain the working principle of transformers and motors.

Course Name: C 205 [Fundamentals of Basic electronics & Digital Electronics(2020305)]

Course Year : 2022-2023

Faculty Name: Mr. Catharine

CO Number	CO Statement
CO205.1	To have a thorough understanding of Boolean Algebra principles, including De Morgan's Law, for logic design and analysis.
CO205.2	To explain the combinational logic circuits for arithmetic operations, encoding, decoding, multiplexing, and demultiplexing tasks.
CO205.3	To explain the behavior of the flip-flops using truth tables and excitation tables, in sequential logic circuit design.
CO205.4	Describe the behavior of a PN junction under diode biasing conditions, including the key parameters.
CO205.5	To describe biasing techniques for (BJT) and (FET), and their applications in electronic circuits.

Course Name: C 216 [Solar Power Technologies (2020404)]

Course Year : 2022-2023

Faculty Name: Mr. Bhaskar Ranjan

CO Number	CO Statement
CO 216.1	Distinguish different types of Solar Energy application & Describe their preventive maintenance.
CO 216.2	Identify different types of solar PV systems.
CO 216.3	Explain the process of Maintenance of different types of Solar PV systems.
CO 216.4	Explain the working of Solar PV electronics and MPPT systems.
CO 216.5	Explain the need of Off grid and On grid systems. Describe its layout and working system.

Course Name: C 302 [Energy Conservation & Audit (2020502)]

Course Year : 2022-2023

Faculty Name: Mr. Jabas Edwin Raj R

CO Number	CO Statement
CO 302.1	Students will be able to demonstrate an understanding of energy conservation principles and their significance in the context of national and global energy scenarios.
CO 302.2	Students will acquire the knowledge and skills necessary to assess energy usage in electrical machines, identify inefficiencies, and implement appropriate energy conservation techniques, such as improving power quality and optimizing motor operation.
CO 302.3	Students will be able to analyze electrical installation systems to identify technical and commercial losses, and implement measures to reduce energy wastage, such as voltage optimization and load balancing.
CO 302.4	Students will gain an understanding of cogeneration concepts and tariff structures, enabling them to evaluate and implement cogeneration systems effectively to reduce energy consumption and optimize energy bills.

CO 302.5	Students will be proficient in conducting energy audits of electrical systems, utilizing appropriate instruments and methodologies to identify energy inefficiencies, and presenting findings in a comprehensive audit report format.
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Course Name: C 315 [Network Theory (2020604A)]

Course Year : 2022-2023

Faculty Name: Mr. Ganeshbabu M

CO Number	CO Statement
CO 315.1	Describe the Circuit Elements & Solve the circuits using by Network Techniques
CO 315.2	Use the mathematical tools to solve the problems in Fourier's & Laplace Transforms
CO 315.3	Compare & Solve the RLC elements using resonance circuits
CO 315.4	Solve the given network using by Two port Networks
CO 315.5	Explain the principles of passive network synthesis
CO 315.6	Explain the concepts of first order system & second order systems

3.1.2 CO-PO matrices of courses selected in 3.1.1(Six matrices to be mentioned; one per semester from 1st to 6th semester)

Course Name: C 101 [Mathematics - I (2001101)]

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
CO 101.1	3	1	-	-	-	-	-	-	-	-
CO 101.2	3	1	-	-	-	-	-	-	-	-
CO 101.3	3	1	-	-	-	-	-	-	-	-
CO 101.4	3	1	-	-	-	-	-	-	-	-
CO 101.5	3	1	-	-	-	-	-	-	-	-
Average	3.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

2. Course Name: C 115 [Fundamentals of Electrical & Electronics Engg.(2002204)]

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
CO 115.1	3	-	-	-	-	-	-	1	-	-
CO 115.2	3	1	-	-	-	-	-	1	-	-
CO 115.3	3	1	-	-	-	-	-	1	-	-
CO 115.4	3	-	-	-	-	-	-	1	-	-
CO 115.5	3	1	-	-	-	-	-	1	-	-
CO 115.6	3	-	-	-	-	-	-	1	-	-
Average	3.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00

3. Course Name: C 205 [Fundamentals of Basic electronics & Digital Electronics(2020305)]

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
CO 204.1	3	-	1	-	1	-	-	1	-	-
CO 204.2	-	2	-	-	-	-	-	-	-	-
CO 204.3	2	2	-	-	-	-	-	-	-	-
CO 204.4	-	2	-	-	2	-	-	-	-	-
CO 204.5	2	-	2	-	-	-	-	-	-	-
Average	2.33	2.33	1.5	0.00	1.5	0.00	0.00	1.00	0.00	0.00

4. Course Name: C 216 [Solar Power Technologies (2020404)]

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
CO 216.1	3	-	-	-	-	-	-	2	-	-
CO 216.1	3	-	-	-	-	-	-	-	2	-
CO 216.1	3	-	-	-	-	-	-	2	2	-
CO 216.1	3	-	-	-	-	-	-	-	2	-
CO 216.1	3	-	-	-	-	-	-	-	2	-
Average	3.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	2.00	0.00

5. Course Name: C 302 [Energy Conservation & Audit (2020502)]

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
CO 302.1	3	-	-	2	1	-	2	-	-	2
CO 302.2	3	-	-	2	1	-	1	2	3	-
CO 302.3	3	-	1	2	1	-	1	2	2	-
CO 302.4	3	-	-	2	1	-	1	1	1	-
CO 302.5	3	-	-	2	1	-	1	1	-	3
Average	3.00	0.00	1.00	2.00	1.00	0.00	1.20	2.00	1.67	2.5

6. Course Name: C 315 [Network Theory (2020604A)]

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
CO 315.1	3	3	-	-	-	-	-	3	2	-
CO 315.2	3	3	-	-	-	-	-	-	-	-
CO 315.3	3	3	-	-	-	-	-	3	2	-
CO 315.4	3	3	2	-	-	-	-	-	-	-
CO 315.5	3	2	-	-	-	-	-	-	-	-
CO 315.6	3	-	-	-	-	-	-	-	-	-
Average	3.00	2.80	2.00	0.00	0.00	0.00	0.00	3.00	2.00	0.00

3.1.3 - A Program level Course-PO matrix of all courses INCLUDING first year courses

Table 3.1.3 A Course - PO Matrix

Course	Course Name	PO1	PO2	PO3	PO4	PO5	PO6	PO7
C1 01	Mathematics - I	3	1	-	-	-	-	-
C1 02	Applied Physics - I	3.00	1.30	-	1.25	-	-	1.00
C1 03	Applied Chemistry - I	3.00	2.00	-	1.00	1.00	-	2.00
C1 04	Communication Skills in English	-	-	-	-	2.00	2.00	3.00
C1 05	Engineering Graphics	3.00	1.00	2.60	-	2.00	-	1.00
C1 06	Applied Physics Lab - I	3.00	-	-	3.00	-	-	1.00
C1 07	Applied Chemistry Lab - I	3.00	1.00	1.00	2.00	2.00	1.00	2.00
C1 08	Communication Skills in English Lab	-	-	-	-	1.67	-	1.00
C1 09	Engg. Workshop Practice (T.W)	3.00	-	-	2.25	2.00	-	2.23
C1 10	Sports and Yoga (T.W)	-	-	-	-	-	-	2.00
C1 11	KYP /IT Essential /Python?Others (T.W)	3.00	-	-	2.00	2.00	-	2.00
C1 12	Mathematics - II	3.00	1.80	-	-	-	-	-
C1 13	Applied Physics - II	3.00	2.00	1.00	1.00	-	-	1.00
C1 14	Introduction to IT Systems	3.00	-	-	1.00	1.00	-	1.00
C1 15	Fundamental of Electrical & Electronics Engg	3.00	1.00	-	-	-	-	-
C1 16	Engineering Mechanics	3.00	1.60	-	-	1.67	-	-
C1 17	Applied Physics Lab - II	2.00	2.00	-	-	-	-	-

C1 18	Introduction to IT System Lab	2.80	-	-	1.00	1.00	-	1.00
C1 19	Fundamental of Electrical and Electronics Engg. Lab	3.00	-	-	2.00	-	-	-
C1 20	Engineering Mechanics Lab	3.00	1.80	-	-	1.50	-	-
C1 21	Course under MOOCS /SWAYAM /ETC /Others (T.W)	2.00	-	-	-	-	-	1.00
C1 22	KYP/IT Essential /Python/Others (T.W)	3.00	-	-	-	1.00	-	-
C1 23	Environmental Science (T.W)	3.00	2.00	-	-	1.00	-	2.00
C2 01	Introduction to Electrical Power Generation System	3.00	-	-	-	1.75	-	2.00
C2 02	Electrical Circuits	3.00	2.40	-	-	-	-	-
C2 03	Electrical and Electronics Measurements	3.00	1.00	1.75	1.67	1.00	-	1.00
C2 04	Electric Motors and Transformers	3.00	2.00	-	-	-	-	-
C2 05	Fundamental of Basic Electronics & Digital Electronics	2.33	2.33	1.50	-	1.50	-	-
C2 06	Introduction to Electrical Power Generation Systems Laboratory	3.00	-	-	-	1.75	-	2.00
C2 07	Electrical Circuits Laboratory	3.00	2.40	-	3.00	-	-	-
C2 08	Web Technology Laboratory	2.00	-	-	-	-	-	-
C2 09	Electrical and Electronics Measurements Laboratory	3.00	1.00	1.75	1.67	1.00	-	1.00
C2 10	Electric Motors and Transformers Laboratory	2.00	-	-	2.80	-	-	-
C2 11	Python (T.W)	2.25	-	-	-	-	-	-

C2 12	Fundamentals of Basic Electronics and Digital Electronics (T.W)	2.33	-	-	-	1.00	2.00	1.00
C2 13	Power Electronics	2.60	2.00	-	-	1.00	-	1.00
C2 14	Electrical Power Transmission and Distribution	3.00	1.67	-	-	-	-	1.00
C2 15	Induction, Synchronous and Special Electrical Machines	3.00	2.00	-	-	1.00	-	-
C2 16	Solar Power Technologies	3.00	-	-	-	-	-	-
C2 17	Industrial Drives	3.00	-	-	-	-	1.00	1.20
C2 18	Power Electronics Laboratory	2.20	-	-	3.00	-	-	1.00
C2 19	Induction, Synchronous and Special Electrical Machines Laboratory	2.60	-	-	3.00	-	-	-
C2 20	Industrial Drives Laboratory	3.20	-	-	1.00	-	1.00	1.00
C2 21	MATLab	3.00	2.00	-	3.00	-	-	-
C2 22	Electric Power Transmission and Distribution (T.W)	3.00	2.00	-	-	1.50	2.00	1.50
C2 23	Solar Power Technologies (T.W)	3.00	-	-	-	-	-	-
C2 24	Course under MOOCs/ SWAYAM/ AutoCAD in Electrical Engineering or Others	3.00	-	-	-	-	-	1.60
C2 25	Summer Training / Industrial Visits	2.00	-	-	-	-	-	-
C3 01	Microprocessor and Microcontroller	3.00	-	-	1.00	1.00	1.20	1.00
C3 02	Energy Conservation and Audit	3.00	-	-	2.00	1.00	-	1.20
C3 03	Switchgear and Protection	2.50	1.50	1.80	2.67	3.00	-	-

C3 04	Electric Traction	2.00	-	-	-	-	-	-
C3 05	Soft Computing Techniques	2.80	2.67	1.67	-	1.00	-	1.25
C3 06	Microprocessor and Microcontroller Laboratory	3.00	1.00	-	1.60	1.00	1.00	1.00
C3 07	Energy Conservation and Audit Laboratory	2.25	-	-	-	-	1.00	1.00
C3 08	Switchgear and Protection Laboratory	2.40	-	2.00	3.00	-	-	-
C3 09	Electric Traction Laboratory	2.00	-	-	-	-	-	-
C3 10	Course under MOOCs/SWAYAM /AutoCAD in Electrical Engineering or Others	2.00	-	-	-	-	-	1.00
C3 11	Minor Project	2.50	3.00	3.00	3.00	-	3.00	-
C3 12	Entrepreneurship and Start-Ups	2.00	1.00	1.00	-	2.00	2.86	1.40
C3 13	Building Electrification	2.00	-	2.00	-	-	-	2.00
C3 14	Utilization of Electrical Energy	3.00	-	-	-	1.33	1.67	1.00
C3 15	Network Theory	3.00	2.80	2.00	-	-	-	-
C3 16	Project Management	3.00	1.67	-	-	-	1.50	1.00
C3 17	Building Electrification Laboratory	1.00	-	-	-	-	1.00	-
C3 18	Seminar	1.67	1.33	3.00	1.50	3.00	1.33	1.33
C3 19	Major Project	3.00	3.00	3.00	3.00	-	2.00	-
C3 20	Course under MOOCs/NPTEL/Others (T.W)	2.00	-	-	-	-	-	1.00
Direct Target		2.68	1.79	1.94	2.05	1.49	1.60	1.35

Table 3.1.3 B Course - PSO Matrix

Course	Course Name	PSO1	PSO2	PSO3
C1 01	Mathematics - I	-	-	-
C1 02	Applied Physics - I	2.00	-	-
C1 03	Applied Chemistry - I	-	-	-
C1 04	Communication Skills in English	-	-	-
C1 05	Engineering Graphics	1.00	-	-
C1 06	Applied Physics Lab - I	2.00	-	-
C1 07	Applied Chemistry Lab - I	-	-	-
C1 08	Communication Skills in English Lab	-	-	-
C1 09	Engg. Workshop Practice (T.W)	-	-	-
C1 10	Sports and Yoga (T.W)	-	-	-
C1 11	KYP /IT Essential /Python?Others (T.W)	-	-	1.00
C1 12	Mathematics - II	1.00	-	-
C1 13	Applied Physics - II	-	-	-
C1 14	Introduction to IT Systems	-	-	-
C1 15	Fundamental of Electrical & Electronics Engg	1.00	-	-
C1 16	Engineering Mechanics	-	-	1.00
C1 17	Applied Physics Lab - II	-	-	-

C1 18	Introduction to IT System Lab	-	-	-
C1 19	Fundamental of Electrical and Electronics Engg. Lab	1.00	-	-
C1 20	Engineering Mechanics Lab	-	-	1.00
C1 21	Course under MOOCS /SWAYAM /ETC /Others (T.W)	-	-	-
C1 22	KYP/IT Essential /Python/Others (T.W)	-	-	-
C1 23	Environmental Science (T.W)	-	-	-
C2 01	Introduction to Electrical Power Generation System	-	1.80	-
C2 02	Electrical Circuits	2.00	-	-
C2 03	Electrical and Electronics Measurements	1.00	1.00	1.00
C2 04	Electric Motors and Transformers	2.67	1.00	-
C2 05	Fundamental of Basic Electronics & Digital Electronics	1.00	-	-
C2 06	Introduction to Electrical Power Generation Systems Laboratory	-	1.80	-
C2 07	Electrical Circuits Laboratory	2.00	-	-
C2 08	Web Technology Laboratory	-	-	-
C2 09	Electrical and Electronics Measurements Laboratory	1.00	1.00	1.00
C2 10	Electric Motors and Transformers Laboratory	3.00	-	-
C2 11	Python (T.W)	-	-	-

C2 12	Fundamentals of Basic Electronics and Digital Electronics (T.W)	-	-	1.83
C2 13	Power Electronics	2.00	1.00	1.00
C2 14	Electrical Power Transmission and Distribution	-	3.00	-
C2 15	Induction, Synchronous and Special Electrical Machines	3.00	-	-
C2 16	Solar Power Technologies	2.00	2.00	-
C2 17	Industrial Drives	2.00	2.00	1.00
C2 18	Power Electronics Laboratory	2.20	1.00	1.00
C2 19	Induction, Synchronous and Special Electrical Machines Laboratory	1.60	-	-
C2 20	Industrial Drives Laboratory	1.00	1.00	1.00
C2 21	MATLab	3.00	-	-
C2 22	Electric Power Transmission and Distribution (T.W)	-	2.60	-
C2 23	Solar Power Technologies (T.W)	2.00	2.00	-
C2 24	Course under MOOCs/ SWAYAM/ AutoCAD in Electrical Engineering or Others	-	-	1.20
C2 25	Summer Training / Industrial Visits	2.00	2.00	2.00
C3 01	Microprocessor and Microcontroller	-	-	1.00
C3 02	Energy Conservation and Audit	1.67	2.00	2.50
C3 03	Switchgear and Protection	3.00	2.00	-

C3 04	Electric Traction	1.75	2.00	-
C3 05	Soft Computing Techniques	1.00	-	-
C3 06	Microprocessor and Microcontroller Laboratory	-	-	1.00
C3 07	Energy Conservation and Audit Laboratory	2.50	-	1.33
C3 08	Switchgear and Protection Laboratory	3.00	-	-
C3 09	Electric Traction Laboratory	1.75	2.00	-
C3 10	Course under MOOCs/SWAYAM /AutoCAD in Electrical Engineering or Others	-	-	-
C3 11	Minor Project	3.00	3.00	3.00
C3 12	Entrepreneurship and Start-Ups	-	-	-
C3 13	Building Electrification	-	2.00	2.00
C3 14	Utilization of Electrical Energy	3.00	1.67	1.40
C3 15	Network Theory	3.00	2.00	-
C3 16	Project Management	1.00	-	-
C3 17	Building Electrification Laboratory	-	-	-
C3 18	Seminar	-	-	1.50
C3 19	Major Project	3.00	3.00	-
C3 20	Course under MOOCs/NPTEL/Others (T.W)	-	-	-
Direct Target		1.98	1.86	1.39

3.2 Attainment of Course Outcomes

3.2.1 Describe the assessment processes used to gather the data upon which the evaluation of Course Outcome is based

The assessment processes for evaluating Course Outcomes (COs) at our institution encompass both direct and indirect methods, ensuring a comprehensive understanding of student learning and the attainment of intended outcomes.

Types of Assessment:

1. Direct Assessment
2. In Direct Assessment

Direct Assessment :

Direct assessment involves the evaluation of students' performance through various activities and examinations directly related to the course.

Here are the direct assessment processes used :

Internal Examination Assessment :

- Internal assessments are carried out based on students' performance in Class Tests. Three Class Tests, each addressing a specific portion of the syllabus, and one optional Model Exam are conducted as per the academic calendar.
- Class Tests carry different weightage, with Class Test I covering 30% of the syllabus and its associated COs, Class Test II covering 35%, Class Test III covering 35%, and the Model Exam addressing CO1 to CO5.
- Assessment of students' performance in these examinations is conducted by the course faculty in charge.

Board Examination Assessment :

- Board examinations are conducted by the State Board of Technical Education (SBTE) for each course. These exams account for a significant portion of the CO attainment, with a maximum of 70 marks and a duration of 3 hours.

- The results obtained by students in these board exams are collected by the Class advisor from the SBTE web portal, and result analysis is performed. CO attainment is analyzed as an average based on this SBTE mark analysis.

Assignment :

- Assignments are a critical component of reinforcing learning and aligning with COs.
- Two assignments, each carrying 25 marks, are scheduled before specific Class Tests.
- Assignments are mapped to specific COs to ensure they directly address the intended learning outcomes.

Seminar :

- Seminars are used as a platform for students to showcase their understanding of the subject.
- Faculty in charge evaluates these seminars using rubrics.

Laboratory Experiments :

- Laboratory experiments are designed to address specific COs.
- The assessment includes evaluating students on theoretical concepts, execution, calculations, viva-voce, and record notes, totaling 50 marks.

Student Projects :

- Student projects, including minor projects in the second year and major projects in the final year, are comprehensively assessed through a combination of internal and external evaluations.
- Three internal reviews assess project progress, and a final external examination (Viva Voce) evaluates students' knowledge, presentation skills, and understanding of their project.
- The total evaluation for each project includes internal and external marks, totaling 100 marks.

Indirect Assessment:

- Indirect assessment is conducted by gathering data through surveys and feedback from students.
- This method helps in understanding the effectiveness of the courses in a more holistic manner:

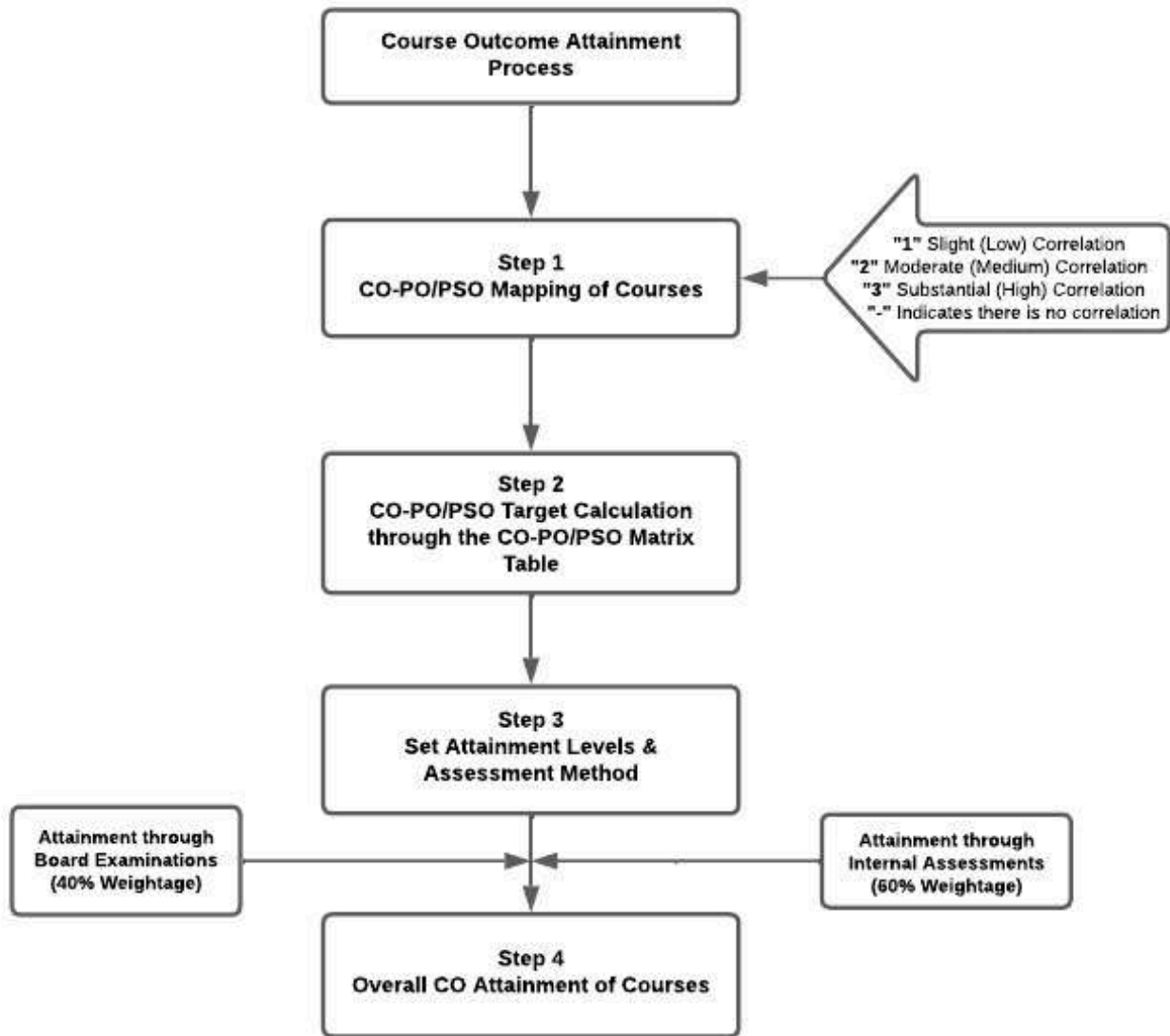
Course-End Survey :

- A course-end survey is administered for every theory course, and individual students pursuing the program are also surveyed.
- These surveys are conducted online through a cloud-based software platform.
- Survey questions are carefully mapped to specific COs, ensuring that the feedback received directly relates to the intended learning outcomes.
- Ratings provided by students are aggregated, and the overall percentage of ratings is computed.
- This provides valuable insights into the effectiveness of the courses and whether COs are being met.

These robust assessment processes, comprising both direct and indirect methods, help ensure that the evaluation of Course Outcomes at our institution is comprehensive, transparent, and aligns with our educational goals. They also provide essential feedback for continuous improvement and curriculum development.

3.2.2. Record the attainment of Course Outcome of all courses with respect to set attainment levels

In order to ensure that courses meet their intended learning objectives, it is essential to record the attainment of Course Outcomes (COs) in alignment with the predefined attainment levels. This process is crucial for maintaining and enhancing the quality of education. Here, we outline a systematic approach to record and assess the attainment of Course Outcomes, utilizing a combination of CO-PO/PSO mapping, target calculation, and attainment assessment.



Step 1: CO-PO/PSO Mapping of Courses

- Course Outcome (CO) attainment begins with a clear understanding of the Program Outcomes (POs) and Program-Specific Outcomes (PSOs) to which they are linked.
- This mapping ensures that each course is aligned with the broader program goals, making it easier to assess how well the course is contributing to these objectives.

All the courses together must cover all the POs (and PSOs). For a course, we map the COs to POs through the CO-PO matrix and to PSOs through the CO-PSO matrix as shown below.

The various correlation levels are:

Correlation Number	Correlation
1	Slight (Low) Correlation
2	Moderate (Medium) Correlation
3	Substantial (High) Correlation
-	Indicates there is no correlation

Step 2: CO-PO/PSO Target Calculation through the CO-PO/PSO Matrix Table

- Once the mapping is complete, we calculate the target attainment levels for each Course Outcome.
- This is achieved through a matrix table that outlines the relationships between COs, POs, and PSOs.
- The target levels are based on the specific needs and expectations of each course, taking into consideration the overall program goals.

Step 3: Set Attainment Levels & Assessment Method:

- To assess a course, we consider 40% of the total marks selected by the program. This allocation helps us evaluate the course outcomes based on a significant portion of the assessment process.

Set Attainment Levels:

For each course, we have established specific attainment levels, which are as follows:

- **Measuring Course Outcomes attained through Internal Assessments:**

The procedure to decide on attainment level is as follows:

In order to decide the attainment in internal performance of students, the marks obtained in each internal assessment instrument such as assignments, class tests, Lab Evaluation, Major projects, Seminars and Mini projects are calculated and they are compared with the set average score of the whole class in respective internal assessment instruments.

Attainment Level 1:	This level is achieved when 40 - 49% of the students score more than 40% of the marks in the respective internal assessment instruments for the course. It indicates a basic level of achievement of course outcomes.
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Attainment Level 2:	When 50 - 59% of the students score more than 40% of the marks in the respective internal assessment instruments, the course attains Level 2. This signifies a higher level of attainment.
Attainment Level 3:	The highest level is attained when 60% or more of the students score more than 40% of the marks in the respective internal assessment instruments. This reflects an excellent level of achievement of course outcomes.

- **Measuring Course Outcomes attained through Board Examinations:**

The results of SBTE Examinations are not available explicitly co-relating to individual CO. So, we have considered the SBTE examination results as the average basis of attainments of all COs. The Course Outcomes are measured through a comparison of all students' results of each. The department set a target average percentage of 40% for all courses. The procedure to decide on attainment level is as follows:

Attainment Level 1:	If 40 - 49% of students score more than the set target average percentage in the final examination, the attainment level is considered to be: 1 It indicates a basic level of achievement of course outcomes.
Attainment Level 2:	If 50 - 59% of students score more than the set target average percentage in the final Examination, the attainment level is considered to be: 2 This signifies a higher level of attainment.
Attainment Level 3:	If 60% or more students score more than the set target average percentage in the final examination, the attainment level is considered to be: 3 This reflects an excellent level of achievement of course outcomes.

Step 4: CO Attainment of Courses:

- Overall Course Outcome Attainment:

To assess the attainment of Course Outcomes, we use a combination of direct assessment methods:

- Direct COs Attainment Assessments:

Internal Examination Assessment (Weightage: 60%)

- Internal examinations play a vital role in evaluating how well students have achieved the Course Outcomes.
- A significant weightage of 60% is assigned to this assessment method.
- Justification for this weightage may include the idea that internal assessments are designed by the instructors, allowing them to tailor questions directly to the COs.
- This level of customization ensures a more focused assessment of CO attainment.

Board Examination Assessment (Weightage: 40%)

- Board examinations, being external assessments, provide an objective measure of student performance related to Course Outcomes.
- The weightage of 40% is attributed to this assessment method. Justification for this weightage may emphasize the impartiality and standardization of board examinations, ensuring a reliable measure of CO attainment.

Direct COs Attainment Assessments:

Direct Assessment	Percentage of Weightage
Internal Examination Assessment	60%
Board Examination Assessment	40%
Total Direct COs Attainment	100%

This structured approach to recording and evaluating the attainment of course outcomes allows our institution to maintain a clear and transparent system for assessing the effectiveness of our courses. By setting specific attainment levels, we can continuously monitor and improve the quality of education we provide and ensure that our students achieve the intended learning outcomes.

The attainment of course outcome of all courses for the academic year 2022-2023:

Course Code	Course Name	Attainment through Internal Assessment	Attainment through Board Examination	Overall CO Attainment
C1 01	Mathematics - I	0.63	1.20	1.83
C1 02	Applied Physics - I	1.80	1.20	3.00
C1 03	Applied Chemistry - I	1.80	1.20	3.00
C1 04	Communication Skills in English	1.68	1.20	2.88
C1 05	Engineering Graphics	1.56	1.20	2.76
C1 06	Applied Physics Lab - I	1.80	1.20	3.00
C1 07	Applied Chemistry Lab - I	1.80	1.20	3.00
C1 08	Communication Skills in English Lab	1.80	1.20	3.00
C1 09	Engg. Workshop Practice (T.W)	1.80	1.20	3.00
C1 10	Sports and Yoga (T.W)	1.80	1.20	3.00
C1 11	KYP /IT Essential /Python?Others (T.W)	1.80	1.20	3.00
C1 12	Mathematics - II	0.76	1.80	2.56
C1 13	Applied Physics - II	1.56	0.88	2.44
C1 14	Introduction to IT Systems	1.80	1.20	3.00
C1 15	Fundamental of Electrical & Electronics Engg	1.75	1.20	2.95
C1 16	Engineering Mechanics	1.45	1.20	2.65
C1 17	Applied Physics Lab - II	1.44	0.94	2.38

C1 18	Introduction to IT System Lab	1.80	1.20	3.00
C1 19	Fundamental of Electrical and Electronics Engg. Lab	1.80	1.20	3.00
C1 20	Engineering Mechanics Lab	1.80	1.20	3.00
C1 21	Course under MOOCS /SWAYAM /ETC /Others (T.W)	1.20	1.80	3.00
C1 22	KYP/IT Essential /Python/Others (T.W)	1.80	1.20	3.00
C1 23	Environmental Science (T.W)	1.80	0.00	1.80
C2 01	Introduction to Electrical Power Generation System	1.23	1.12	2.35
C2 02	Electrical Circuits	1.26	1.20	2.46
C2 03	Electrical and Electronics Measurements	1.01	1.20	2.21
C2 04	Electric Motors and Transformers	1.52	1.20	2.72
C2 05	Fundamental of Basic Electronics & Digital Electronics	1.48	0.96	2.44
C2 06	Introduction to Electrical Power Generation Systems Laboratory	1.80	1.20	3.00
C2 07	Electrical Circuits Laboratory	1.80	1.20	3.00
C2 08	Web Technology Laboratory	1.57	1.05	2.63
C2 09	Electrical and Electronics Measurements Laboratory	1.80	1.20	3.00
C2 10	Electric Motors and Transformers Laboratory	1.80	1.20	3.00
C2 11	Python (T.W)	1.80	0.00	1.80

C2 12	Fundamentals of Basic Electronics and Digital Electronics (T.W)	1.80	1.20	3.00
C2 13	Power Electronics	1.28	1.20	2.48
C2 14	Electrical Power Transmission and Distribution	1.36	1.20	2.56
C2 15	Induction, Synchronous and Special Electrical Machines	1.48	1.20	2.68
C2 16	Solar Power Technologies	1.55	1.20	2.75
C2 17	Industrial Drives	1.40	1.20	2.60
C2 18	Power Electronics Laboratory	1.80	1.20	3.00
C2 19	Induction, Synchronous and Special Electrical Machines Laboratory	1.20	1.20	2.40
C2 20	Industrial Drives Laboratory	1.80	1.20	3.00
C2 21	MATLab	1.80	1.20	3.00
C2 22	Electric Power Transmission and Distribution (T.W)	1.80	1.20	3.00
C2 23	Solar Power Technologies (T.W)	1.80	1.20	3.00
C2 24	Course under MOOCs/ SWAYAM/ AutoCAD in Electrical Engineering or Others	1.80	1.20	3.00
C2 25	Summer Training / Industrial Visits	1.80	1.20	3.00
C3 01	Microprocessor and Microcontroller	1.80	1.20	3.00
C3 02	Energy Conservation and Audit	1.80	1.20	3.00
C3 03	Switchgear and Protection	1.80	1.20	3.00

C3 04	Electric Traction	1.78	1.20	2.98
C3 05	Soft Computing Techniques	1.80	1.20	3.00
C3 06	Microprocessor and Microcontroller Laboratory	1.80	1.20	3.00
C3 07	Energy Conservation and Audit Laboratory	1.80	1.20	3.00
C3 08	Switchgear and Protection Laboratory	1.80	1.20	3.00
C3 09	Electric Traction Laboratory	1.80	1.20	3.00
C3 10	Course under MOOCs/SWAYAM /AutoCAD in Electrical Engineering or Others	1.80	1.20	3.00
C3 11	Minor Project	1.80	1.20	3.00
C3 12	Entrepreneurship and Start-Ups	1.80	1.20	3.00
C3 13	Building Electrification	1.80	1.20	3.00
C3 14	Utilization of Electrical Energy	1.60	1.20	2.80
C3 15	Network Theory	1.64	1.20	2.84
C3 16	Project Management	1.80	1.20	3.00
C3 17	Building Electrification Laboratory	1.80	1.20	3.00
C3 18	Seminar	1.80	1.20	3.00
C3 19	Major Project	1.80	1.20	3.00
C3 20	Course under MOOCs/NPTEL/Others (T.W)	1.80	1.20	3.00

3.3 Attainment of Program Outcomes and Program Specific Outcomes

3.3.1 Describe assessment tools and processes used for assessing the attainment of each POs and PSOs as mentioned in Annexure 1

The assessment processes for evaluating Course Outcomes (COs) at our institution encompass both direct and indirect methods, ensuring a comprehensive understanding of student learning and the attainment of intended outcomes.

Types of Assessment:

- Direct Assessment
- In Direct Assessment

Direct Assessment:

- Direct assessment involves the evaluation of students' performance through various activities and examinations directly related to the course.

Here are the direct assessment processes used:

Internal Examination Assessment:

- Internal assessments are carried out based on students' performance in Class Tests.
- Three Class Tests, each addressing a specific portion of the syllabus, and one optional Model Exam are conducted as per the academic calendar.
- Class Tests carry different weightage, with Class Test I covering 30% of the syllabus and its associated COs, Class Test II covering 35%, Class Test III covering 35%, and the Model Exam addressing CO1 to CO5.
- Assessment of students' performance in these examinations is conducted by the course faculty in charge.

Board Examination Assessment:

- Board examinations are conducted by the State Board of Technical Education (SBTE) for each course.
- These exams account for a significant portion of the CO attainment, with a maximum of 70 marks and a duration of 3 hours.
- The results obtained by students in these board exams are collected by the Class advisor from the SBTE web portal, and result analysis is performed.
- CO attainment is analyzed as an average based on this SBTE mark analysis.

Assignment:

- Assignments are a critical component of reinforcing learning and aligning with COs.
- Two assignments, each carrying 25 marks, are scheduled before specific Class Tests.

- Assignments are mapped to specific COs to ensure they directly address the intended learning outcomes.

Seminar:

- Seminars are used as a platform for students to showcase their understanding of the subject.
- Faculty in charge evaluates these seminars using rubrics.

Laboratory Experiments:

- Laboratory experiments are designed to address specific COs.
- The assessment includes evaluating students on theoretical concepts, execution, calculations, viva-voce, and record notes, totaling 50 marks.

Student Projects:

- Student projects, including minor projects in the second year and major projects in the final year, are comprehensively assessed through a combination of internal and external evaluations.
- Three internal reviews assess project progress, and a final external examination (Viva Voce) evaluates students' knowledge, presentation skills, and understanding of their project.
- The total evaluation for each project includes internal and external marks, totaling 100 marks.

Indirect Assessment:

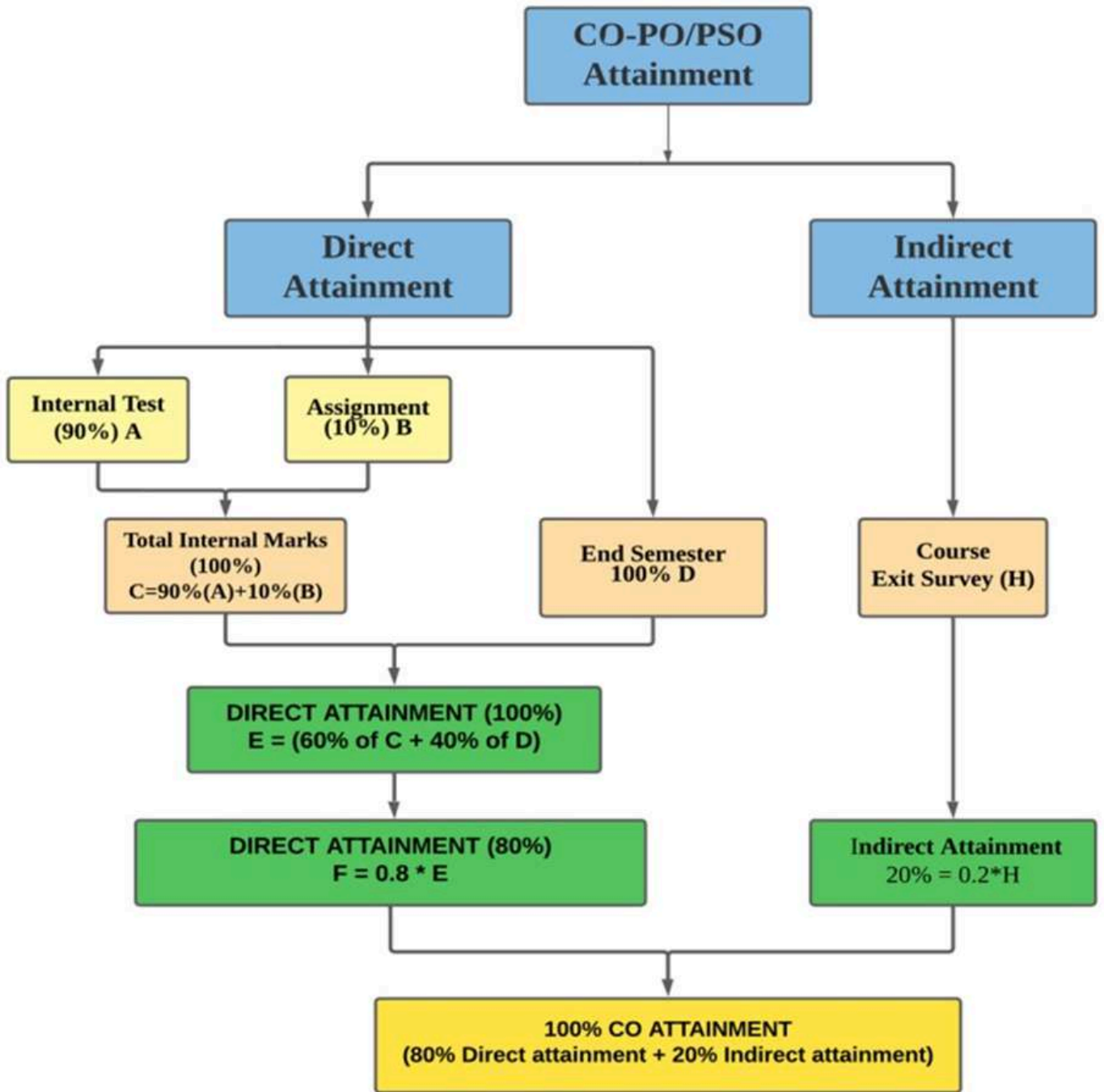
- Indirect assessment is conducted by gathering data through surveys and feedback from students.

This method helps in understanding the effectiveness of the courses in a more holistic manner:

Course-End Survey:

- A course-end survey is administered for every theory course, and individual students pursuing the program are also surveyed.
- These surveys are conducted online through a cloud-based software platform.
- Survey questions are carefully mapped to specific COs, ensuring that the feedback received directly relates to the intended learning outcomes.
- Ratings provided by students are aggregated, and the overall percentage of ratings is computed.
- This provides valuable insights into the effectiveness of the courses and whether COs are being met.

These robust assessment processes, comprising both direct and indirect methods, help ensure that the evaluation of Course Outcomes at our institution is comprehensive, transparent, and aligns with our educational goals. They also provide essential feedback for continuous improvement and curriculum development.



3.3.2 Provide Results of Evaluation of each PO & PSO

The evaluation result of each POs and PSOs are shown in the Table 3.3.2(a) and Table 3.3.2(b)

Table 3.3.2 (a) Program Outcome Attainment

Course	Course Name	PO1	PO2	PO3	PO4	PO5	PO6	PO7
C1 01	Mathematics - I	1.83	0.61	-	-	-	-	-
C1 02	Applied Physics - I	3.00	1.33	-	1.25	-	-	1.00
C1 03	Applied Chemistry - I	3.00	2.00	-	1.00	1.00	-	2.00
C1 04	Communication Skills in English	-	-	-	-	1.92	1.29	2.88
C1 05	Engineering Graphics	2.76	0.92	2.39	-	1.84	-	0.92
C1 06	Applied Physics Lab - I	3.00	-	-	3.00	-	-	1.00
C1 07	Applied Chemistry Lab - I	3.00	1.00	1.00	2.00	2.00	1.00	2.00
C1 08	Communication Skills in English Lab	-	-	-	-	1.67	-	1.00
C1 09	Engg. Workshop Practice (T.W)	3.00	-	-	2.25	2.00	-	2.33
C1 10	Sports and Yoga (T.W)	-	-	-	-	-	-	2.00
C1 11	KYP /IT Essential /Python?Others (T.W)	3.00	-	-	2.00	2.00	-	2.00
C1 12	Mathematics - II	2.35	1.40	-	-	-	-	-
C1 13	Applied Physics - II	2.44	1.63	0.81	0.81	-	-	0.81
C1 14	Introduction to IT Systems	3.00	-	-	1.00	1.00	-	1.00
C1 15	Fundamental of Electrical & Electronics Engg	2.95	0.89	-	-	-	-	-
C1 16	Engineering Mechanics	2.65	1.41	-	-	1.47	-	-
C1 17	Applied Physics Lab - II	1.59	1.59	-	-	-	-	-
C1 18	Introduction to IT System Lab	2.80	-	-	1.00	1.00	-	1.00
C1 19	Fundamental of Electrical and Electronics Engg. Lab	3.00	-	-	2.00	-	-	-
C1 20	Engineering Mechanics Lab	3.00	1.80	-	-	1.50	-	-
C1 21	Course under MOOCS /SWAYAM /ETC /Others (T.W)	2.00	-	-	-	-	-	1.00

C1 22	KYP/IT Essential /Python/Others (T.W)	3.00	-	-	-	1.00	-	-
C1 23	Environmental Science (T.W)	1.80	1.20	-	-	0.60	-	1.20
C2 01	Introduction to Electrical Power Generation System	2.35	-	-	-	1.37	-	1.57
C2 02	Electrical Circuits	2.46	1.97	-	-	-	-	-
C2 03	Electrical and Electronics Measurements	2.21	0.74	1.29	1.23	0.74	-	0.74
C2 04	Electric Motors and Transformers	2.72	1.82	-	-	-	-	-
C2 05	Fundamental of Basic Electronics & Digital Electronics	1.86	1.86	1.20	-	1.20	-	-
C2 06	Introduction to Electrical Power Generation Systems Laboratory	3.00	-	-	-	1.75	-	2.00
C2 07	Electrical Circuits Laboratory	3.00	2.40	-	3.00	-	-	-
C2 08	Web Technology Laboratory	1.75	-	-	-	-	-	-
C2 09	Electrical and Electronics Measurements Laboratory	3.00	1.00	1.75	1.67	1.00	-	1.00
C2 10	Electric Motors and Transformers Laboratory	2.00	-	-	2.80	-	-	-
C2 11	Python (T.W)	1.20	-	1.20	1.20	-	1.20	1.40
C2 12	Fundamentals of Basic Electronics and Digital Electronics (T.W)	2.33	-	-	-	1.00	2.00	1.00
C2 13	Power Electronics	2.13	1.64	-	-	0.82	-	0.82
C2 14	Electrical Power Transmission and Distribution	2.56	1.42	-	-	-	-	0.85
C2 15	Induction, Synchronous and Special Electrical Machines	2.68	1.78	-	-	0.89	-	-
C2 16	Solar Power Technologies	2.75	-	-	-	-	-	-
C2 17	Industrial Drives	0.60	-	-	-	-	0.87	1.04
C2 18	Power Electronics Laboratory	2.20	-	-	3.00	-	-	1.00
C2 19	Induction, Synchronous and Special Electrical Machines Laboratory	2.08	-	-	2.40	-	-	-
C2 20	Industrial Drives Laboratory	2.20	-	-	1.00	-	1.00	1.00
C2 21	MATLab	3.00	2.00	-	3.00	-	-	-

C2 22	Electric Power Transmission and Distribution (T.W)	3.00	2.00	-	-	1.50	2.00	1.50
C2 23	Solar Power Technologies (T.W)	3.00	-	-	-	-	-	-
C2 24	Course under MOOCs/ SWAYAM/ AutoCAD in Electrical Engineering or Others	3.00	-	-	-	-	-	1.60
C2 25	Summer Training / Industrial Visits	2.00	-	-	-	-	-	-
C3 01	Microprocessor and Microcontroller	3.00	-	-	1.00	1.00	1.20	1.00
C3 02	Energy Conservation and Audit	3.00	-	-	2.00	1.00	-	1.40
C3 03	Switchgear and Protection	2.50	1.50	1.80	2.67	3.00	-	-
C3 04	Electric Traction	1.99	-	-	-	-	-	-
C3 05	Soft Computing Techniques	2.80	2.67	1.67	-	1.00	-	1.25
C3 06	Microprocessor and Microcontroller Laboratory	3.00	1.00	-	1.60	1.00	1.00	1.00
C3 07	Energy Conservation and Audit Laboratory	1.25	-	-	-	-	1.00	1.00
C3 08	Switchgear and Protection Laboratory	3.00	-	2.00	3.00	-	-	-
C3 09	Electric Traction Laboratory	2.00	-	-	-	-	-	-
C3 10	Course under MOOCs/SWAYAM /AutoCAD in Electrical Engineering or Others	2.00	-	-	-	-	-	1.00
C3 11	Minor Project	2.50	3.00	3.00	3.00	-	3.00	-
C3 12	Entrepreneurship and Start-Ups	2.00	1.00	1.00	-	2.00	2.86	1.40
C3 13	Building Electrification	2.00	-	2.00	-	-	-	2.00
C3 14	Utilization of Electrical Energy	2.80	-	-	-	1.24	1.56	0.93
C3 15	Network Theory	2.84	2.65	1.90	-	-	-	-
C3 16	Project Management	3.00	1.67	-	-	-	1.50	1.00
C3 17	Building Electrification Laboratory	1.00	-	-	-	-	1.00	-
C3 18	Seminar	1.67	1.33	3.00	1.50	3.00	1.33	1.33
C3 19	Major Project	3.00	0.30	3.00	3.00	-	2.00	-
C3 20	Course under MOOCs/NPTEL/Others (T.W)	2.00	-	-	-	-	-	1.00

Average outcome (Direct)	2.46	1.55	1.81	1.98	1.42	1.52
Attainment (80% of average outcome)	1.96	1.24	1.45	1.58	1.13	1.21
Average outcome (InDirect)	2.61	1.68	1.41	1.33	1.08	1.28
Attainment (20% of average outcome)	0.52	0.34	0.28	0.27	0.22	0.26
Sum of Direct & Indirect Attainment	2.49	1.57	1.73	1.85	1.35	1.47

Table 3.3.2 (b) Program Specific Outcome Attainment

Course	Course Name	PSO 1	PSO 2	PSO 3
C1 01	Mathematics - I	-	-	-
C1 02	Applied Physics - I	2.00	-	-
C1 03	Applied Chemistry - I	-	-	-
C1 04	Communication Skills in English	-	-	-
C1 05	Engineering Graphics	0.92	-	-
C1 06	Applied Physics Lab - I	2.00	-	-
C1 07	Applied Chemistry Lab - I	-	-	-
C1 08	Communication Skills in English Lab	-	-	-
C1 09	Engg. Workshop Practice (T.W)	-	-	-
C1 10	Sports and Yoga (T.W)	-	-	-
C1 11	KYP /IT Essential /Python?Others (T.W)	-	--	1.00
C1 12	Mathematics - II	0.71	-	-
C1 13	Applied Physics - II	-	-	-
C1 14	Introduction to IT Systems	-	-	-
C1 15	Fundamental of Electrical & Electronics Engg	0.98	-	-
C1 16	Engineering Mechanics	-	-	0.88
C1 17	Applied Physics Lab - II	-	-	-
C1 18	Introduction to IT System Lab	-	-	-

C1 19	Fundamental of Electrical and Electronics Engg. Lab	1.00	-	-
C1 20	Engineering Mechanics Lab	-	-	1.00
C1 21	Course under MOOCS /SWAYAM /ETC /Others (T.W)	-	-	-
C1 22	KYP/IT Essential /Python/Others (T.W)	-	-	-
C1 23	Environmental Science (T.W)	-	-	-
C2 01	Introduction to Electrical Power Generation System	-	1.41	-
C2 02	Electrical Circuits	1.64	-	-
C2 03	Electrical and Electronics Measurements	0.74	0.74	0.74
C2 04	Electric Motors and Transformers	2.42	0.91	-
C2 05	Fundamental of Basic Electronics & Digital Electronics	0.80	-	-
C2 06	Introduction to Electrical Power Generation Systems Laboratory	-	1.80	-
C2 07	Electrical Circuits Laboratory	2.00	-	-
C2 08	Web Technology Laboratory	-	-	-
C2 09	Electrical and Electronics Measurements Laboratory	1.00	1.00	1.00
C2 10	Electric Motors and Transformers Laboratory	3.00	-	-
C2 11	Python (T.W)	-	-	-
C2 12	Fundamentals of Basic Electronics and Digital Electronics (T.W)	-	-	1.83
C2 13	Power Electronics	1.64	0.82	0.82
C2 14	Electrical Power Transmission and Distribution	-	2.56	-
C2 15	Induction, Synchronous and Special Electrical Machines	2.68	-	-
C2 16	Solar Power Technologies	1.83	1.83	-
C2 17	Industrial Drives	1.73	1.73	0.87
C2 18	Power Electronics Laboratory	2.20	1.00	1.00
C2 19	Induction, Synchronous and Special Electrical Machines Laboratory	1.28	-	-
C2 20	Industrial Drives Laboratory	1.00	1.00	1.00

C2 21	MATLab	3.00	-	-
C2 22	Electric Power Transmission and Distribution (T.W)	-	2.60	-
C2 23	Solar Power Technologies (T.W)	2.00	2.00	-
C2 24	Course under MOOCs/ SWAYAM/ AutoCAD in Electrical Engineering or Others	-	-	1.20
C2 25	Summer Training / Industrial Visits	2.00	2.00	2.00
C3 01	Microprocessor and Microcontroller	-	-	1.00
C3 02	Energy Conservation and Audit	1.67	2.00	2.50
C3 03	Switchgear and Protection	3.00	2.00	-
C3 04	Electric Traction	1.74	1.99	-
C3 05	Soft Computing Techniques	1.00	-	-
C3 06	Microprocessor and Microcontroller Laboratory	-	-	1.00
C3 07	Energy Conservation and Audit Laboratory	2.50	-	1.33
C3 08	Switchgear and Protection Laboratory	3.00	-	-
C3 09	Electric Traction Laboratory	1.75	2.00	-
C3 10	Course under MOOCs/SWAYAM /AutoCAD in Electrical Engineering or Others	-	-	-
C3 11	Minor Project	3.00	3.00	3.00
C3 12	Entrepreneurship and Start-Ups	-	-	-
C3 13	Building Electrification	-	2.00	2.00
C3 14	Utilization of Electrical Energy	2.80	1.56	1.31
C3 15	Network Theory	2.84	1.90	-
C3 16	Project Management	1.00	-	-
C3 17	Building Electrification Laboratory	-	-	-
C3 18	Seminar	-	-	1.50
C3 19	Major Project	3.00	0.30	-
C3 20	Course under MOOCs/NPTEL/Others (T.W)	-	-	-
Average outcome (Direct)			1.66	1.35

Attainment (80% of average outcome)	1.33	1.08
Average outcome (InDirect)	1.69	1.29
Attainment (20% of average outcome)	0.34	0.26
Sum of Direct & Indirect Attainment	1.66	1.34

Criterion 4

Student's Performance

Intake Information

Table 4.1

Item	2023 - 2024 (CAY)	2022 - 2023 (CAYm1)	2021 - 2022 (CAYm2)	2020 - 2021 (CAYm3)	2019 - 2020 (CAYm4)	2018 - 2019 (CAYm5)
Sanctioned intake strength of the program((N)	60	48	48	48	48	60
Total number of students, admitted through state level counseling (N1)	38	47	44	45	45	0
Number of students, admitted through Institute level quota (N2)	0	0	0	0	0	19
Number of students, admitted through Lateral Entry (N3)	1	0	3	6	0	0
Total number of students admitted in the programme(N1 + N2 + N3)	39	47	47	51	45	19

Table 4.2

Year of entry	Total No of students admitted in the program (N1 + N2 + N3)	Number of students who have successfully passed without backlogs in any year of study		
		I year	II year	III year
2023 - 2024	39			
2022 - 2023	47	16		
2021 - 2022	47	6	23	
2020 - 2021(LYG)	51	17	18	23
2019 - 2020(LYGm1)	45	4	4	4
2018 - 2019(LYGm2)	19	10	5	4

Table 4.3

Year of entry	Total No of students admitted in the program (N1 + N2 + N3)	Number of students who have successfully graduated in stipulated period of study) [Total of with Backlog + without Backlog]		
		I year	II year	III year
2023 - 2024	39			
2022 - 2023	47	36		
2021 - 2022	47	24	27	
2020 - 2021(LYG)	51	31	25	23
2019 - 2020(LYGm1)	45	42	34	30
2018 - 2019(LYGm2)	19	16	14	12

4.1 Enrolment Ratio

	N (From Table 4.1)	N1 + N2 (From 4.1)	Enrollment Ratio [(N1 + N2 / N)*100]
2022 - 2024	60	38	63.33
2022 - 2023	48	47	97.92

2021 - 2022	48	44	91.67
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Average [(ER1 + ER2 + ER3) / 3] : 84.31

Assessment : 20.00

4.2 Success Rate in the stipulated period of the program

4.2.1 Success rate without backlogs in any year of study

Item	Last Year Graduate (2020 - 21)	Last Year Graduate Minus 1 Batch (2019 - 20)	Last Year Graduate Minus 2 Batch (2018 - 19)
Total Number of students (X) (admitted through state level counseling + admitted through Institute on Level quota + admitted through Lateral entry) (N1 + N2 + N3)	45	45	19
Number of students who have graduated without backlogs in the stipulated period (Y)	15	4	4
Success Index [SI = Y / X]	0.33	0.09	0.21

Average SI [(SI1 + SI2 + SI3) / 3] : 0.21

Assessment [40 * Average SI] : 8.4

4.2.2 Success rate in stipulated period

Item	Last Year Graduate (2020 - 21)	Last Year Graduate Minus 1 Batch (2019 - 20)	Last Year Graduate Minus 2 Batch (2018 - 19)
Total Number of students (X) (admitted through state level counseling + admitted through Institute on Level quota + admitted through Lateral entry) (N1 + N2 + N3)	45	45	19
Number of students who have graduated without backlogs in the stipulated period (Y)	23	30	12
Success Index [SI = Y / X]	0.51	0.67	0.63

Average SI [(SI1 + SI2 + SI3) / 3]: 0.60

Assessment [20 * Average SI] : 12.00

4.3 Academic Performance in First Year

Academic Performance	2022-23 (CAYm1)	2021-22 (CAYm2)	2020-21 (CAYm3)
Mean of CGPA or mean percentage of all successful students(X)	7.71	7.71	9.36
Total number of successful	36	24	31

students(Y)			
Total number of students appeared in the examination(Z)	39	36	45
API [$X*(Y/Z)$]:	7.11	5.14	6.45

2021-22 (CAYm1Average API [$(AP1 + AP2 + AP3)/3$] : 6.23

Assessment [$2.5 * \text{AverageAPI}$] : 15.58

4.4 Academic Performance in Second Year

Academic Performance	2021-22 (CAYm2)	2020-21 (CAYm3)	2019-20 (CAYm4)
Mean of CGPA or mean percentage of all successful students(X)	7.63	7.69	8.99
Total number of successful students(Y)	27	25	34.00
Total number of students appeared in the examination(Z)	29	37	42
API [$X*(Y/Z)$]:	7.10	5.20	7.28

Average API [$(AP1 + AP2 + AP3)/3$] : 6.53

Assessment [$2.0 * \text{AverageAPI}$] : 13.06

4.5 Academic Performance in Final Year

Academic Performance	2020-21 (LYG)	2019-20 (LYGm1)	2018-19 (LYG2)
Mean of CGPA or mean percentage of all successful students(X)	8.52	8.10	8.01

Total number of successful students(Y)	23	30	12
Total number of students appeared in the examination(Z)	23	34	14
API [$X*(Y/Z)$]:	8.52	7.15	6.87

Average API [$(AP1 + AP2 + AP3)/3$] : 7.51

Assessment [$2.0 * \text{Average API}$] : 15.02

4.6 Placement and Higher Studies

Item	2020-21 (Last year graduate, LYG)	2019-20 (Last year graduate minus 1 Batch, LYGm1)	2018-19 (Last year graduate minus 2 Batch, LYG2)
Total No of Final Year Students(N)	23	34	14
No of students placed in the companies or government sector (X)	19	27	11
No of students admitted to higher studies (Y)	3	3	2
No. of students turned entrepreneur in the respective field of engineering/technology (Z)	1	0	0
Placement Index [$((1.25 * X) + Y + Z) / N$]:	1.21	1.08	1.12

Average Placement [$(P1 + P2 + P3)/3$] : 1.14

Assessment [$40 * \text{Average Placement}$] : 45.6

Provide the placement data in the below mentioned format with the name of the program and the assessment year (separately for CAYm1, CAYm2 and CAYm3):

Program Name : Electrical Engg.

Assessment Year : 2022-23 (CAYm1)

S.No	Student Name	Enrollment No	Employee Name	Appointment No
1	ADITYA KUMAR	1992020001	GEC, Gopalganj	23103149901
2	ANJALI KUMARI	1992020003	APOLLO TYRES PVT. LTD. GUDUR, NELLORE , AP	AP/P-GPC/DET-2023/E E-001
3	ARPIT KUMAR	1992020005	APOLLO TYRES PVT. LTD. GUDUR, NELLORE , AP	AP/P-GPC/DET-2023/E E-002
4	ASHISH KUMAR	1992020006	APOLLO TYRES PVT. LTD. GUDUR, NELLORE , AP	AP/P-GPC/DET-2023/E E-003
5	DHEERAJ KR SONU	1992020010	Wind Care india pvt ltd	WCIPL/HR/GPC/CAM PUS OFFER-2023
6	HARSH DEEP KHATRI	1992020011	GEC, Aurangabad	23104147909
7	PIYUSH KUMAR	1992020016	Wind Care india pvt ltd	WCIPL/HR/GPC/CAM PUS OFFER-2023
8	PIYUSH KR VERMA	1992020017	Wind Care india pvt ltd	WCIPL/HR/GPC/CAM PUS OFFER-2023
9	PREM KUMAR	1992020018	Wind Care india pvt ltd	WCIPL/HR/GPC/CAM PUS OFFER-2023
10	PRINCE KUMAR	1992020019	PRINCE Enterprises	10JULPK7386B1ZI
11	RIYA SINGH	1992020022	APOLLO TYRES PVT. LTD. GUDUR, NELLORE , AP	AP/P-GPC/DET-2023/E E-004
12	SAKSHEE PRIYA	1992020025	APOLLO TYRES PVT. LTD. GUDUR, NELLORE , AP	AP/P-GPC/DET-2023/E E-005
13	SHIKHA KUMARI	1992020029	GEC, Kaimur	23103148903
14	SUMAN SOURAB	1992020031	APOLLO TYRES PVT. LTD. GUDUR, NELLORE , AP	AP/P-GPC/DET-2023/E E-006
15	SUPRIYA KUMARI	1992020033	APOLLO TYRES PVT. LTD. GUDUR, NELLORE , AP	AP/P-GPC/DET-2023/E E-007
16	VIKASH KUMAR	1992020036	K.P Reliable Technique India Pvt ltd	Gems/EE/2023/001
17	SHRIRAM KUMAR	1992020040	Wind Care india pvt ltd	WCIPL/HR/GPC/CAM PUS OFFER-2023
18	MANISH KR SINGH	1992020041	Anand Group	
19	TANNU KUMARI	1992020045	APOLLO TYRES PVT. LTD. GUDUR, NELLORE , AP	AP/P-GPC/DET-2023/E E-008
20	KRISHNA KR	1992020047	Anand Group	40006471

	GUPTA			
21	NITESH KUMAR RAM	1992020048	APOLLO TYRES PVT. LTD. GUDUR, NELLORE , AP	AP/P-GPC/DET-2023/E E-009
22	SHESHPAL KUMAR	1992020604	APOLLO TYRES PVT. LTD. GUDUR, NELLORE , AP	AP/P-GPC/DET-2023/E E-010
23	ABHISHEK KUMAR	1992020605	APOLLO TYRES PVT. LTD. GUDUR, NELLORE , AP	AP/P-GPC/DET-2023/E E-011

Assessment Year : 2021-22 (CAYm2)

S.No	Student Name	Enrollment No	Employee Name	Appointment No
1	SALONI KUMARI	1992019002	KP Reliable Technique India Pvt Lmt.	Gems/EE/2022/001
2	BEAUTY KUMARI	1992019003	KP Reliable Technique India Pvt Lmt.	Gems/EE/2022/002
3	SHRISTI KUMARI	1992019004	KP Reliable Technique India Pvt Lmt.	Gems/EE/2022/003
4	MACHINPHI KEISHING	1992019005	KP Reliable Technique India Pvt Lmt.	Gems/EE/2022/004
5	SOURAV KUMAR SINHA	1992019006	Mahindra CIE Automotive Ltd.	A0223128043
6	RAJU KUMAR DEV	1992019007	Windcare india pvt ltd	WCIPL/HR/GPC/CAM PUS OFFER-2022
7	SHRAWAN KUMAR	1992019008	Windcare india pvt ltd	WCIPL/HR/GPC/CAM PUS OFFER-2022
8	ROUSHAN DEEP	1992019010	Windcare india pvt ltd	WCIPL/HR/GPC/CAM PUS OFFER-2022
9	KAPIL DEV KUMAR	1992019012	Windcare india pvt ltd	WCIPL/HR/GPC/CAM PUS OFFER-2022
10	AMAN KUMAR	1992019013	MS,Grifeo	GCEP/22/C/V/T/A-IN/R TL/280722/1
11	HARSH KUMAR	1992019014	MS,Grifeo	GCEP/22/C/V/T/A-IN/R TL/280722/1
12	BEAUTY BALA	1992019019	GABRIEL India Limited	90005587
13	KHUSHI KUMARI	1992019020	KP Reliable Technique India Pvt Lmt.	Gems/EE/2022/006
14	ANJALI KUMARI	1992019021	MS,Grifeo	GCEP/22/C/V/T/A-IN/R TL/280722/1
15	SNEHA BHARTI	1992019022	MS,Grifeo	GCEP/22/C/V/T/A-IN/R TL/280722/1
16	RITIK SAGAR	1992019025	Windcare india pvt ltd	WCIPL/HR/GPC/CAM PUS OFFER-2022
17	MANIKANT KUMAR	1992019026	Windcare india pvt ltd	WCIPL/HR/GPC/CAM PUS OFFER-2022

18	AMRENDRA KUMAR	1992019027	Windcare india pvt ltd	WCIPL/HR/GPC/CAMPUS OFFER-2022
19	ROHIT KUMAR	1992019030	Windcare india pvt ltd	WCIPL/HR/GPC/CAMPUS OFFER-2022
20	PINTU KUMAR	1992019032	Windcare india pvt ltd	WCIPL/HR/GPC/CAMPUS OFFER-2022
21	RAVI RANJAN KUMAR	1992019033	Windcare india pvt ltd	WCIPL/HR/GPC/CAMPUS OFFER-2022
22	RAJU KUMAR	1992019034	Windcare india pvt ltd	WCIPL/HR/GPC/CAMPUS OFFER-2022
23	VIKASH KUMAR	1992019039	Windcare india pvt ltd	WCIPL/HR/GPC/CAMPUS OFFER-2022
24	ABHISHEK KUMAR	1992019040	Windcare india pvt ltd	WCIPL/HR/GPC/CAMPUS OFFER-2022
25	BADAL KUMAR	1992019043	Windcare india pvt ltd	WCIPL/HR/GPC/CAMPUS OFFER-2022
26	ABHISHEK RAJ	1992019044	KP Reliable Technique India Pvt Lmt.	Gems/EE/2022/005
27	AAKRITEE SINHA	1992018001	Anand Group	90005588

Assessment Year : 2020-21 (CAYm3)

S.No	Student Name	Enrollment No	Employee Name	Appointment No
1	SHWETA KUMARI	1992018002	GEC Kaimur	21103148904
2	SAPNA KUMARI	1992018003	GEC Arwal	22103029LE
3	NAVEEN KUMAR	1992018005	Windcare india pvt ltd	WCIPL/HRMS/ZCAMPUS-N GOFF-01/21-22
4	ANKIT KUMAR	1992018006	Windcare india pvt ltd	WCIPL/HRMS/ZCAMPUS-N GOFF-01/21-22
5	ASHUTOSH	1992018007	Windcare india pvt ltd	WCIPL/HRMS/ZCAMPUS-N GOFF-01/21-22
6	VIVEK KUMAR	1992018008	Windcare india pvt ltd	WCIPL/HRMS/ZCAMPUS-N GOFF-01/21-22
7	AYUSH SOURABH	1992018009	Windcare india pvt ltd	WCIPL/HRMS/ZCAMPUS-N GOFF-01/21-22
8	PRABHAT KUMAR	1992018012	Windcare india pvt ltd	WCIPL/HRMS/ZCAMPUS-N GOFF-01/21-22
9	NAGMANI KUMAR	1992018013	Windcare india pvt ltd	WCIPL/HRMS/ZCAMPUS-N GOFF-01/21-22
10	NAGESHWAR KUMAR	1992018015	Windcare india pvt ltd	WCIPL/HRMS/ZCAMPUS-N GOFF-01/21-22

11	VIDYA KUMARI	1992018016	GEMS Polytechnic College	GPC/HR/2022/002
12	DEVASHISH KUMAR	1992018017	Windcare india pvt ltd	WCIPL/HRMS/ZCAMPUS -NGOFF-01/21-22
13	KAUSHAL KUMAR	1992018018	Windcare india pvt ltd	WCIPL/HRMS/ZCAMPUS -NGOFF-01/21-22

4.7 Professional Activities

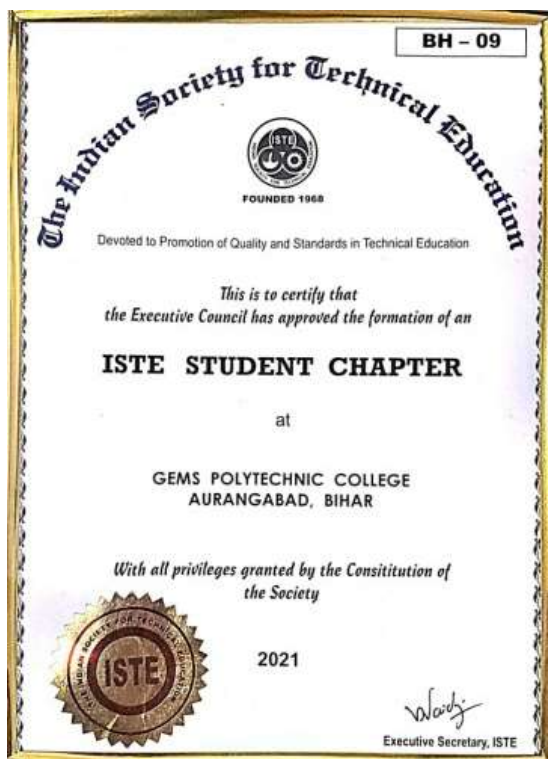
4.7.1 Professional societies/ student chapters and organizing technical events

A. Availability of Professional Societies/Chapters & Relevant activities

In the Department of Electrical Engineering at GEMS Polytechnic College, we actively encourage students to participate in various professional societies and department associations. These platforms provide students with opportunities for skill development, networking, and enhancing their knowledge. Here are the key organizations and their relevant activities:

Professional Societies / Chapters:

Sl.No	Name of the Professional Society	Institutional Membership	Student Chapter Membership	<u>Number of Students Registered</u>
1.	Indian Society for Technical Education (ISTE)	IM-2867	BH-09	21



Relevant Activities:

Technical Quiz:

ISTE conducts regular technical quizzes, allowing students to test their knowledge and problem-solving skills.

Project Expo:

Students can showcase their innovative projects in Project Expos, fostering creativity and teamwork.



Guest Lectures:

We invite experts and industry professionals to deliver insightful guest lectures, exposing students to real-world applications of their studies.



Webinars:

ISTE organizes webinars on various engineering topics, ensuring that students are up-to-date with the latest industry trends and technologies.

**Department Associations:**

Name of the Association: Electrogenic

Relevant Activities:**Orientation Program:**

At the beginning of each academic year, Electrogenic conducts an orientation program for first-year students. This program helps newcomers become acquainted with the department, faculty, and their peers, ensuring a smooth transition into college life.



Farewell Program:

Electrogenic organizes a heartfelt farewell program for final-year students, bidding them adieu as they prepare to embark on their professional journey. It's a memorable event that acknowledges their contribution to the department.

**Guest Lectures:**

- We regularly host guest lectures, where industry experts and alumni share their experiences and insights, bridging the gap between academia and the practical world.
- Participating in these societies and associations not only enriches students' academic experiences but also equips them with valuable skills and networks that are essential for their future careers. These activities contribute to the holistic development of students in the Department of Electrical Engineering at GEMS Polytechnic College.



Office Bearers of the Association CAY (2023-2024)			
Sl.No	Name of the Student	Designation	Class
1.	Ms. Sneha Kumari	Student Chairman	3rd yr/EE
2.	Mr. HarshKumar	Student Vice Chairman	3rd yr/EE
3.	Mr. Aman Kumar	Student Secretary	3rd yr/EE
4.	Mr. Sumit Kumar	Joint Secretary	2nd yr/EE
5.	Mr. Raj Kumar	Treasurer	3rd yr/EE
6.	Ms. Durga Kumari	Executive Member	2nd yr/EE
7.	Mr. Rajnish Kumar	Executive Member	2nd yr/EE
8.	Mr. Sourav Kumar	Executive Member	2nd yr/EE

Office Bearers of the Association CAYm1 (2022-2023)			
Sl.No	Name of the Student	Designation	Class
1.	Mr. Aditya Kumar	Student Chairman	3rd yr/EE
2.	Mr. Prince Kumar	Student Vice Chairman	3rd yr/EE
3.	Ms. Anjali Kumari	Student Secretary	3rd yr/EE
4.	Mr. Shikha Kumari	Joint Secretary	3rd yr/EE
5.	Mr. Shriram Kumar	Treasurer	3rd yr/EE
6.	Mr. Harsh Kumar	Executive Member	2nd yr/EE
7.	Mr. Sneha Kumari	Executive Member	2nd yr/EE
8.	Mr. Raj Kumar	Executive Member	2nd yr/EE

Office Bearers of the Association CAYm2 (2021-2022)			
Sl.No	Name of the Student	Designation	Class
1.	Ms. Saloni Kumari	Student Chairman	3rd yr/EE
2.	Mr. Harsh Kumar	Student Vice Chairman	3rd yr/EE

3.	Mr. Amendra Kumar	Student Secretary	3rd yr/EE
4.	Mr. Aditya Kumar	Joint Secretary	2nd yr/Mech
5.	Mr. Ritik Sagar	Treasurer	3rd yr/EE
6.	Mr. Prince Kumar	Executive Member	2nd yr/EE
7.	Ms. Anjali Kumari	Executive Member	2nd yr/EE
8.	Ms. Shikha Kumari	Executive Member	2nd yr/EE

B. Number, quality of engineering events

Professional Excellence in Engineering:

At the Department of Electrical Engineering, GEMS Polytechnic College, we take pride in our numerous high-quality engineering events. These events, meticulously organized and executed, serve as dynamic platforms for knowledge exchange, networking, and skill development. Our commitment to professional activities enriches the academic journey, ensuring our students are well-prepared for the challenges of the engineering world.

List of Event / Activities under Professional Society:

S.No	Date	Name of the Event/Activity	Name of the resource person with Designation
1	03-09-2019	Technical quiz	ISTE
2	18-11-2019	Guest Lecture	Mr. Baldwin Santosh, Senior Manager, Renault Nissan R&D
3	26-7-2020	Guest Lecture	Mr. Benin Pratap, Karunya University Mr. Dinesh, Stairway Engineering
4	05-09-2020	Guest Lecture	Prof Rene, Switzerland
5	24-2-2021	International Symposium	Dr.S.Paul Sathiyam,

			Dr.Jino Ramson, Dr.S. Berlin Jeyaprabhu
6	19-7-2021	Guest Lecture	Dr. Davidson & Dr. Christo Anto, VIT, Chennai
7	11-08-2022	Guest Lecture	Mr. Abner Gulman, PGD rail & metro technology
8	30-01-2023	Guest Lecture	Mr. Boopathi Raja, General Manager NTPC Nabinagar
9	12-05-2023	Light up	Mrs. Catherine, Lecturer /EE GEMS Polytechnic college
10	27-06-2023	Metallic Art	Mrs. Catherine, Lecturer /EE GEMS Polytechnic college
11	27-06-2023	Technical Quiz	Mrs. Chinthiya, Lecturer / Civil GEMS Polytechnic college
12	28-06-2023	Paper presentation	Mr. Anil Kolli, HOD/ ME Mrs. Pameela HOD/ EEE GEMS Polytechnic college
13	03-11-2023	Bihar Startup Awareness Program	Bihar Startup Association, Aurangabad
14	7-12-23	Problem Identification & Analysis (IIC)	Mr. Ragunath ,Lecturer EEE, President IIC, GPC
15	18-12-23	Energy conservation Program (IIC)	Mr. Ragunath ,Lecturer EEE, President IIC, GPC
16	12-03-24	11th Bihar Startup Summit	Bihar Startup Association, Patna

List of Event / Activities under Department Association:

S.No	Date	Name of the Event/Activity	Name of the resource person with Designation
1	18-11-2019	Guest Lecture	Mr. Bernard, Visible Engineering, Malaysia
2	26-7-2020	Guest Lecture(Embedded system & IOT	Mr. Benin Pratap, Karunya University Mr. Dinesh, Stairway Engineering
3	13-09-2021	Farewell	2018-2021 Batch
4	01-10-2021	Guest Lecture	Mr. Alugula Manoj Babu, Design Engineer, A Smart Home Solution
5	28-05-2022	Farewell	2021-2022 Batch
6	03-12-2022	Orientation Program	Mr. Jabas Edwin raj (HoD/EE)
7	30-01-2023	Guest Lecture	Mr. Boopathi Raja, General Manager NTPC Nabinagar
8	09-05-2023	Orientation Program	Mr. Jabas Edwin raj (HoD/EE)
9	17-08-2023	Webinar	Dr. Rampriya, HoD EEE, DMI College of Engg. & Tech, Chennai
10	11-09-2023	Farewell	2020 - 2023 Batch
11	01-03-2024	Guest Lecture	Mr. Janes Meister, TPM, Airbus, Germany

4.7.2 Publication of technical magazines, newsletters, etc.**A. Quality & Relevance of the contents and Print Material**

In our relentless pursuit of knowledge dissemination and fostering a culture of learning and innovation, the Department of Electrical Engineering at GEMS Polytechnic College proudly presents "Electrogenic" – our semi-annual technical newsletter.

Newsletter Details:

Name: Electrogenic

Publication Period: Half-Yearly

Academic year	News Letter	Publication Details
2022-2023 <i>(Even Semester)</i>	Electrogenic <i>A Half yearly Newsletter</i>	Volume: 5, Issue :1 Edition: Jan- June
2022-2023 <i>(Odd Semester)</i>	Electrogenic <i>A Half yearly Newsletter</i>	Volume: 4, Issue: 2 Edition: July- Dec
2021-2022 <i>(Even Semester)</i>	Electrogenic <i>A Half yearly Newsletter</i>	Volume:3, Issue :1 Edition: Jan- June
2021-2022 <i>(Odd Semester)</i>	Electrogenic <i>A Half yearly Newsletter</i>	Volume: 2, Issue: 2 Edition: July- Dec
2020-2021 <i>(Even Semester)</i>	Electrogenic <i>A Half yearly Newsletter</i>	Volume:1, Issue :1 Edition: Jan- June

Quality and Relevance of Contents:

Our newsletter, Electrogenic, stands as a testament to our commitment to provide valuable and relevant content to our students and faculty. Here's what sets Electrogenic apart:

Eco-Friendly Approach:

- In an effort to minimize our ecological footprint, we have adopted an eco-friendly approach to the printing process.
- We limit the number of physical copies, focusing on sustainability, and sparing resources.
- Printed copies are meticulously preserved within the department for future reference.

Digital Distribution:

- To ensure that our content reaches the widest possible audience, we have adopted a digital distribution model.
- Each issue of Electrogenic is converted into PDF format.
- These PDF copies are then distributed to both students and faculty through their official email accounts and official WhatsApp groups.

Content Highlights:

The contents of Electrogenic are carefully curated to cater to the diverse interests and informational needs of our readers.

Our newsletter typically features:

Technical Articles:

In-depth articles authored by both students and faculty, exploring various facets of mechanical engineering, current industry trends, and research developments.

Student Spotlights:

Highlighting exceptional student achievements, projects, and experiences within the department.

Faculty Contributions:

Sharing the knowledge and expertise of our esteemed faculty members, covering topics of academic and industrial relevance.

Alumni Stories:

Narratives from our successful alumni who share their journeys and provide insights for the aspiring engineers.

Upcoming Events:

Announcements of departmental seminars, workshops, and other academic events to keep our community informed.

Student and Faculty Achievements:

Recognizing and celebrating the accomplishments of our talented individuals.

Electrogenic is not just a newsletter; it's a platform that showcases the brilliance and innovative spirit within the Department of Electrical Engineering at GEMS Polytechnic College. Through our eco-conscious approach, we aim to conserve resources and ensure that knowledge is readily accessible to all, furthering our commitment to learning and sustainability.

ELECTRICAL ENGINEERING DEPARTMENT NEWSLETTER

ELECTROGENIC

JANUARY, 2023 | ISSUE 1



MESSAGE FROM THE HOD'S DESK

Dear Students,

I am extremely happy to speak to you through our department Newsletter "Electrogenic". Facilitating you all to become competent, disciplined and globally accepted electrical engineers is the ultimate goal that our department works for.

Our department is proactive in organizing Workshops & Seminars in different emerging engineering fields to provide you with golden learning opportunities.

I am sure that you will make use of these opportunities well and fly out as graduates who will be able to communicate effectively, adopt learning and interpersonal skills with commitment to ethical and social responsibilities.

Electrogenic means producing electrical activity in living tissue.



Graduation Ceremony

EE

On 9th December, 2022, GPC Graduation ceremony was conducted. Students of Batch 2017, 2018 and 2019 from the Electrical Engineering department marched proudly and received their degree certificates. It was a moment of great excitement for our department to see our young graduates in graduation gown and hat holding diploma degrees.



Mr. Jabas Edwin
EE HOD

B. Participation of Students from the program

Our department's technical newsletter is a collective effort that thrives on the contributions of both faculty and students. This collaborative initiative not only disseminates knowledge but also nurtures a sense of community and engagement within the Department of Electrical Engineering. The editorial board, consisting of five members, plays a pivotal role in curating and creating these informative publications.

Editorial Board Composition:

Editorial Role	Responsible Persons	Responsibilities
Chief Editors	1. Mrs. Catharine, Lecturer / EE. 2.Mr.Anugrah Ashish, Lecturer / EE	<ul style="list-style-type: none"> ● The Chief Editor, often a senior faculty member, oversees the entire publication process. ● They provide guidance, ensure the quality of content, and maintain the overall consistency of the newsletter.
Faculty Advisors:	Class Advisors of 1st, 2nd & 3rd year of study	<ul style="list-style-type: none"> ● A faculty advisor works closely with the editorial team and serves as a mentor to student contributors. ● They offer valuable insights, helping students refine their articles and contributions.
Student Editors:	1 student from 1st, 2nd & 3rd year of study	<ul style="list-style-type: none"> ● The student editor, typically an experienced student from the department, collaborates with faculty and students to coordinate the newsletters content. ● They ensure that articles are on-topic and align with the publication's objectives.
Student Writer / Contributor:	Students from 1st, 2nd & 3rd year of study	<ul style="list-style-type: none"> ● Students actively engage in creating content for the newsletter. ● They craft articles, reports, and pieces that reflect their insights, experiences, and interests in mechanical engineering. ● These contributions may include research findings, project updates, or reflections on department activities.

Design and Layout Specialist:	Mrs. Catharine, Lecturer / EE Mr. Anugrah Ashish Lecturer/EE	<ul style="list-style-type: none"> • A design and layout specialist, often a student with graphic design skills, is responsible for the visual presentation of the newsletter. • They ensure that the publication is visually appealing, easy to read, and professional in its layout.
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Participation of Students in the Publication of Technical Newsletters:

Our department strongly encourages students to actively participate in the publication of technical newsletters. Here's how students can get involved:

Article Contributions:

Students can contribute articles on topics related to mechanical engineering, including their research findings, project updates, or personal experiences. These contributions are invaluable for sharing knowledge and fostering a sense of camaraderie.

Editorial Team Roles:

Students have the opportunity to join the editorial team, taking on roles such as student editor, writer, or design specialist. These roles not only enhance their writing and design skills but also provide a chance to influence the content and aesthetics of the newsletter.

Peer Review:

Students can engage in the peer review process, offering constructive feedback on articles and content submitted by their peers. This involvement ensures the quality and accuracy of the publication.

Department Events Coverage:

Students can report on departmental events, seminars, workshops, and activities. These reports help capture the essence of department life and highlight the achievements and endeavors of their fellow students.

Highlighting Excellence:

Acknowledging top performers in End Semester examinations, college toppers, champions in inter-college competitions, and the finest final year projects.

The active participation of students not only enriches the content of our technical newsletters but also fosters a sense of ownership and pride in their departments' publications. It's a collaborative effort that strengthens the academic and creative bonds within the Department of Electrical Engineering at GEMS Polytechnic College.

4.7.3 Participation in inter-institute / state/national events by students of the program of study

Academic Year: 2023-2024						
S.no.	Name of the student	SBTE Register No.	Event Description	Event Level (Inter- institute / State/National)	Name of the Participating Institute / Organisation	Participated / Prize Won
1	Nidhi Kumari	1992021036	District Level Sports meet 2023 (Kabaddi Girls)	Inter Institute	Sityog Institute of Technology in Aurangabad, Bihar	Winner
2	Anshu Kumari	1992022005	District Level Sports meet 2023(Kabaddi Girls)	Inter Institute	Sityog Institute of Technology in Aurangabad, Bihar	Winner
3	Nitesh Kumar	1992021037	District Level Sports meet 2023(kabaddi Boys)	Inter Institute	Sityog Institute of Technology in Aurangabad, Bihar	Runner-Up
4	Anurag Kumar	1992021028	District Level Sports meet 2023(Cricket)	Inter Institute	Sityog Institute of Technology in	Winner

					Aurangabad, Bihar	
5	Anurag Kumar	1992021028	District Level Sports meet 2023(Volle yball)	Inter Institute	Sityog Institute of Technology in Aurangabad, Bihar	Participated
6	Akash Kumar	1992021025	District Level Sports meet 2023(Crick et)	Inter Institute	Sityog Institute of Technology in Aurangabad, Bihar	Winner
7	Himanshu Kumar	1992021008	District Level Sports meet 2023(Crick et)	Inter Institute	Sityog Institute of Technology in Aurangabad, Bihar	Winner
8	Sandeep Kumar	1992020027	District Level Sports meet 2023(Crick et)	Inter Institute	Sityog Institute of Technology in Aurangabad, Bihar	Winner
9	Balkaran Kumar	1992022006	District Level Sports meet 2023(Crick et)	Inter Institute	Sityog Institute of Technology in Aurangabad, Bihar	Winner
10	Sikandra Kumar	1992022036	District Level Sports	Inter Institute	Sityog Institute of	Winner

			meet 2023(Crick et)		Technology in Aurangabad, Bihar	
11	Sumit Kumar	1992022040	11th Bihar Startup summit, Patna	State	Bihar Startup Association	Participated
12	Durga Kumari	1992022010	11th Bihar Startup summit, Patna	State	Bihar Startup Association	Participated
13	Rajnish Kumar	1992022030	11th Bihar Startup summit, Patna	State	Bihar Startup Association	Participated
14	Sneha Kumari	1992021020	11th Bihar Startup summit, Patna	State	Bihar Startup Association	Participated
15	Raj Kumar	1992021012	11th Bihar Startup summit, Patna	State	Bihar Startup Association	Participated
16	Suryamani Kumar	1992022042	11th Bihar Startup summit, Patna	State	Bihar Startup Association	Participated

Academic Year: 2022-2023						
S.no.	Name of the student	SBTE Register No.	Event Description	Event Level (Inter- institute / State/National)	Name of the Participating Institute / Organisation	Participated / Prize Won
1.	Aditya Kumar	1992020001	National Level Science Exhibition	National	Sityog Institute of Technology in Aurangabad, Bihar	Participated

2.	Prince Kumar	1992020019	National Level Science Exhibition	National	Sityog Institute of Technology in Aurangabad, Bihar	Participated
3.	Suryamani Kumar	1992022042	National Level Science Exhibition	National	Sityog Institute of Technology in Aurangabad, Bihar	Prize Won

Academic Year: 2021-2022						
S.no.	Name of the student	SBTE Register No.	Event Description	Event Level (Inter- institute / State/National)	Name of the Participating Institute / Organisation	Participated / Prize Won
1	Saloni Kumari	1992019002	BCST	National	Gems Polytechnic College	Participated
2	Beauty Kumari	1992019003	BCST	National	Gems Polytechnic College	Participated
3.	Shrawan kumar	1992019008	BCST	National	Gems Polytechnic College	Participated
4.	Md Shadab Zafar	1992019018	BCST	National	Gems Polytechnic College	Participated
5.	Saloni Kumari	1992019002	Smart India Hackathon,IIC	National	Gems Polytechnic College	Participated
6.	Ritik Sagar	1992019025	Smart India Hackathon,IIC	National	Gems Polytechnic College	Participated
7.	Roushan Deep	1992019045	Smart India Hackathon,IIC	National	Gems Polytechnic College	Participated
8.	Amrendra Kumar	1992019027	Smart India Hackathon,IIC	National	Gems Polytechnic College	Participated
9.	Vikash kumar	1992019039	Smart India Hackathon,IIC	National	Gems Polytechnic College	Participated



Criterion 5

Faculty Information and Contributions

S. no	Name	Qualification	Area of Specialization	Contribution to the program(% load)			Research Paper Publications	Faculty receiving Ph.D/M.Tech during the Assessment year	Current Designation	Date Joining	Nature of Association	At present working with the Institution (Y/N)	Date of Leaving (In case Currently Associated is "No")
				CAYM (2023-2024)	CAYM 1(2022-2023)	CAYM 2(2021-2022)							
1	Jaslin Christy S	M.A.	English	0	0	33	0		Lecturer	24.06.2019	Regular	N	05.08.2023
2	Rajat Kumar	M.TECH	Highway Engineering	0	0	33	0		Lecturer	05.07.2015	Regular	N	31/03/2023
3	Mrs. Jensika Rani	ME.M. TECH	Structural Engineering	33	0	0	1		Lecturer	21/07/2023	Regular	Y	Y
4	Kanti	B.Tech	Computer Science and Engineering	0	0	33	0		Lecturer	26/11/2020	Regular	N	16-02- 2023
5	Sherin Rebecca Empress A	MA	English	0	50	50	0		Lecturer	23.11.2020	Regular	N	28-10-2023
6	Vivek Kumar	M.Tech	Software Engineering	0	25	0	0		Sr.Lecturer	06/05/2019	Regular	N	04-092023
7	Ms. Ruby kumari	B. Tech	Computer Science and Engineering	40	0	0	0		Lecturer	18/10/2023	Regular	Y	Y
8	Mr. Regland Royal	B.Tech	Computer Science and Engineering	40	0	0	1		Lecturer	17/9/2020	Regular	Y	Y
9	Anugrah Ashish Kumar	BE	Electronics and Communicat	50	50	0	1		Lecturer	01-12-2022	Regular	Y	Y

			ion Engineering										
10	Bhaskar Ranjan	M.Tech	Power Electronics	78	50	50	5		Sr.Lecturer	26.09.2016	Regular	Y	Y
11	Catharine	BE	Electronics and Communicat ion Engineering	0	33	33	2		Lecturer	19.07.2021	Regular	Y	Y
12	Ganesh Babu	ME	Power System Engineering	80	100	0	1		Lecturer	01-10-2022	Regular	Y	Y
13	Priya D	ME	Power System Engineering	0	100	75	0		Lecturer	04.02.2021	Regular	Y	Y
14	R.Jabas Edwin Raj	ME	APPLIED ELECTRON ICS	100	100	100	2		HOD	05-08-2021	Regular	Y	Y
15	Challa Rama Gopal	ME	Control & Instrumentati on Engineering	0	100	100	1		Principal	08/04/2016	Regular	Y	Y
16	Daddanala Sanjeeva Kumar	M.Sc.	Mathematics	38.5	20	33	0		Lecturer	12-11-2020	Regular	Y	Y
17	Simon Antipas V	BE	Electrical and Electronics Engineering	0	50	50	0		Lecturer	03/09/2018	Regular	N	02.09.2023
18	Karnika Vijayabhask ar	BE	Electrical and Electronics Engineering	0	0	50	0		Lecturer	31/07/2019	Regular	N	28/05/2022

19	Vadithe David Naik	B.Tech	Electrical and Electronics Engineering	41.5	50	50	2		Lecturer	10.11.2020	Regular	Y	Y
20	Ketu Kumar Sahitya	B.Tech	Electrical and Electronics Engineering	50	0	0	2		Lecturer	14.06.2021	Regular	Y	Y
21	Pathmapriya A	B.E	Electrical and Electronics Engineering	50	50	0	1		Lecturer	10th Nov 202	Regular	Y	Y
22	Raghunath A	B.E	Electrical and Electronics Engineering	64	50	50	1		S.Lecturer	14.07.2017	Regular	Y	Y
23	Sumit Kumar Singh	M.Tech	VLSI & Micro-Electronics	55	50	50	5		S.Lecturer	05.07.2015	Regular	Y	Y
24	Kukkamalla Velangi Babu	MSc Physics	Physics	43.5	0	0	0		Lecturer	16th Dec 2021	Regular	Y	Y
25	Arun Pandian P	B.E	Mechanical Engineering	0	25	0	1		Sr.Lecturer	22.07.2019	Regular	Y	Y
26	Himanshu Kumar Singh	B.E	Bio-Technology	29	0	0	0		Lecturer	13.02.2017	Regular	Y	Y
27	Jeganraj I	M.E	Avionics	0	25	33	0		Sr.Lecturer	06.07.2015	Regular	N	28-10-2023
28	Maxmark Horo	B.Tech	Mechanical Engineering	10	0	0			Lecturer	01.09.2023	Regular	Y	Y
29	Nitish Chandra	B.Tech	Mechanical & Production Engineering	0	0	20	0		Sr.Lecturer	16.01.2020	Regular	N	05.07.2022

30	Ravi Kumar Saksena	B.Tech	Mechanical Engineering	0	0	30	2		Lecturer	16.07.2018	Regular	Y	Y
31	Sudhir Kumar	B.Tech	Mechanical Engineering	40	0	0	1		Lecturer	04.02.2019	Regular	Y	Y
32	Mr. Kumara swami	ME.M. TECH	Machine design	40	0	0	3		Lecturer	14.11.2023	Regular	Y	Y
33	Yogesh C	M.Sc	Mathematics	0	0	25	0		Lecturer	15/10/2020	Regular	N	27/10/2022
TOTAL				883	928	923							

5.1 Student-Faculty Ratio (SFR) (25)

Year	N	F	SFR=N/F
2023-24(CAY)	160	8.83	18.12
2022-23(CAYm1)	154	9.28	16.59
2021-22(CAYm2)	153	8.98	17.04

Average SFR: 16.81

5.1.1. Provide the information about the regular and contractual faculty as per the format mentioned below:

	Total number of regular faculty in the department	Total number of contractual faculty in the department
2023-24(CAY)	18	0
2022-23(CAYm1)	17	0
2021-22(CAYm2)	19	0

5.2 Faculty Qualification :**5.2.1 Faculty Qualification Index :**

	X	Y	F	$FQ = 2 \times [(10X + 7Y) / F]$
2023-24(CAY)	5	2	6	18
2022-23(CAYm1)	6	4	6	29.33
2021-22(CAYm2)	4	5	6	25

Average Assessment: 24.11

5.2.2 Availability of Faculty/principal of that discipline with PhD. Qualification:

Sl.No	Name of the Faculty	Designation	Status	Institution	Year of Registration
1	Mr.Rama Gopal Challa	Principal	Pursuing	IIT Patna	2022

5.3 Faculty Retention (20)

Description	2022-23 (CAYm1)	2023-24 (CAY)
No of Faculty Retained	10	6
Total No of Faculty	17	18
% of Faculty Retained	59%	33%

Average: 46%

5.4 Faculty as participants in Faculty development/training activities conducted by other organizations :

Name of the faculty	Max 5 Per Faculty		
	2021-22 (CAYm2)	2022-23 (CAYm1)	2023-24 (CAY)
Mr. Anugrah Ashish Kumar	0	5	3
Mr. Bhaskar Ranjan	5	5	5
Mr. R.Jabas Edwin Raj	4	5	5
Mr. Ganeshbabu M	0	5	5
Mr. Vadithe David Naik	5	5	1
Mr. Ketu Kumar Sahitya	0	0	5
Ms. Pathmapriya A	0	5	4
Mr. Raghunath A	4	5	5

Mr. Sumit Kumar Singh	3	5	5
Mr. Challa Ram Gopal	5	5	5
Mr. Daddanala Sanjeeva Kumar	2	2	1
Ms. Catharine	5	5	4
Sum	33	52	48
RF = Number of Faculty required to comply with 25:1 SFR as	6.12	6.16	6.40
Assessment [$6 * (\text{Sum} / 0.5\text{RF})$](Marks limited to 30)	64.70	101.29	90

Average assessment over 3 years (Marks limited to 30): 85.33

5.4. a. Organized/ Conducted FDPs and STTP by this department at the State / National Level :

In our relentless pursuit of academic excellence, the Department of Electrical Engineering at GEMS Polytechnic College has taken a leadership role in organizing and conducting Faculty testament to our commitment to fostering continuous learning and professional growth within the engineering community. Join us on this journey of knowledge enhancement and skill development

S.N O	ACADEMIC YEAR	PROGRAM CONDUCTED DATE		PROGRAM TYPE (WORKSHOP / FDP / STTP)	NAME OF THE PROGRAMM E	PROGRAM LEVEL (STATE / NATIONAL)	RESOURCE PERSONS / INSTITUTIONS/ORGANIZ ATIONS
		FROM	TO				
1	2022-2023	06.11.2023	11.11.2023	FDP	eSIM	NATIONAL LEVEL	Spoken Tutorial, IIT Bombay
2	2021-2022	01.07.2021	03.07.2021	FDP	Orientation on Bloom's Taxonomy and Writing Course Outcomes	STATE LEVEL	Prof. G. K. Suraishkumar, Prof. E. PRASAD, IIT Madras (NPTEL Source Video)
3	2021-2022	01.05.2021	03.05.2021	FDP	SWAYAM NPTEL LOCAL CHAPTER Faculty Oriented Awareness E-Workshop	STATE LEVEL	NPTEL Online Platform.
4.	2020-2021	20/01/2020	21/01/2020	STTP	Effective use of campus	STATE LEVEL	Mr. Sam Rajesh & Mrs. Jane Rajesh

					management software		
5.	2019-20	12/08/2019	13/08/2019	National Level Workshop	Embedded Systems & IOT	STATE LEVEL	Mr. Benin Pratap & Mr. Dinesh Palappan
6.	2019-20	01.08.2019	03.08.2019	FDP	Rise up & build-up	STATE LEVEL	Mr.Anand Kumar, Mr.Mariyosh Joseph, Mr.Christopher,

5.5 Product development, Consultancy, Manufacturing contracts, testing contracts :

In our relentless pursuit of academic excellence, the Department of Electrical Engineering at **GEMS Polytechnic College** has taken a leadership role in consultancy services aimed at providing implemented, will significantly improve your monitoring capabilities, leading to enhanced productivity and reduced operational costs.

S.No	Academic Year	Project Title	Duration	Customer / Funding Agencies Details	Fund Generated
1.	2020-21	Product Monitoring System	1/12/2020 to 15/02/2021	NK Industries	25,579

5.6 Faculty Performance Appraisal and Development System (FPADS) :

A. A well-defined FPADS instituted for all the assessment years :

GEMS Polytechnic College is committed to ensuring the highest education and faculty performance standards. We have established the Annual Faculty Performance Appraisal and Development System (AFPADS) for all assessment years to achieve this. This transparent system assesses the performance of our faculty members and provides them with valuable feedback while considering career progression opportunities.

Operating Authorities:

- The Director
- The Principal
- The Dean of Academics
- Head of the Department (HoD)
- Human Resource Officer

Summary of FPADS Points

Part	Parameters		Max. Points
A	Educational Qualification & Experience (Max 20 Points)		
	A.1	Educational Qualifications	10
	A.2	Experience	10
B	Teaching & Learning Process (Max 150 Points)		
	B.1	Teaching, Learning & Evaluation Process	50
	B.2	Students' feedback	50
	B.3	Result Analysis	50
C	Research & Development (Max 50 Points)		
	C.1	Awards / Honours & Membership in Professional Societies/Bodies	10
	C.2	Online Certification Courses / Attended	10

		FDP, Workshop	
	C.3	Research Paper /Books / Chapter Publications	10
	C.4	NITTTR Trainings Certificate	10
	C.5	Consultancy	10
D	Department Development Activities		60
E	Institute Development Activities		50
F	Contribution to Society		50
G	ACR		20
Total (Max Points 400)			400
Total Appraisal score on 10 Point scale			10

B. Its implementation and effectiveness :

Operating Procedure

Our AFPADS operates as follows:

Eligibility:

- Faculty members who have completed one year of employment at our institution are eligible for the annual performance appraisal program.

Communication:

- At the beginning of each academic year, we circulate a detailed circular outlining the objectives and the process of the Performance Appraisal Program to all employees.

Appraisal Form:

- Employees are required to fill out the Performance Appraisal Form, which assesses them on various parameters, including job proficiency, interpersonal relationships, and communication.

Evaluation:

- The submitted appraisal forms are evaluated, and each field is weighted against a predetermined scorecard to calculate the final score for each employee.

Performance Appraisal Meeting:

- An appraisal meeting is scheduled with each employee.
- This meeting involves a panel consisting of the Management, including the HoD, Dean of Academics, Principal, and Director, who conduct the appraisal.

Discussion Points:

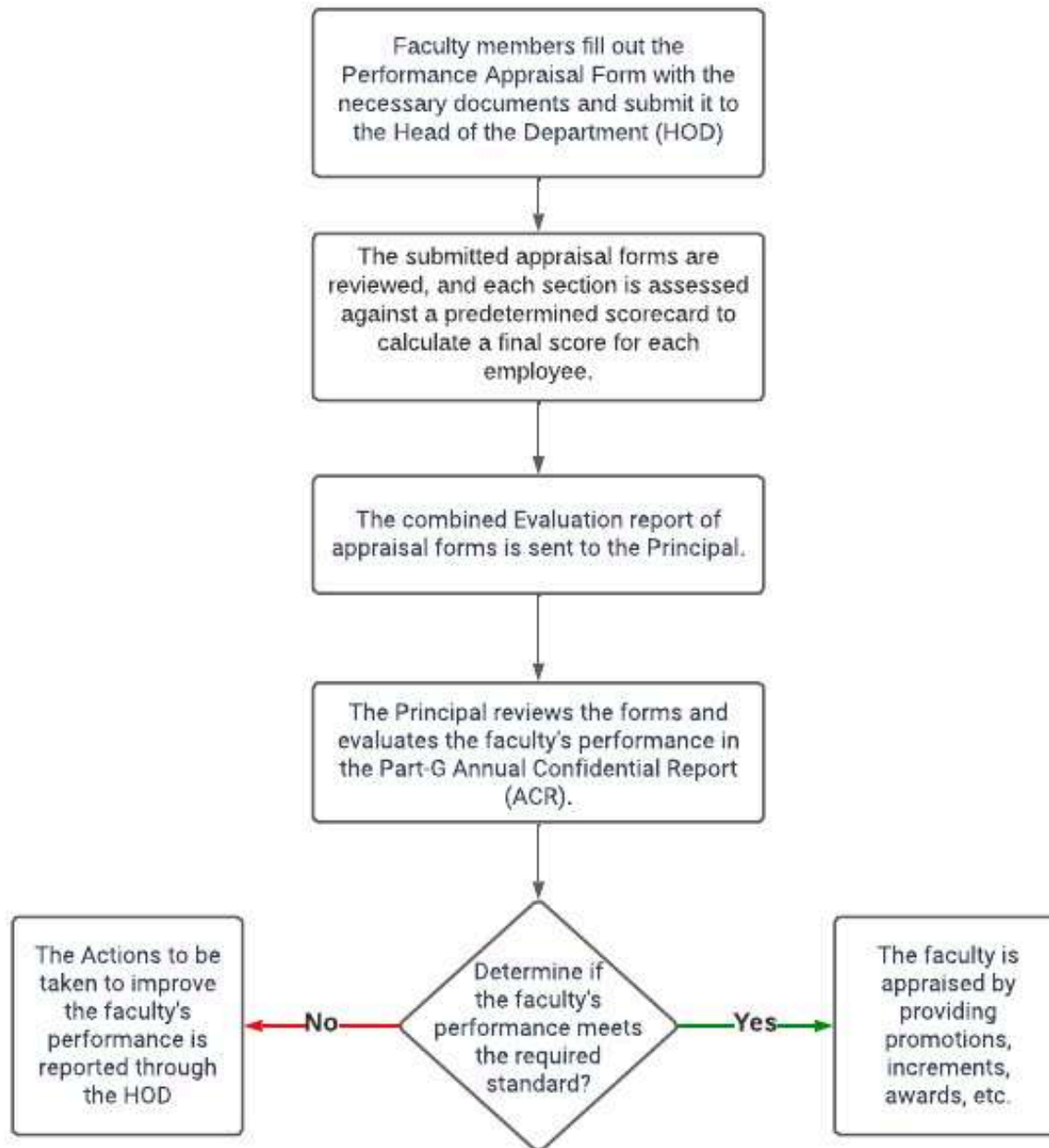
During the Appraisal Meeting, several crucial areas are discussed, including:

- Reviewing and confirming an understanding of the essential job functions, annual goals, and performance standards.
- Recognizing strengths and achievements.
- Identifying areas where education, training, or development opportunities are needed, along with strategies for development.
- Discussions and confirmations about the steps the employee and the institution will take to accomplish self-development goals.

Outcome:

Based on the scores from individual performance assessments, the management decides on monetary increments and promotions.

This system provides a fair and transparent basis for recognizing and rewarding faculty members for their hard work and dedication to our institution.



C. Details of qualification up-gradation of faculty :

Empowering Faculty through Continuous Professional Development:

At GEMS Polytechnic College, we recognize that for our faculty to be effective educators, they must not only be experts in their respective subjects but also proficient in the art of teaching and knowledge dissemination. To address this need for continuous improvement, we have implemented a comprehensive program for the qualification up-gradation of our faculty, in line with the "National Initiative for Technical Teachers Training (NITTTR)" proposed jointly by the Ministry of Human Resource Development (MHRD) and the All India Council for Technical Education (AICTE).

Details of Qualification Up-gradation of Faculty:

National Initiative for Technical Teachers Training (NITTT)

The NITTT initiative focuses on equipping technical teachers with the necessary pedagogical skills to effectively impart knowledge and skills to students. This initiative is vital, especially for faculty members in technical education who play a pivotal role in shaping the future of our students.

Key Features of the NITTT Program:

Eligibility:

All faculty members of AICTE-approved Technical Institutes with less than five years of service are eligible to participate in this initiative. It is particularly beneficial for aspiring teachers in the technical education sector.

Mandatory Stage-I Modules:

For lecturers of Polytechnic colleges who joined after 1st March 2014, there are eight mandatory online modules available on the NITTT platform (www.nitte.ac.in). These modules are designed to enhance the skills and knowledge necessary for effective teaching.

Module 1: Orientation towards Technical Education & Curriculum Aspects (40 hours)

Module 2: Professional Values, Ethics, Ecology & Sustainable Development (40 hours)

Module 3: Communication Skills, Modes, and Knowledge Dissemination (20 hours)

Module 4: Instructional Planning and Delivery (40 hours)

Module 5: Technology-Enabled Learning and Lifelong Self-Learning (40 hours)

Module 6: Effective Modes of Student Assessment and Evaluation (40 hours)

Module 7: Creative Problem Solving, Innovation, and Meaningful R&D (40 hours)

Module 8: Miscellaneous Aspects (Institutional Management & Administrative Procedures) (40 hours)

Certification:

Faculty members must complete the above-mentioned modules, followed by industry and mentor-based training. Certification from NITTT is a crucial aspect of the qualification up-gradation process, and it is instrumental both for probation and for seeking promotions within the institution.

Support from GEMS Polytechnic College

In line with our commitment to the professional development of our faculty, GEMS Polytechnic College provides financial support for the one-time registration of faculty members on the NITTT portal. This support ensures that our educators have resources and opportunities to enhance their pedagogical skills, fostering a culture of continuous improvement in teaching and knowledge dissemination.

Through the National Initiative for Technical Teachers Training (NITTT) and the support of GEMS Polytechnic College, our faculty members are better equipped to provide high-quality technical education and contribute to the holistic development of our students, ensuring that they are well-prepared for the challenges of the modern world.

List of Teaching Faculties undergoing / Completed NITTT Stage-1 Modules:

Sl.No	Name of the Faculty	Stage-1 Modules	Completion Status
1	Mr.Bhaskar Ranjan	Module 1	Completed & Certified
		Module 2	Completed & Certified
		Module 3	Completed & Certified
		Module 4	Completed & Certified
		Module 5	Completed & Certified
		Module 6	Completed & Certified
		Module 7	Completed & Certified
		Module 8	Completed & Certified
2	Mr.Sumit Kumar Singh	Module 1	Completed & Certified

		Module 2	Completed & Certified
		Module 3	Completed & Certified
		Module 4	Completed & Certified
		Module 5	Completed & Certified
		Module 6	Completed & Certified
		Module 7	Completed & Certified
		Module 8	Completed & Certified
3	Mrs.Catherine	Module 1	Completed & Certified
		Module 2	Completed & Certified
		Module 3	Completed & Certified
		Module 4	Completed & Certified
		Module 5	Completed & Certified
4	Mr.Ganesh Babu M	Module 1	Completed
5	Mr, Anugrah Ashish	Module 1	Completed

List of Teaching Faculties Completed Courses Under NPTEL:

- Our department's teaching faculties have completed courses under the National Programme on Technology Enhanced Learning (NPTEL), enhancing their expertise in diverse technical subjects.
- This accomplishment reflects their dedication to staying abreast of the latest advancements, enriching the quality of education they provide.
- The acquired knowledge from NPTEL courses empowers our faculty members to impart cutting-edge insights and skills to students, fostering a dynamic and forward-thinking learning environment.

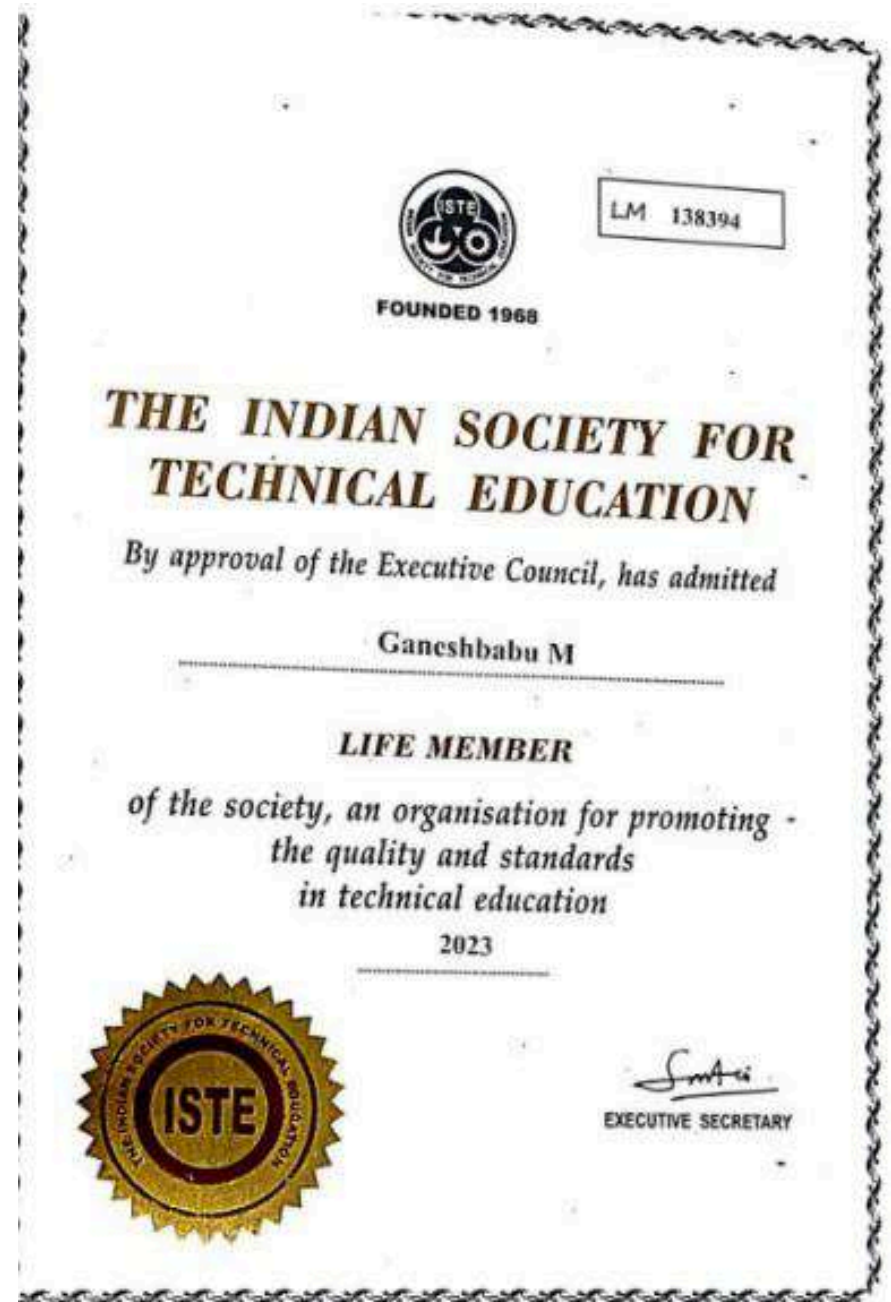
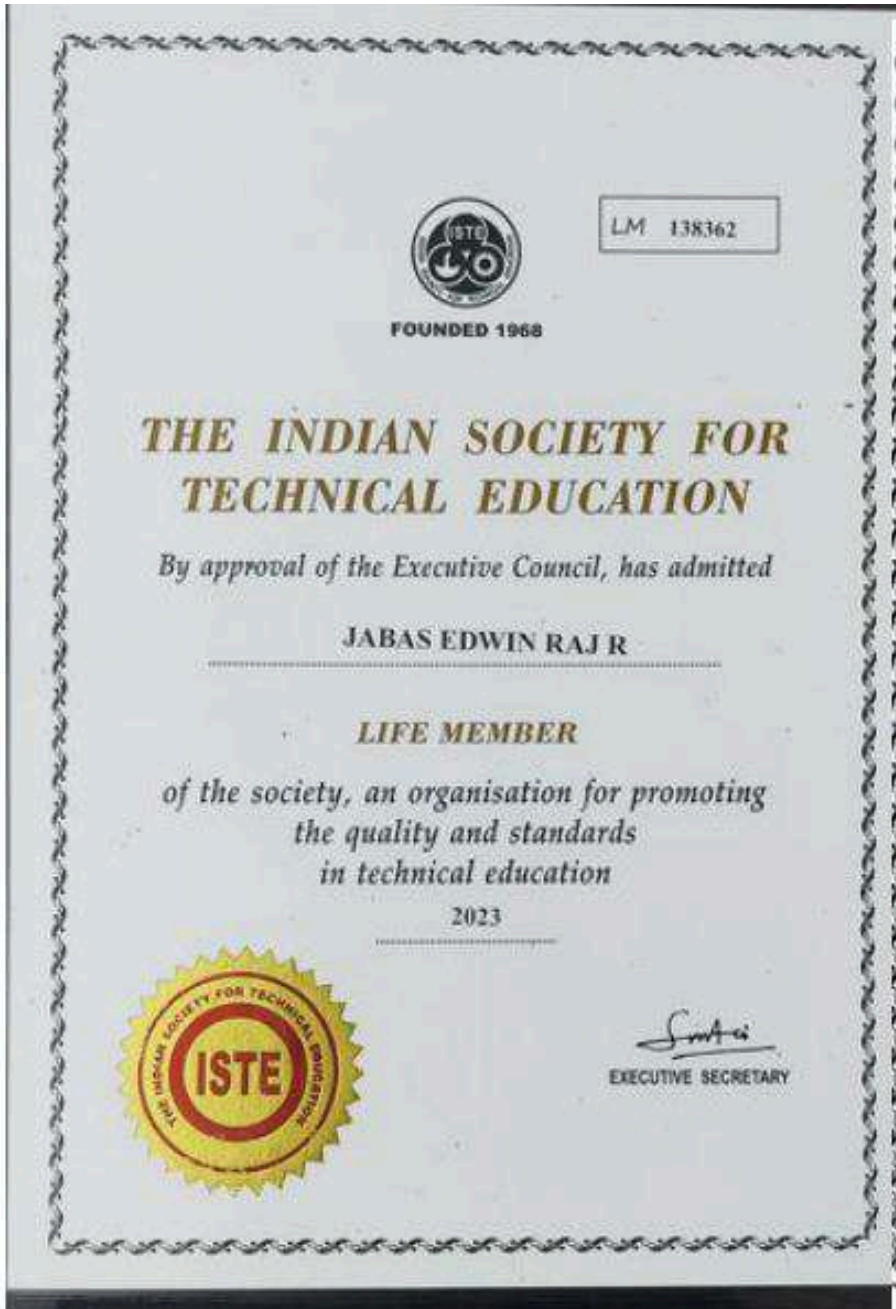
S.NO	Academic year	Faculty Name	Title	Duration
1.	2021-22	Mr.R.Jabas Edwin Raj	Electric Vehicle Part-1	4 weeks
		Mr. Bhaskar Ranjan	Electric Vehicle Part-1	4 weeks
		Mrs.Priya	Control Engineering	4 weeks
		Ms.Vidya	Electric Vehicle Part-1	4 weeks
		Mr.Vijaya Bhaskar	Transmission Lines and Electromagnetic Waves	4 weeks
		Mrs.Catharine	Electric Vehicle Part-1	4 weeks
2.	2019-20	Mr.Vijaya Bhaskar	Effective Engineering Teaching in Practice	4 weeks



Faculty ISTE Life Membership Details:

- As a testament to their commitment to professional development, our department faculties have registered for a lifetime membership with the Indian Society of Technical Education (ISTE)
- This affiliation ensures continuous access to cutting-edge resources, fostering a culture of innovation and excellence in technical education within our academic community.
- Through this lifetime membership, our faculty members are poised to contribute significantly to the advancement of teaching methodologies and technological practices.

S.N O	Name of the Faculty	Organization Name	ISTE Membership Number
1.	Mr. Rama Gopal Challa	ISTE	LM138376
2	Mr. Jabas Edwin Raj R	ISTE	LM138362
3.	Mr. Ganeshbabu M	ISTE	LM138394



Criterion 6

Facilities and Technical Support

6.1 Availability of adequate, well-equipped classrooms to meet the curriculum requirements

Sl.No.	Class Room	Carpet Area	Shared / Exclusive	Seating Capacity	Availability of Smart facilities	Weekly utilization
1	Room No - 1308 & 1st Year Room	66 sqm	Exclusive	60	Black board	Yes, 6 Days/Week
2	Room No - 1309 & 2nd Year Room	66 sqm	Exclusive	60	Projector & Smart Board and Marker Pen,Black board and Sound Speakers	Yes, 6 Days/Week
3	Room No - 1312 & 3rd Year Room	66 sqm	Exclusive	60	Projector & Smart Board and Marker Pen,Black board and Sound Speakers	Yes, 6 Days/ Week
4	Seminar Hall	448.7 sqm	Shared	600	Projector and Sound Systems	Once / Week
5	Drawing Hall	132 sqm	Shared	60	Drawing Tables with Chairs	First Year Students Using
6	Central Library	300 sqm	Shared	250	Books of all Branches	Yes, 1 Hour / Day
7	Department Staff Room 1311	80 sqm	Exclusive	7	Desktop-4,Printer-1,Cabines -7,Department Library	Yes, 6 Days / Week
8	Department Library 1311		Exclusive	5	All Electrical Standard Books	Yes, 6 Days / Week



6.2 Availability of adequate and well-equipped workshops, Laboratories and Technical manpower to meet the curriculum requirements

A. Adequacy

At GEMS Polytechnic College, the Department of Electrical Engineering ensures the availability of well-equipped laboratories and workshops to meet the curriculum requirements. Adequate provisions are in place:

Efficient Equipment: All laboratories are furnished with efficient equipment, enabling students to conduct practical work during scheduled hours and beyond based on their interests. Both SBTE Curriculum and additional ones are conducted, enriching the students practical knowledge.

Organized Storage: Equipment and consumables are stored in designated racks for easy access by faculty, technicians, and students.

Facility and Notice Boards: The laboratories are equipped with sufficient furniture, blackboards, and notice boards for effective teaching and information dissemination. Internet LAN connections are provided as needed.

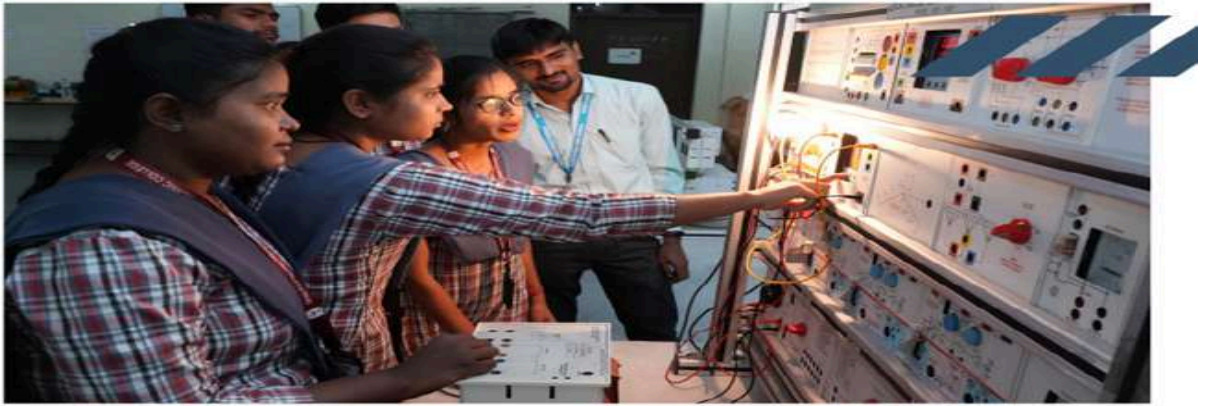
S. No.	YEAR & SEMESTER	Name of the Laboratory	Lab Location	Shared / Exclusive
1	2nd Year - III Sem	Electrical Circuits Lab	1306 (3rd Floor)	Shared
2	2nd Year - III Sem	Electrical and Electronics Measurements Lab	1306 (3rd Floor)	Shared
3	2nd Year - III Sem	Introduction to Electric Power Generations Lab	1101 (1st Floor)	Shared
4	2nd Year - III Sem	Web Technology Lab	1209 (2nd Floor)	Shared
5	2nd Year - III Sem	Electric Motors and Transformers Lab	1010 (Ground Floor)	Shared
6	2nd Year - IV Sem	Power Electronics and Drives Lab	1303 (3rd Floor)	Shared
7	2nd Year - IV Sem	Induction, Synchronous and Special Machines Lab	1010 (Ground Floor)	Shared
8	2nd Year - IV Sem	Industrial Drives Lab	1010(1st Floor)	Shared

9	2nd Year - IV Sem	MATLab	1104 (1st floor)	Shared
10	3rd Year - V Sem	Microcontroller Applications Laboratory	1104 (1st Floor)	Shared
11	3rd Year - V Sem	Energy Conservation and Audit	1010 (Ground Floor)	Shared
12	3rd Year - V Sem	Switchgear and Protection Laboratory (2020508C)	1303 (1st Floor)	Shared
13	3rd Year - V Sem	Electric Traction (2020509C)	1306 (3rd Floor)	Shared
14	3rd Year - VI Sem	Building Electrification Laboratory (2020608A)	1101 (1st Floor)	Shared



ELECTRICAL MACHINES LABORATORY





ELECTRICAL MEASUREMENTS LABORATORY



B. Quality of Labs/workshop:

The emphasis is on the quality and practical application of knowledge in the laboratories and workshops:

Importance of Practical Work: Laboratories take precedence over theoretical classes as they allow students to engage in application-oriented practical work.

Dedicated Instructors: Each laboratory has a designated faculty in-charge to facilitate the development of complete practical knowledge among students.

Student Involvement: Students actively participate in practical work under the guidance of faculty members, and they maintain observation notes, ensuring immediate faculty review.

Safety and Cleanliness: Cleanliness and safety are paramount. Safety measures, including water cans, first aid boxes, and fire extinguishers, are maintained, and students are required to adhere to safety attire and practices.

Information Display: Display boards conveying dos and don'ts, the list of experiments (syllabus), and equipment specifications are provided to enhance student awareness.

C. Technical Manpower support –Eligible and Adequate

The department is supported by eligible and adequate technical manpower, ensuring that students receive guidance and assistance as needed in the laboratories. Faculty members and technical support staff work together to create a conducive and knowledgeable environment for our students.

At GEMS Polytechnic College, we are committed to providing students in the Department of Electrical Engineering with well-equipped, quality laboratories, workshops, and the necessary technical support to meet their curriculum requirements, fostering a dynamic and hands-on learning experience.

S. No.	Name of the Laboratory	Technical Manpower support		
		Name of the Technical Staff	Designation	Qualification
1	Electronics Laboratory	Mr. Prashun Bharati	Lab. Assistant	D.E.E.E
2	Electrical Circuits & Measurements Lab	Ms. Ankit Kumar	Lab. Assistant	D.E.E
3	Electrical Machines Laboratory	Mr. Ajeet Kumar	Lab. Assistant	D.E.E
4	Electrical Workshop Laboratory	Mr. Ajeet Kumar	Lab. Assistant	D.E.E
5	Power Electronics Laboratory	Ms. Ankit Kumar	Lab. Assistant	D.E.E
6	Electrical Simulation & Microprocessor and Microcontroller Laboratory	Mr. Ravi Kumar Choudhary	Lab. Assistant	D.E.E

S. No.	Name of the Laboratory	No. of students per setup (Batch Size)	Name of the Important equipment (costing more than Rs.30,000/-)	Weekly utilization status (all the courses for which the lab is utilized)	Technical Manpower support		
					Name of the technical staff	Designation	Qualification
1	Electronics Circuits Lab	15	RLC Series and Parallel circuits kit	4 Hours / Week	Mr. Prashun Bharti	Lab Technician	D.E.E.E
		15	Function Generators 20 MHz with digital display	4 Hours / Week			
		15	Digital Storage Oscilloscope	4 Hours / Week			
2	Electrical Machines Lab	15	Transformer 1.01 To 1.04	4 Hours / Week	Mr. Ajeet Kumar	Lab Technician	D.E.E
		15	Induction Motor 2.01 To 2.04	4 Hours / Week			
		15	Synchronous Motor 4.01 To 4.02	4 Hours / Week			
		15	MG Trainer with testing panel board	4 Hours / Week			
		15	DC Generator & Shunt generator 5HP Copper winding with panel	4 Hours / Week			
		15	Dc Series generator 5Hp with panel	4 Hours / Week			
		15	DC Compound generator 5Hp with panel	4 Hours / Week			
		15	2Hp DC coupled with DC Shunt generator ,2Rheo	4 Hours / Week			
		15	DC motor trainer system with panel 5Hp copper winding	4 Hours / Week			
		15	DC Shunt motor with panel copper winding	4 Hours / Week			
		15	DC Compound motor with panel copper winding	4 Hours / Week			
15	Induction Motor with panel	4 Hours / Week					
3	Power Electronics Lab	15	Speed Control of three phase induction motor PWM/CSI	4 Hours / Week	Mr. Ankit Kumar	Lab Technician	D.E.E
4	Microprocessor & microcontroller Lab	15	Model XPO kit / 8085 with 20 x 4 LCD display	4 Hours / Week	Mr. Ravi Kumar Choudry	Lab Technician	D.E.E

5	Electric Traction Lab	15	Tractive force speed characteristics of a slip ring induction motor	4 Hours / Week	Mr. Ajeet Kumar	Lab Technician	D.E.E
	Electric Traction Lab	15	Rheostatic braking in a DC shunt motor	4 Hours / Week	Mr. Ajeet Kumar	Lab Technician	D.E.E
	Electric Traction Lab	15	Rheostatic braking in a Induction motor	4 Hours / Week	Mr. Ajeet Kumar	Lab Technician	D.E.E
6	Measurement Lab	15	Measurement of point of fault in given cable	4 Hours / Week	Mr. Ankit Kumar	Lab Technician	D.E.E
		15	Dielectric strength of transformer oil	4 Hours / Week	Mr. Ankit Kumar	Lab Technician	D.E.E

6.3 Additional facilities created for improving the quality of learning experience in laboratories

A. Facilities

In pursuit of enhancing the quality of the learning experience within laboratory settings, our institution has embarked on a comprehensive endeavor to establish state-of-the-art facilities. These new facilities are designed to provide students with an enriched and engaging educational environment.

The following are some of the key features and facilities introduced:

S. No.	Facility Name	Utilization
1	Prototype of Electrical Components Models	a. Enhance hands-on understanding of Electrical Components concepts. b. Encourage creative design and experimentation with physical models
2	Smart Class Room	a. Refers to a technologically enhanced learning environment that integrates digital tools and technologies to enhance the teaching and learning experience.
3	Internet & Wi-fi Facility	a. A high-speed internet connection, as it is essential for research, online collaboration, and accessing online resources.
4	English Language Laboratory	a. An "English Language Laboratory" is a specialized learning space equipped with audio-visual and technology-based tools designed to enhance language learning, specifically focusing on the English language b. In this laboratory, students engage in interactive activities, exercises, and multimedia lessons to develop their skills in listening, speaking, reading, and writing in English.
5	Digital Library	a. Digital library online collection of digital resources that includes documents, images, audio, video, and other types of content, organized and accessible through digital systems
6	Department Library	a. A "Department Library" is a library that is specific to a particular academic department within a university or institution b. It typically contains resources, books, journals, and materials related to the subject matter and disciplines covered by that specific department
7	Manuel and Records Facilities	a. Manual and Records Facilities" refer to spaces or systems within an organization where physical documents, written procedures, and records are stored and managed. b. Where hard-copy records, manuals, and other written materials are organized and kept for reference

8	Virtual Labs	a. Provide a safe environment for conducting experiments and simulations. b. Enable remote access for students to practice and learn at their convenience.
9	NPTEL Video Lectures	a. Offer supplementary learning resources for theoretical concepts. b. Support a blended learning approach by providing expert-led content.
10	Previous Semester Projects Models and Reports	a. Serve as references for future projects and learning. b. Showcase successful project outcomes and encourage knowledge sharing.
11	Spoken Tutorial-IIT Bombay	a. These tutorials are designed to teach various technology-related topics through spoken instructions. b. These tutorials are often used to provide step-by-step guidance on using specific software, programming languages, or tools.
12	Display Charts	a. Visual aids for better comprehension of complex concepts. b. Create an interactive and engaging learning environment in the lab.

B. Effective Utilization

It is not enough to merely introduce new facilities; ensuring their effective utilization is equally crucial.

S.No.	Facility Name	Percentage of Utilization
1	Prototype of Electrical Components Models	100% of utilization in Academics
2	Smart Class Room	25% of utilization in Academics 50% utilization in Training 25% of utilization in Product Development
3	Internet & Wi-fi Facility	100% of utilization in Academics
4	English Language Laboratory	100% of utilization in Academics
5	Digital Library	100% of utilization in Academics
6	Department Library	100% of utilization in Academics
7	Manuel and Records Facilities	100% of utilization in Academics
8	Virtual Labs	100% of utilization in Academics
9	NPTEL Video Lectures	50% of utilization in Academics 50% of utilization in Training

10	Previous Semester Projects Models and Reports	100% of utilization in Academics
11	Spoken Tutorial-IIT Bombay	100% of utilization in Academics
12	Display Charts	100% of utilization in Academics

C. Relevance to POs/PSOs

- The additional laboratory facilities are designed with a clear focus on aligning with the program outcomes and program-specific outcomes.
- Here's how they contribute to attaining these Program Outcomes / Program Specific Outcomes

S. No.	Facility Name	Details	Reason(s) for creating facility	Utilization	Areas in which students are expected to have enhanced learning	Relevance to POs/PSOs
1	Prototype of Electrical Components Models	This place has small models of electrical things like resistors, capacitors, and circuits. These models show how these things are made and how they work.	This place exists so students can learn by doing. They can touch and see these models instead of just reading about them in books.	Students use this place to learn hands-on. They play with the models to understand how they work in real life.	Students are expected to develop improved problem-solving skills, design aptitude, proficiency in using electrical tools, a sense of social responsibility, and a commitment to lifelong learning through hands-on interaction with electrical component models.	PO1, PO2, PO3, PO4

2	Smart Class Room	A smart classroom is a high-tech room with cool stuff like interactive screens and internet access. It's a place where teachers use computers and videos to make learning more fun and interesting.	Smart classrooms are made to make learning more exciting and enjoyable for students. They use technology to help teachers teach better and students learn better.	Teachers use smart classrooms to teach in more creative ways, like showing videos and doing interactive activities. Students use them to learn using computers and interactive screens.	Smart classrooms make learning more interesting, so students pay more attention. With videos and interactive stuff, students can understand things better. Doing interactive activities helps students think and solve problems.	PO1, PO3, PO4, PSO1, PSO3
3	Internet & Wi-fi Facility	It's like having internet everywhere you go, even without cables, so you can use your phone, laptop, or tablet to go online.	It's made so students, teachers, and staff can easily find information, do research, and talk to each other online. It helps make learning and working easier.	People use it to look up information, talk to others, do schoolwork, and attend online classes. It's like a big library and meeting place on the internet.	Students are expected to learn more when it comes to finding information, communicating with others, taking online classes, and using technology effectively.	PO1, PO2, PO4, PSO3

4	English Language Laboratory	It's a special room with computers and stuff to help students learn English better.	The lab helps students get better at speaking, listening, reading, and writing in English.	Students use the lab to do exercises and practice English. Teachers also use it to teach and check students' English skills.	They get better at understanding spoken English. They practice talking in English. They improve at understanding English text. They learn to write better in English.	PO1, PO5, PO7
5	Digital Library	It's like an online library where student can find books, articles, and other stuff to read on the internet.	It's made so people can easily access lots of educational materials from anywhere with an internet connection.	People use it to find and read books, articles, and other things online. They can do it using their computer, phone, or tablet.	Students are expected to learn more because they can easily find information, study at their own pace, collaborate with others, and improve their understanding by reading online.	PO1, PO5, PO7
6	Department Library	The department library has books and resources specific to our field of study.	It's made so students and faculty can easily find and use materials related to our subjects.	We use the department library to borrow books, study, and do research for our classes.	We can learn more about our subjects by reading specialized books. The library helps us with our research projects. We can ask the librarians for help finding information. It's a	PO1, PO4, PSO3

					good place to study with classmates.	
7	Manuel and Records Facilities	The manual and records facilities are where important documents and manuals are stored.	These facilities exist to ensure that necessary documents are organized and easily accessible for everyone's use.	People use these facilities to locate and retrieve specific documents and manuals as needed for their tasks or projects.	Students learn to efficiently find and use documents. They develop skills in organizing and managing records effectively. Understanding the importance of accurate record-keeping is emphasized. Interacting with administrative records provides insight into institutional procedures.	PO1, PO2, PO3, PO4
8	Virtual Labs	Virtual labs are online platforms that simulate real laboratory environments, allowing users to conduct experiments and	They're created to provide students with access to laboratory experiences remotely, enabling them to perform experiments and	Students and researchers utilize virtual labs to perform experiments, conduct simulations, and analyze	Students develop a deeper understanding of scientific concepts through interactive simulations. Virtual labs enhance accessibility to	PO1, PO2, PO3, PO4, PO7

		explore scientific concepts through digital simulations and interactive modules.	learn scientific principles without the need for physical lab equipment.	data, all through online interfaces accessible from their computers or devices.	laboratory experiences for students with limited access to physical facilities.	
9	NPTTEL Video Lectures	NPTTEL (National Programme on Technology Enhanced Learning) video lectures are educational videos covering a wide range of topics in science, engineering, and technology, provided by India's NPTTEL initiative.	These lectures are created to offer high-quality educational content to students and professionals, enhancing their understanding of complex subjects and providing access to expert instruction.	Students and learners utilize NPTTEL video lectures to supplement their classroom learning, review difficult concepts, and prepare for exams. They can access these lectures online from anywhere with an internet connection.	Students can review lectures at their own pace, allowing for personalized learning and reinforcement of key concepts. Access to expert instruction from renowned professors enhances students' understanding and mastery of subject matter	PO1, PO3, PO4, PSO2, PSO3
10	Previous Semester Projects Models and Reports	These are physical models and written reports of projects completed by students in previous semesters,	They're created to serve as examples and inspiration for current students, providing insight into the types of projects they may undertake and the	Current students can study these models and reports to understand project requirements,	By examining previous projects, students can understand project expectations and standards. They can gain inspiration and ideas for their own	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PSO's

		showcasing their work and findings.	quality of work expected.	gain ideas for their own projects, and learn from the successes and challenges faced by previous students.	projects by seeing what has been done before. Learning from the experiences of previous students helps current students avoid common pitfalls and improve project outcomes.	-1,2&3
11	Spoken Tutorial-IIT Bombay	Spoken Tutorials are instructional videos provided by IIT Bombay, covering various topics in science and technology, delivered in spoken English or other languages.	These tutorials are created to offer free and accessible learning resources to students and professionals, aiming to enhance their skills and knowledge in specific areas.	Learners utilize Spoken Tutorials to learn new concepts, acquire practical skills, and reinforce their understanding of technical subjects through step-by-step instructional videos.	Spoken Tutorials provide clear explanations and demonstrations, aiding students in understanding complex concepts effectively. Learners can practice along with the tutorials, reinforcing their skills and gaining hands-on experience in various technical tasks. Access to tutorials in multiple languages caters to diverse learning preferences and	PO1, PO2, PO3, PO5, PO7

					helps reach a wider audience.	
12	Display Charts	Display charts are visual aids consisting of information, data, or graphics presented on posters or boards, used to convey information or illustrate concepts.	These charts are created to visually represent information in a clear and concise manner, making complex topics or data easier to understand for viewers.	Display charts are utilized in classrooms, conferences, presentations, and public spaces to communicate information effectively and engage audiences.	Viewing display charts helps students grasp complex topics more easily through visual representation. Analyzing and interpreting information presented on charts enhances students' critical thinking and data analysis skills.	PO1, PO2, PO3, PO5, PO7

6.4 Laboratories: Maintenance and overall ambiance

A. Maintenance of Laboratory Equipment:

Equipment and Software Provision:

- All laboratories are equipped with hardware and software in accordance with the curriculum and syllabus requirements.

Periodic Service and Maintenance:

- Regular service and maintenance of laboratory equipment are ensured to keep them in optimal working condition.

Uninterruptible Power Supply (UPS):

- An uninterruptible power supply is provided in computer laboratories to prevent data loss and equipment damage during power fluctuations.

Identification and Numbering:

- Personal computers and equipment are numbered for easy maintenance and identification.

Software and System Upgradation:

- Software and system upgrades are carried out as needed to meet curriculum demands and technological advancements.

Antivirus and Security:

- Antivirus software is installed and regularly updated to safeguard computers from malware and security threats.

Entry Registers:

- IN-OUT entry registers are maintained to track laboratory usage.

Consumables:

- Consumables are purchased each academic year to ensure the smooth conduct of laboratory experiments.

Consumable Issue Registers:

- Registers for issuing and tracking consumables are maintained for efficient stock management.

Stock Verification:

- Internal stock verification is conducted annually, and action reports are prepared to address any discrepancies.

Extended Laboratory Hours:

- Laboratories are available beyond regular working hours when necessary to accommodate student needs.

Student Resources:

- Laboratory manuals are prepared and provided to students for reference.
- Technical informative charts are displayed in laboratories.
- Innovative projects are showcased in laboratories to inspire and engage students.

Information Displays:

- Practical session timetables, experiment lists, equipment lists, and safety measures are prominently displayed in all laboratories.

B. Overall Ambiance:**Illumination and Ventilation:**

All laboratories are designed with sufficient windows to ensure proper illumination and ventilation, creating a comfortable working environment.

Safety Measures:

- Gangways in the laboratories are clearly marked for safe navigation.
- The floors are regularly cleaned to maintain a dust-free environment conducive to laboratory work.

The above-mentioned outlines for maintaining laboratory equipment and ensuring a conducive overall ambience in the laboratories cover equipment provision, regular maintenance, software updates, security measures, consumables management, extended laboratory hours, lighting, ventilation, and safety precautions. This comprehensive approach contributes to the efficient functioning of laboratories and creates a comfortable and safe learning environment for students and staff.

6.5 Availability of computing facility in the department

S.No.	No. of Computer terminals	Students Computer Ratio	Details of Legal Software	Shared / Exclusive	Details of Networking	Details of Printers, Scanners etc.
1.	2(Dept Staff Room)	2	-----	Exclusive	Nil	1
2.	60(Computer center)	1:1	AUTO CAD	Shared	Local Area network using star topology - Big data	NO
			CREO			
			3Ds Max			
			Revit Architecture 2024			
			Fusion 360 (Education License)			
3.	10(Microprocessor & Microcontroller Lab)	1:5	-----	Shared	-	-

6.6 Language lab

Availability:

- In today's rapidly evolving professional landscape, effective communication has become a fundamental prerequisite for success in any career.
- The imperative to cultivate such skills is a widely acknowledged phenomenon in contemporary society. Recognizing the critical importance of communication, both the All India Council for Technical Education (AICTE) and the State Board of Technical Education (SBTE) in Bihar place significant emphasis on nurturing students' communicative skills.
- As technology has seamlessly integrated into every aspect of human life, it has extended its influence into the field of communication.

Our Language Lab serves as a cornerstone for the development of our students language and communication skills. It harnesses the power of advanced audio and video systems to fortify students' abilities in learning , reading,writing and speaking.

Key Features of our Language Lab:

Location: Our well-equipped Language Lab is situated on the First floor in Room No. 1204A.

Ambiance: The lab is fully air-conditioned, providing a comfortable and conducive environment for language learning.

Software: We utilize the ORELL Talk Smart Version software, offering students access to state-of-the-art language learning tools.

Shared - With all departments:

- Our Language Lab is a resource shared across all academic departments, fostering cross-disciplinary language development and promoting a collaborative learning atmosphere.

Beneficiaries:

- The Language Lab caters to students across all three academic years, including 1st, 2nd, and 3rd-year students, ensuring a comprehensive and continuous development of language and communication skills throughout their academic journey.

Name of the Software	ORELL Talk Smart Version
No.of Computers	30
No.of Headphones	30
LCD Projector	1

Utilization:

- The Language Lab offers a wide array of activities and exercises that empower students to enhance their language and communication skills effectively. Here are some of the key ways in which the lab is utilized:

Listening Practice:

- Students engage in listening exercises, sharpening their comprehension skills as they follow passages and answer questions

Enhancing Language Proficiency:

- The language lab is a valuable resource for students to improve their language skills through interactive exercises and real-life simulations.

Personalized Learning:

- It offers a tailored learning experience, allowing students to practice listening, speaking, and writing in a controlled environment at their own pace.

Multi-Lingual Support:

- The language lab caters to a variety of languages, enabling learners to explore and master different languages effortlessly.

Pronunciation and Accent Improvement:

- Students can work on perfecting their pronunciation and reducing their accents by utilizing the lab's audio and visual aids.

Assessment and Feedback:

- The lab also provides a platform for instructors to evaluate students' progress and offer constructive feedback to help them refine their language abilities.

Language Lab Software Certificate:



Criterion 7

Continuous Improvements

7.1 Actions taken based on the results of evaluation of each of the POs and PSOs:

POs Attainment Levels and Actions for Improvement- (2022-23)

PO1	Basic and Discipline - Specific Knowledge: Apply Knowledge of basic Mathematics, Science and Engineering Fundamentals and Engineering Speciation to Solve the Engineering Problems.
Target Level	Attainment Level
2.67	2.49
Deviation : 0.18	
Observations: <ol style="list-style-type: none"> 1. The individual's attainment level is slightly below the target level, indicating a need for improvement in applying basic mathematics, science, and engineering fundamentals to solve engineering problems. 2. There may be areas within basic mathematics, science, or engineering where the individual is struggling or lacking proficiency. 	
Action Taken: <ol style="list-style-type: none"> 1. Conduct a detailed assessment or review to identify specific areas where the individual may be lacking in knowledge or skills. 2. Provide additional training, resources, or support to address any identified gaps in basic mathematics, science, or engineering fundamentals. 3. Offer opportunities for practical application or hands-on experience to reinforce learning and improve problem-solving abilities. 4. Encourage the individual to seek guidance or mentorship from more experienced engineers or professionals in their field. 	

PO2	Problem Analysis: Identify and analyze well defined Engineering problems using codified standard methods.
Target Level	Attainment Level
1.79	1.57
Deviation : 0.22	
<p>Observations:</p> <ol style="list-style-type: none"> 1. The attainment level for problem analysis, which involves identifying and analyzing well-defined engineering problems using codified standard methods, is below the target level. 2. The deviation between the target level and the attainment level is 0.22, indicating a significant gap. 3. The individual may struggle with effectively identifying and analyzing engineering problems using established methods. 	
<p>Action Taken:</p> <ol style="list-style-type: none"> 1. Provide additional training sessions or workshops focused on problem-solving techniques and methodologies commonly used in engineering. 2. Offer opportunities for practical exercises and case studies to help the individual develop their problem-solving skills. 3. Encourage the individual to seek guidance from experienced engineers or mentors who can provide insights and advice on effective problem analysis. 	

PO3	Design/development of Solutions: Design Solutions for Well - defined technical problems and assist with the design of systems components or processes to Meet Specified needs.
Target Level	Attainment Level
1.94	1.73
Deviation = 0.21	
<p>Observations:</p> <ol style="list-style-type: none"> 1. The attainment level for the design/development of solutions is below the target level. 	

PO3	<p>Design/development of Solutions: Design Solutions for Well - defined technical problems and assist with the design of systems components or processes to Meet Specified needs.</p>
<p>2. The deviation between the target level and the attainment level is 0.21, indicating a notable gap.</p> <p>3. The individual may face challenges in effectively designing solutions for well-defined technical problems and assisting with the design of system components or processes to meet specified needs.</p>	
<p>Action Taken:</p> <ol style="list-style-type: none"> 1. Conduct a thorough assessment to identify specific areas where the individual may require improvement in designing solutions. 2. Offer targeted training programs or workshops focused on enhancing the individual's skills in problem-solving, creativity, and design thinking. 3. Provide opportunities for the individual to collaborate with experienced engineers or cross-functional teams on real-world design projects. 	

PO4	<p>Engineering Tools, Experimentation and Testing: Apply modern Engineering tools and appropriate techniques to conduct standard tests and measurements.</p>
Target Level	Attainment Level
2.05	1.85
Deviation = 0.20	
<p>Observations:</p> <ol style="list-style-type: none"> 1. The attainment level for the application of modern engineering tools and techniques to conduct standard tests and measurements is below the target level. 2. There is a deviation of 0.20 between the target level and the actual attainment level, indicating a noticeable gap. 	

PO4	Engineering Tools, Experimentation and Testing: Apply modern Engineering tools and appropriate techniques to conduct standard tests and measurements.
3. The individual may face challenges or may not be fully proficient in using modern engineering tools and techniques for conducting tests and measurements.	
Action Taken:	
<ol style="list-style-type: none"> 1. Conduct a detailed assessment to identify specific areas where the individual may require improvement in using engineering tools and techniques. 2. Offer targeted training programs or workshops focused on enhancing the individual's skills in using modern engineering tools relevant to their field. 3. Provide hands-on practice sessions where the individual can gain experience in conducting standard tests and measurements using appropriate techniques. 	

PO5	Engineering Practices for Society, Sustainability and Environment: Apply appropriate technology in the context of Society, sustainability, environment and ethical practices.
Target Level	Attainment Level
1.49	1.35
Deviation 0.14	
Observations:	
<ol style="list-style-type: none"> 1. The attainment level for applying appropriate technology in the context of society, sustainability, environment, and ethical practices is slightly below the target level. 2. There is a deviation of 0.14 between the target level and the actual attainment level, indicating a minor gap. 3. The individual may have some understanding and application of engineering practices related to society, sustainability, and the environment, but there is room for improvement. 	
Action Taken:	
<ol style="list-style-type: none"> 1. Review the individual's understanding of societal, environmental, and ethical considerations in engineering practices. 	

PO5	<p>Engineering Practices for Society, Sustainability and Environment: Apply appropriate technology in the context of Society,sustainability,environment and ethical practices.</p>
<p>2. Provide additional training or workshops on sustainable engineering practices, including topics such as environmental impact assessment, green technology, and ethical decision-making.</p> <p>3. Encourage the individual to consider the broader societal implications of their engineering projects and solutions.</p>	

PO6	<p>Project Management: Use engineering management principles individually,as a team member or a leader to manage projects and effectively communicate about well defined engineering activities.</p>
Target Level	Attainment Level
1.60	1.47
Deviation = 0.13	
<p>Observations:</p> <ol style="list-style-type: none"> The attainment level for project management, which involves using engineering management principles to manage projects and effectively communicate about engineering activities, is slightly below the target level. There is a deviation of 0.13 between the target level and the actual attainment level, indicating a minor gap. The individual may have some understanding and application of engineering management principles but may require further development in project management skills. 	
<p>Action Taken:</p> <ol style="list-style-type: none"> Provide training sessions or workshops on project management methodologies, tools, and techniques. Offer opportunities for the individual to participate in project teams or leadership roles to gain practical experience in project management. 	

PO6	<p>Project Management: Use engineering management principles individually, as a team member or a leader to manage projects and effectively communicate about well defined engineering activities.</p>
<p>3. Encourage effective communication practices within engineering teams, emphasizing the importance of clear and concise communication about project activities.</p> <p>4. Provide guidance on time management, resource allocation, risk assessment, and other key aspects of project management.</p>	

PO7	<p>Life - Long Learning: Ability to analyze individual needs and engage in updating in the context of technological changes.</p>
Target Level	Attainment Level
1.35	1.27
Deviation: 0.08	
<p>Observations:</p> <ol style="list-style-type: none"> The attainment level for lifelong learning, which involves the ability to analyze individual needs and engage in updating skills in the context of technological changes, is slightly below the target level. There is a deviation of 0.08 between the target level and the actual attainment level, indicating a minor gap. The individual demonstrates some ability to engage in lifelong learning but may need further development in analyzing individual learning needs and adapting to technological changes. 	
<p>Action Taken:</p> <ol style="list-style-type: none"> Assess the individual's current approach to lifelong learning and identify areas for improvement. Provide guidance on self-assessment techniques to identify personal learning needs and goals. Offer resources and support for continuous professional development, including access to online courses, workshops, seminars, and conferences. 	

PSO 1	To employ the basic concept of applied science in developing electrical machines for discrete applications and services.
Target Level	Attainment Level
1.98	1.84
Deviation 0.14	
<p>Observations:</p> <ol style="list-style-type: none"> 1. The attainment level for PSO 1, which involves applying the basic concepts of applied science in developing electrical machines for discrete applications and services, is slightly below the target level. 2. There is a deviation of 0.14 between the target level and the actual attainment level, indicating a minor gap. 3. The individual demonstrates some proficiency in applying applied science concepts to develop electrical machines, but there is room for improvement. 	
<p>Action Taken:</p> <ol style="list-style-type: none"> 1. Provide targeted training or workshops on the application of applied science principles in electrical engineering. 2. Offer hands-on projects or case studies that require the application of applied science concepts to develop electrical machines. 3. Encourage collaboration with experienced engineers or researchers in the field to gain insights into best practices and emerging trends. 	
PSO 2	To Understand the concept of generation, transmission, distribution, utilization of electrical energy and solar systems to solve technical problems of the society.
Target Level	Attainment Level
1.86	1.66
Deviation 0.20	
<p>Observations:</p> <ol style="list-style-type: none"> 1. The attainment level for PSO 2, which involves understanding the concepts of electrical energy generation, transmission, distribution, utilization, and solar systems to solve technical problems in society, is below the target level. 	

PSO 2	To Understand the concept of generation, transmission, distribution, utilization of electrical energy and solar systems to solve technical problems of the society.
<p>2. There is a deviation of 0.20 between the target level and the actual attainment level, indicating a noticeable gap.</p> <p>3. The individual may have some understanding of the concepts but may need further development to effectively apply them to solve technical problems in society.</p>	
<p>Action Taken:</p> <p style="padding-left: 40px;">Action 1: Students are encouraged to participate in workshops and hands-on training programmed to enrich their practical skills.</p> <p style="padding-left: 40px;">Action 2: More value added courses are initiated for the students to have a clear idea of the mod learning.</p>	

PSO 3	To design and estimate the electrical cost and material requirements for services like residential building, workshop, laboratory in such wise.
Target Level	Attainment Level
1.39	1.34
Deviation 0.05	
<p>Observations:</p> <p>1. The attainment level for PSO 3, which involves designing and estimating electrical costs and material requirements for various services, is slightly below the target level.</p> <p>2. There is a deviation of 0.05 between the target level and the actual attainment level, indicating a minor gap.</p> <p>3. The individual demonstrates proficiency in designing and estimating electrical requirements, but there is room for slight improvement.</p>	
<p>Action Taken:</p> <p>1. Review the individual's understanding of electrical design principles and cost estimation techniques.</p>	

PSO 3	To design and estimate the electrical cost and material requirements for services like residential building, workshop, laboratory in such wise.
<ol style="list-style-type: none">2. Provide targeted training or workshops on electrical design software and cost estimation tools commonly used in the industry.3. Offer practical exercises or projects that require designing electrical systems and estimating material requirements for different types of services.4. Encourage collaboration with experienced professionals or contractors to gain insights into industry standards and best practices.	

7.2 Improvement in Success Index of Students without the backlog:

Items	Latest passed out Batch(2020-21)	Latest Passed out Batch minus 1(2019-20)	Latest Passed out Batch minus 2(2018-19)
Success Index(from 4.2.1)	0.33	0.09	0.21

7.3 Improvement in Placement and Higher Studies:

Items	Latest passed out (2020-21)	Latest passed out minus 1 (2019-20)	Latest passed out minus 2 (2018-19)
Placement Index(from 4.6)	1.21	1.08	1.12

7.4 Improvement in Academic Performance in Final year:

Items	Latest passed out (2020-21)	Latest passed out minus 1 (2019-20)	Latest passed out minus 2 (2018-19)
Academic Performance Index(from 4.3)	8.52	7.15	6.87

7.5 Internal Academic Audits to Review Complete Academics & to Implement Corrective Actions on Continuous Basis:

Items	2022-23(CAYm1)	2021-22(CAYm2)	2020-21(CAYm3)
Academic Performance Index(from 4.3)	3	4	3

7.6 New Facility created in the Program:

Items	2022-23(CAYm1)	2021-22(CAYm2)	2020-21(CAYm3)
New Facility Created	Microprocessor & Microcontroller Lab	Smart Board,	Staff Cabin, Mentor & Mentee System

Institute Level Criteria

Criterion 8

Student Support System

8 STUDENT SUPPORT SYSTEMS

8.1 Mentoring system to help at the individual level (10):

A. Details of the mentoring system that has been developed for the students for various purposes and also state the efficacy of such system (10)

- Type of mentoring: Professional guidance/career advancement/course work specific/laboratory specific/all-around development.
- Number of faculty mentors:
- Number of students per mentor:
- Frequency of meeting:

(The institution may report the details of the mentoring system that has been developed for the students for various purposes and also state the efficacy of such a system.)

Write Answer:

In our institution, we have implemented a robust mentoring system aimed at providing comprehensive support to our students on an individual level. This system has been designed to cater to various aspects of students' academic and personal development. In this article, we will delve into the details of our mentoring system and highlight its effectiveness.

Type of Mentoring:

- Our mentoring program encompasses different facets of a student's journey, including professional guidance, career advancement, course-specific assistance, laboratory-specific support, and all-round personal development.
- This multifaceted approach ensures that students receive tailored guidance based on their unique needs and aspirations.

Faculty Involvement:

- To make this system effective, we have dedicated 4 to 5 experienced faculty members per class who serve as mentors.
- These mentors are carefully selected based on their expertise and willingness to engage with students on a personal level.

Student-to-Mentor Ratio:

- We maintain a low student-to-mentor ratio, with each mentor responsible for a group of 10 to 15 students.
- This ensures that mentors can provide personalized attention to each student under their care.

Frequency of Meetings:

- Our mentoring program encourages regular interactions.
- Mentors meet with their assigned students either once a month or twice a semester, depending on the specific needs and goals of the students.

Contact Hours:

- To accommodate students' schedules, mentor-mentee meetings are scheduled during the zeroth hour, from 3:50 pm to 4:40 pm.
- This time slot allows for uninterrupted discussions and ensures that students can focus on their academic and personal growth.

Specific Mentor Profile:

- Our mentoring system relies on a comprehensive mentor profile that includes various aspects of the student's life and performance.

This profile encompasses:

Personal Details:

- Understanding each student's background, interests, and aspirations.

Academic & Non-Academic Performance:

- Analyzing academic achievements, as well as involvement in extracurricular activities.

Attendance Performance:

- Tracking attendance to identify potential issues or patterns.

Parents Interaction:

- Encouraging communication with parents to ensure a holistic support network.

Non-Compliance Details:

- Addressing any non-compliance issues or disciplinary concerns.

Mentor-Mentee Meeting Details:

- Documenting the progress and outcomes of each mentoring session.

Efficacy of Our Mentoring System:

Our mentoring system has proven to be highly effective in several ways:

Improved Academic Performance:

- Students who actively engage with their mentors tend to perform better academically. The personalized guidance helps them set and achieve their academic goals.

Enhanced Career Prospects:

- By receiving guidance on career choices and development, students are better equipped to make informed decisions about their future.

Personal Growth:

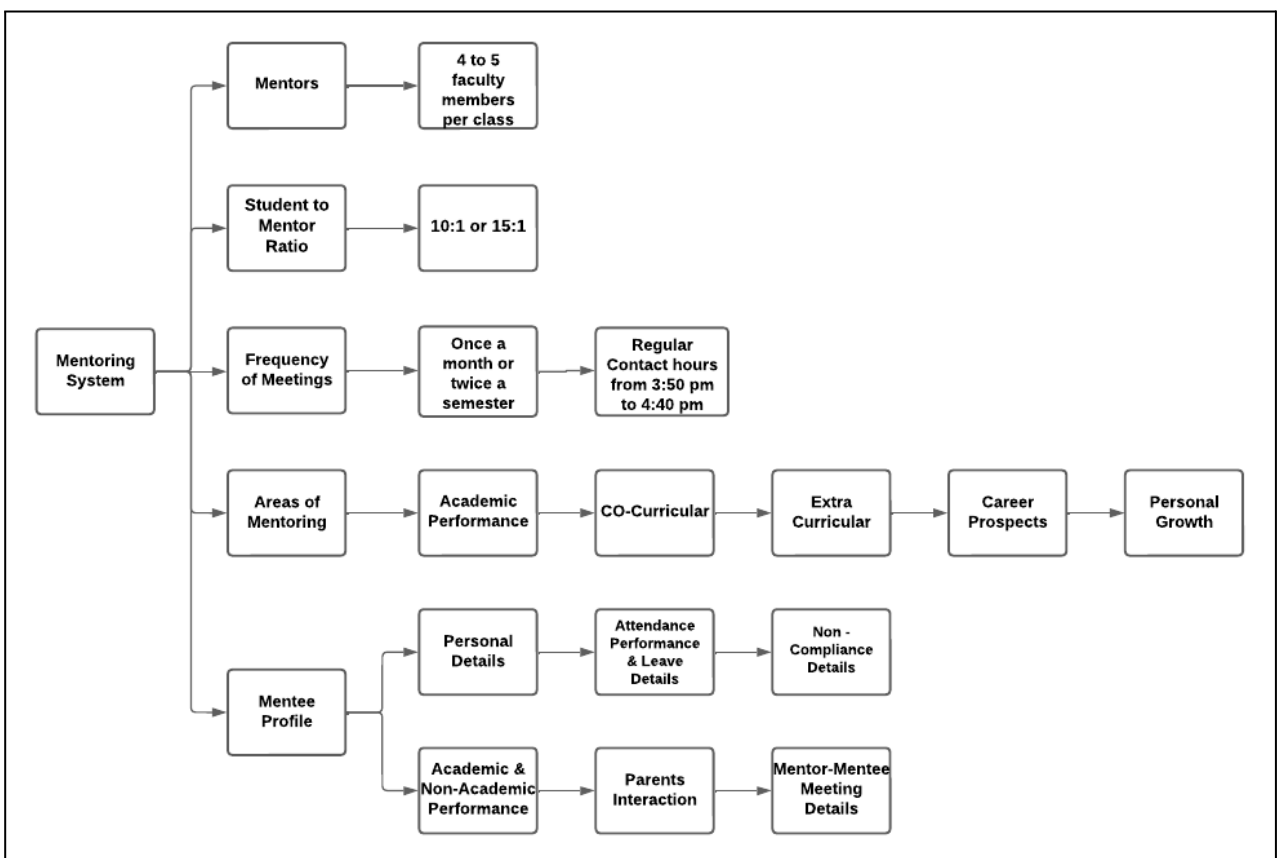
- The all-round development aspect of our mentoring system fosters personal growth, including improved communication skills, confidence, and leadership abilities.

Retention and Satisfaction:

- Our system has contributed to higher student retention rates and overall satisfaction among students and their families.

Early Intervention:

- Through the mentor profile, we can identify and address issues promptly, ensuring that students receive the support they need when they need it.



In conclusion, our institution's mentoring system has been meticulously designed to cater to the individual needs of our students. By providing professional guidance, personalized support, and regular interactions, we aim to empower our students to excel academically and personally. The proven efficacy of this system underscores its value in nurturing the potential of each student.

8.2 Feedback analysis and reward/ corrective measures taken if any (10)

- Feedback collected for all courses: YES/NO;
- Specify the feedback collection process;
- Average Percentage of students who participate;
- Specify the feedback analysis process;
- Basis of reward/ corrective measures, if any;
- Indices used for measuring quality of teaching & learning and summary of the index values for all courses/teachers;
- Number of corrective actions taken.

A. Methodology being followed for feedback collection, analysis and its effectiveness (5)**Write Answer:****Introduction to the feedback collection on teaching & learning:**

Feedback is an integral part of our commitment to continuous improvement in the quality of education. It serves as a valuable tool for assessing and enhancing the teaching and learning experience within our institution.

Feedback collected for all courses: **YES**

Specify the feedback collection process:**Direct Feedback from the Students:**

- We leverage technology through the VMEDULIFE Campus management software to allow students to provide their valuable input on their educational experiences.

Interactive Feedback:

- In addition to online feedback, key academic figures who include Director, Principal, Dean of Academics, or HoD engage in face-to-face interactions with students, fostering a more comprehensive understanding of their needs.

Average Percentage of students who participate:

- Those Students have More than 60% of attendance and students can participate in the feedback process, ensuring a representative sample.

Specify the feedback analysis process:**Feedback Form Preparation:**

- Feedback forms are meticulously designed, incorporating various parameters and collectively totaling 100%.

- These parameters encompass a wide range of aspects relevant to teaching and course delivery.

Timing of Feedback:

- At the middle and end of each semester, students are provided with the opportunity to share their feedback, enabling a holistic evaluation.

Distribution via VMEDULIFE:

- Feedback forms are seamlessly assigned to students through the VMEDULIFE software, allowing students to rate faculty members on designated parameters during assigned hours using computer systems.

Feedback Compilation:

- Each department compiles the received feedback, calculates numerical ratings, and aggregates the data, forming a comprehensive view of faculty performance.

Basis of reward/ corrective measures, if any:**a. Rewards:****✓ Feedback for Faculty Performance Appraisal:**

- Feedback from students plays a pivotal role in faculty performance appraisal, contributing to a comprehensive evaluation.

✓ Recommended for the Best Faculty Award:

- Faculty members who consistently receive positive feedback may be recommended for the Best Faculty Award during official functions, recognizing their dedication and excellence.

b. Corrective Measures:**✓ Counseling for Underperforming Faculty:**

- Faculty members scoring below 75% out of 100% receive dedicated counseling sessions from the Head of the Department, Dean of Academics, and the Principal.
- These sessions aim to help faculty members improve their academic performance and enhance the learning experience for students.

✓ Documentation of Performance Improvements:

- The progress made through counseling is meticulously recorded in the faculty appraisal records, ensuring accountability and tracking improvements over time.

✓ Enhancing Teaching Methodologies:

- Feedback serves as a catalyst for appropriate changes in teaching methodologies, tailored to address the specific needs and preferences of students.

✓ Encouragement for Professional Development:

- Faculty members are actively encouraged to participate in and organize Faculty Development Programmes, workshops, seminars, and conferences.
- These opportunities help faculty members stay updated and continually improve their teaching skills.

Indices used for measuring quality of teaching & learning and summary of the index values for all courses/teachers:

Feedback is gathered through a set of questions employing a 4-point scale, including aspects as follows:

1. Teacher punctuality.
2. Coverage of relevant topics beyond the syllabus.
3. Effectiveness in delivering technical/course content.
4. Communication skills.
5. Use of teaching aids.
6. Motivation of students for learning.
7. Support for practical demonstrations.
8. Support for hands-on training.
9. Responsiveness to student feedback.
10. Willingness to offer help and advice to students.
11. Consistency in evaluating and returning assignments and test papers.
12. Syllabus coverage as prescribed by SBTE Board.

The average rating achieved in the feedback summary form is used as indices, and these indices are accessible for all faculty members at the department level.

B. Record of corrective measures taken (5)**Write Answer:**

At our institution, we place a strong emphasis on the continuous improvement of our teaching and learning processes. To ensure that corrective measures are effectively implemented in response to feedback from students, we have established a systematic and accountable approach.

Below are the key elements of our process for recording corrective measures:

Communication of Corrective Actions:

- When corrective measures are deemed necessary based on the feedback analysis, an official action letter is generated from the principal's office.
- This letter is then sent to the concerned faculty members.

Intermediary Involvement:

- The process of communicating corrective actions is facilitated through the involvement of key academic figures, including the Dean of Academics and the Head of the Department.
- These individuals play a pivotal role in ensuring that the feedback is appropriately addressed.

Timing of Corrective Actions:

- Corrective actions are initiated either once per semester or on a need-based basis, depending on the nature and urgency of the feedback.
- This flexible approach allows us to tailor our interventions to the specific requirements of each situation.

Meticulous Documentation:

- One of our guiding principles is transparency and accountability.
- To uphold these values, all corrective actions are meticulously documented.
- Separate files are maintained to record the details of each corrective measure, including the nature of the feedback, the action taken, the timeline for improvement, and any other relevant information.

By adhering to this structured approach, we not only demonstrate our commitment to addressing feedback effectively but also ensure that the process is transparent, accountable, and conducive to the continuous enhancement of the teaching and learning experience at our institution.

8.3 Feedback on facilities (5)

A. Student feedback on facilities, analysis and corrective action taken (5)

Write Answer:

At GEMS Polytechnic College, we are committed to providing a conducive and enriching environment for our students, parents, and staff. To ensure that our facilities meet their needs and expectations, we have established an effective feedback system.

Student Feedback on Facilities:

- To gather valuable insights from our students regarding the facilities and amenities, we employ several methods:

Suggestion Box:

- In both the Principal's office and hostels, we have placed suggestion boxes.
- Students can use these boxes to share their feedback concerning facilities and other issues anonymously.

Online Feedback Form:

- We also utilize digital platforms such as Google Forms and VMEDULIFE software to collect general feedback on facilities from students.
- This allows for efficient data collection and analysis.

Feedback Categories:

In the feedback forms, we inquire about various Facilities and Amenities available on the GEMS Polytechnic Campus. Students rate these aspects on a 5-point scale. The categories include Campus Atmosphere & Cleanliness, Measures Taken on Ragging and Women Harassment, Central and Digital Library Facility, Internet/Wi-Fi Facility, Canteen Facility, Laboratories & Workshop, Medical Facility, Hostel Facility, Sports Facility, Transport Facility, Training and Placement Facility, and Extra-Curricular Activity.

Other Stakeholder Feedback:

- In addition to student feedback, we actively seek input from other stakeholders:

Alumni Feedback:

- During Alumni Meet events, we collect feedback from our alumni, which is then analyzed to identify areas for improvement.

Parent Feedback:

- Parents' meetings provide an opportunity for parents to share their feedback on facilities. The respective Head of the Department reviews this feedback and proposes actions for improvement.

Reporting Issues:

- Any issues related to facilities can be reported through faculty coordinators, Heads of Departments, and the Dean of Academics.
- These reports are forwarded to the Principal and Director for necessary action.

Analysis and Corrective Action Taken:

To address the feedback received, we follow a systematic approach:

Feedback Analysis:

- The administrative team thoroughly analyzes the feedback, identifying areas that require attention.

Action Plan and Budget Proposal:

- Based on the analysis, an action plan is formulated, along with a budget proposal to rectify the identified issues.

Prioritization:

- Prioritization is done based on the urgency and necessity of each issue. This ensures that critical concerns are addressed promptly.

Major Issues Resolved:

As a result of our feedback-driven approach, we have successfully resolved several significant issues for the benefit of our students, including:

Improved Internet Speed:	<ul style="list-style-type: none"> • The internet speed has been enhanced to 90 Mbps to facilitate better connectivity for academic and research purposes.
Wi-Fi Connectivity:	<ul style="list-style-type: none"> • Wi-Fi connectivity has been extended to both the college and hostel areas, allowing students greater access to online resources.
Enhanced Library Resources:	<ul style="list-style-type: none"> • Additional books have been added to our library to expand the range of academic resources available to students.
Dedicated Computer Lab:	<ul style="list-style-type: none"> • A separate computer center has been established to ensure maximum student utilization and accessibility.
Transport Facilities:	<ul style="list-style-type: none"> • Bus facilities have been provided for students traveling to SBTE end-semester examination centers, making transportation more convenient
Improved Training and Placement Cell:	<ul style="list-style-type: none"> • Our Training and Placement Cell has been well-equipped and strengthened based on student feedback, enhancing career development opportunities.
Water Facility in Hostel:	<ul style="list-style-type: none"> • After receiving feedback from students regarding facilities, a new RO Water Purifier plant was installed in the Hostel block, and it's now operating efficiently.

At GEMS Polytechnic, we are committed to continually enhancing our facilities based on feedback from our valued stakeholders, ensuring a supportive and conducive learning environment for all.

8.4 Career Guidance, Training, Placement (20)

A. Availability (05)

B. Management (10)

C. Effectiveness (05)

(The institution may specify the facility, its management and its effectiveness for career guidance including counseling for higher studies, campus placement support, industry interaction for training/internship/placement, etc.)

Write Answer:**A. Availability:**

At our institution, we are committed to providing holistic support to our students' career aspirations. To achieve this, we have established two dedicated cells:

Career Guidance & Higher Education Cell:

This cell focuses on offering comprehensive career counseling and guidance services, helping students make informed decisions about their academic and professional paths. We also assist students in gaining admission to renowned higher education institutions.

Career Guidance & Higher Education Cell Constitution:

Sl.No	Role	Name of the Members	Designation
1	Convenor	Mr. Rama Gopal Challa	Principal
2	Co-Convenor	Mr. Ranjith Choudary	Dean of Academics
3	Co-ordinator	Ms. Jensika Rani	Sr.Lecturer/ CIVIL
4	Committee Chair	All HoDs	
5	Internship Co-ordinator:	All Department TPOs	
6	Department Counselor	Mrs. Chinthiya	Lecturer/ CIVIL
7		Mr. Sanjeeva	Lecturer/ EE
8		Mr. Ragunath	Lecturer/ EEE
9		Ms. Meena Kumari	Lecturer/ CSE
10		Mr. Himanshu Kumar Singh	Lecturer/ MECH

Training and Placement Cell:

Our exclusive Training and Placement Cell is designed to continuously enhance our students' skills and assist them in securing suitable employment opportunities while they are still pursuing their studies.

Training and Placement Cell Constitution:

Sl.No	Role	Name of the Members	Designation
1	Convenor	Mr. Rama Gopal Challa	Principal
2	Co-Convenor	Mr. Ranjith Choudary	Dean of Academics
3	Co-ordinator	Ms. Jensika Rani	Sr.Lecturer/ CIVIL
4	Committee Chair	All HoDs	
5	Industry Liaison Officer	Ms. Jensika Rani	Sr.Lecturer/ CIVIL
6	Training Coordinator	All Department TPO	
7	Department-wise data analyst	All Department TPOs	
8	Department Counselor	Mr. Sujin	Lecturer/ CIVIL
9		Mr. Anugrah Ashish	Lecturer/ EE
10		Mr. David	Lecturer/ EEE
11		Ms. Kumar	Lecturer/ CSE
12		Mr. Johan	Lecturer/ MECH

B. Management:**1. Career Guidance:****Career Counseling by Experts:**

- Our students benefit from guidance provided by senior academicians and industry experts who help them navigate the complex world of career choices.

Industry Interaction:

- To provide real-world insights, we regularly invite human resource personnel from various industries to interact with our students, ensuring they are well-prepared for the job market.

Higher Education Support:

- We guide and support students in their quest to secure admissions in esteemed higher education institutions, helping them advance their academic journeys.

2. Training and Placement Cell:

Training Facilities:

- Our Training and Placement Cell is equipped with state-of-the-art facilities and offers a range of training programs.
- These include soft skills development, confidence-building, and personality development workshops, all conducted by professional experts.

Industry Exposure:

- We encourage students to directly engage with industry professionals to explore potential career opportunities.
- This exposure helps them understand industry expectations and requirements.

Skill Development:

- To enhance employability, we provide skill-based training in technical, analytical, and logical areas.
- Our students receive training from both internal trainers and industry experts.

Student Engagement:

- Beyond traditional training, we encourage students to participate in various events such as paper presentations, technical symposia, and project displays.
- These activities foster innovative thinking and enhance managerial skills.

Value-added Courses:

- Each department conducts value-added courses in its specialized areas to bridge any gaps in the curriculum, ensuring that our students are well-prepared for their chosen fields.

Placement Activities:

Department Coordinators:

- Each department appoints a coordinator responsible for addressing career guidance and training needs within that department.

Training and Placement Officer (TPO):

- Our TPO collaborates with department coordinators to formulate and execute placement strategies, ensuring that students are well-prepared for the job market.

Industry Databases:

- We provide students with access to industry databases, empowering them to make informed decisions about their careers.

List of Training Activities for Placements:

1. Self-Introduction - practical & training
2. Communication and Interactive skills
3. The art of survival in the workplace
4. Group Discussion – 1
5. Overview of Entrepreneurship, Start-up and Core company details and recruitment
6. Group Discussion – 2
7. Resume and CV preparation
8. Personality Development
9. Mock Interview – 1
10. Mock Interview – 2
11. Comments and Feedback, any lacking topic can be overviewed

C. Effectiveness:

- The effectiveness of our Career Guidance Cell & Training, Placement Cell is evident through the successful placement of our students in esteemed organizations.
- Our students consistently demonstrate enhanced skills, confidence, and readiness for the workforce.
- We measure our effectiveness through placement rates, feedback from both students and employers and the continued growth and success of our alumni in their chosen fields.
- We remain dedicated to continually improving our services to ensure the ongoing success of our students.

List of our Recruiters

 <p>WINDCARE INDIA Private Limited</p>	 <p>GLOBAL COMPOSITE UAE</p>	 <p>APOLLO TYRES LTD</p> <p>Apollo Tyres Pvt Ltd</p>	 <p>Dhoot Electrical Systems Pvt. Ltd. <i>Increasing Safety Through Innovation</i></p> <p>Dhoot Transmission Pvt Ltd</p>
 <p>Qcon <i>Qatar Engineering & Const.Co. WLL</i></p> <p>Qcon - Qatar Engineering & Construction Company W.L.L</p>	 <p>ANAND GROUP</p>	 <p>SHREE CEMENT LIMITED</p>	 <p>UKB ENGINEERING SOLUTIONS</p>
 <p>KP Reliable technique India Pvt Ltd</p>	 <p>JK RAVINDRA & TATA MOTORS</p>	 <p>Sagar Informatics Pvt. Ltd. <i>We Collaborate your knowledge</i></p> <p>SHREE CEMENT</p>	 <p>shiv-om brass industries</p>
 <p>DHARMARAJ & ENGINEERING AND CON</p> <p>DHARMARAJ & SONS ENGINEERING & CONSTRUCTION</p>	 <p>Nobel Hygiene</p>	 <p>sgk INDIA www.sgkindia.com</p>	 <p>THE IMPRESSION CENTRE LIMITED</p> <p>THE IMPRESSION CENTRE RELIABLE, TRAINING AND DEVELOPMENT</p>
 <p>GABRIEL</p>	 <p>DANA</p>	 <p>AMEM ADVANCED MANUFACTURING</p>	 <p>BAJAJ MOTORS</p>
 <p>layam Layam Group</p>	 <p>FOODWORKS</p>	 <p>MICRO TURNERS</p>	 <p>MICRO TURNERS</p>

Placement Details

Acedamic Year	Department	No. of Final Year Students	Total No. of Final Year Students	No. of students placed in companies or Government Sector	No. of students admitted to higher studies	No. of students turned entrepreneur	Total Number of Students	Over all %
2020 - 2023 (LYG)	CIVIL		0				0	#DIV/0!
	CSE							
	EE	23		20	2	1		
	EEE							
	MECH							
2019 - 2022 (LYGm1)	CIVIL	48	166	33	8	0	145	87%
	CSE	28		17	5	0		
	EE	34		27	3	0		
	EEE	26		20	6	0		
	MECH	30		16	10	0		
2018 - 2021 (LYG m2)	CIVIL	20	65	4	12	0	53	82%
	CSE	15		1	8	0		
	EE	14		11	2	0		
	EEE	6		3	3	0		
	MECH	10		4	5	0		
2017 - 2020 (LYG m3)	CIVIL	16	65	7	4	0	48	74%
	EE	15		7	5	1		

8.5 Entrepreneurship Cell/Technology Business Incubator (5)

A. Availability (01)

B. Management (02)

C. Effectiveness (02)

(The institution may describe the facility, its management and its effectiveness in encouraging entrepreneurship and incubation) (Success stories for each of the assessment years are to be mentioned)

Write Answer:**A. Availability**

The Institution's Innovation Council (IIC) at Gems Polytechnic College is a dynamic and proactive initiative designed to empower students in their entrepreneurial journey. Established in accordance with the guidelines provided by the Ministry of Education's Innovation Cell, it is a resource-rich hub for nurturing innovation and entrepreneurial spirit among students.

The IIC offers a plethora of resources and facilities to students, making it readily accessible to those with a drive to innovate and create startups. These resources include dedicated spaces for ideation and innovation, a state-of-the-art technology lab, a well-stocked library of entrepreneurship and innovation-related literature, and access to leading-edge equipment and tools for prototyping and experimentation. Moreover, the council maintains strong networks with industry experts, mentors, and venture capitalists to provide students with expert guidance.

B. Management

The management of the IIC is characterized by a commitment to fostering innovation and entrepreneurship at Gems Polytechnic College. A team of experienced faculty members, innovation experts, and business professionals oversee the council's activities. This diverse team ensures that students receive well-rounded guidance, from the technical aspects of innovation to the intricacies of business development.

Furthermore, the IIC holds regular meetings and workshops to evaluate the needs of students and create tailored support plans for budding entrepreneurs. This proactive management approach ensures that every student's entrepreneurial journey is adequately supported. The council also maintains an open-door policy, encouraging students to reach out for guidance and mentorship whenever they require it.

The Composition of Institution's Innovation Council (IIC):

Sl.No	Name of the Member & Designation	IIC Role
1	Mr. Ragunath A, Lecturer, EEE Dept	President
2	Mr. Robin S, Lecturer, EEE Dept	Vice-President
3	Mr. Johan Deva Raj, Lecturer, Mech Dept	Convener
4	Mr. Prabhu Nath, Lecturer, Mechanical Dept	Innovation Activity Coordinator
5	Mr. Victor Emmanuel, Lecturer, Civil Dept	Startup Activity Coordinator
6	Mr. Bhaskar Ranjan, Lecturer, EE Dept	Internship activity Coordinator
7	Mr. P. Kumaraswamy, Sr. Lecturer, Mech Dept	IPR Activity Coordinator
8	Mrs. Catharine C, Lecturer, EE Dept	NIRF Coordinator
9	Mr. Kumar S, Lecturer, CSE Dept	Member
Student Members:		
10	Ms. Rumana Akhtar-CSE 1st year	Member
11	Ms. Sambhavna Bajpai-CSE 3rd year	Innovation Coordinator
12	Mr. Nikhil Singh-CSE 3rd year	IPR Coordinator
13	Mr. Ayush Raj-CSE 2nd year	Member
14	Ms. Megha Raj-CSE 2nd year	Internship Coordinator
15	Mr. Vivek Ranjan- Mech 3rd year	Member
16	Mr. Kishlay Kumar- Mech 1st year	Member
17	Mr. Shashank Pandey- Mech 2nd year	Startup Coordinator
18	Ms. Priyanka Kumari Singh- Mech 2nd year	Innovation Coordinator
19	Mr. Mahtab Alam- Mech 2nd Year	Member
20	Mr. Pratyam Prakash- Civil 3rd Year	Startup Coordinator
21	Ms. Manisha Kumari-Civil 3rd Year	Internship Coordinator
22	Ms. Komal Kumari-Civil 2nd Year	Member
23	Mr. Amir Subhani-Civil 2nd Year	Member
24	Mr. Shivam kumar- Civil 1st Year	Member
25	Mr. Abhijit Thakur- EEE 3rd Year	Social Media Coordinator
26	Mr. Ravi Shankar Kumar- EEE 3rd Year	Member
27	Ms. Awantika Singh-EEE 3rd Year	Member
28	Mr. Deepraj Kumar-EEE 2nd Year	Member

29	Mr. Raushan Kumar-EEE 2nd Year	Member
30	Ms. Kirti kumari verma-EEE 2nd Year	Member
31	Mr. Raj Kumar- EE 3rd Year	Startup Coordinator
32	Ms. Sneha Kumari- EE 3rd Year	Internship Coordinator
33	Mr. Suryamani Kumar- EE 2nd Year	Innovation Coordinator
34	Mr. Sumit Kumar- EE 2nd Year	Member
35	Mr. Omprakash Singh-EE 1st Year	Member
External Member:		
36	Mr. Vishal Nair, Co-Founder, Light Salt Pvt. Ltd.	Member

C. Effectiveness

The effectiveness of Gems Polytechnic College's IIC in encouraging entrepreneurship and incubation is evident through the myriad activities and initiatives it undertakes. The IIC fosters an environment of creativity, innovation, and problem-solving among students through various means:

IIC Activities Semester Wise Plan:

S.No	Activity	Duration	Participation	Focus on	Incharges
A.1	Workshop on "Entrepreneurship and Innovation" as Career Opportunity	one/half day	min 40 students, max faculty	Interpersonal skill, critical thinking, creative thinking, practical entrepreneurial skills	Mr.Robin Mr.Raghunath
A.2	Session on Problem Solving and Ideation Workshop	one/half day	min 40 students, max faculty	Innovation methodology, Build on skills, Tools ,Brainstorming, ideation	Mr. Johan Deva Raj Mr.Prabhunath
A.3	My Story - Motivational Session by Successful Entrepreneur/Start-up founder	one/half day	min 40 students, max faculty	Risk taking, critical think, team building, rise capital, learn from failure	Mr.Robin Mrs. Catharine
A.4	Exposure and field visit for problem identification	one day	Min 40 students, max faculty	village/ society/industry visit, interaction with key stake holders	Mr. Bhaskar Ranjan Mr. Johan Deva Raj

C.1	National Entrepreneurship Day- celebration	one/half day	min 40 students, max faculty	Awareness on entrepreneurship & innovation, highlight the value of entrepreneurship, the role of innovation within society and role of younger generations for making India as an Innovation hub, expert talk, literary event, awards, demo of innovations	Mr.Victor Immanuel Mr. Robin
A.5	Workshop on Design Thinking, Critical thinking and Innovation Design	one/half day	min 40 students, max faculty	Design thinking, critical thinking, innovative design, Q&A	Mr.Victor Immanuel Mr.Prabhunath
A.6	Workshop on Entrepreneurship Skill, Attitude and Behaviour Development	one day	min 40 students, max faculty	Presentation entrepreneur skill, attitude, behavior	Mr.Kumar S Mr. Bhaskar Ranjan
A.7	Organise an Inter/Intra Institutional Innovation Competition/Challenge/Hackathon and Reward Best Innovations - Manage through YUKTI-NIR	one day	max students possible, max faculty	innovation competition, brochure with start date and end date, registration, evaluation, results, award ceremony	Mr.Ragunath Mr Johan Deva Raj
A.8	Organise an Expert talk on Process of Innovation Development, Technology Readiness Level (TRL); Commercialisation of Lab Technologies & Tech-Transfer	one day	min 40 students, max faculty	Innovation Development, Technology Readiness Level (TRL); Commercialisation of Lab Technologies & Tech-Transfer	Mr.Kumar S Mrs. Catherine
C.2	National Energy Conservation Day (India)-celebration	one/half day	min 50 students, max faculty	india's contribution towards energy efficient nation, global warming & climate change awareness, encourage innovative solutions, motivate save energy, visual art, inviting expert, reward innovative ideas	Mr.Prabhunath Mr. Bhaskar Ranjan
C.3	National startup day-celebration	one/half day	min50 students, max faculty	indian startup ecosystem, encourage people who create environment for startup, startup founder interaction, startup exhibition	Mr.Ragunath Mr Victor Immanuel

IMPACT LECTURE SESSION on Innovation and Entrepreneurship:

GEMS Polytechnic College, Aurangabad, Bihar, organized an impactful lecture series on Innovation and Entrepreneurship as part of the MoE's IIC, AICTE Sponsored program. The event, held on July 19, 2022, featured distinguished speakers. Joseph Paul Arackalan, Manager of Incubation Centre IIT Patna, presented on "Innovation and Entrepreneurship," followed by Mahendra Kumar Gupta, Founder of Udyamita Sanskar Foundation, who discussed "Entrepreneurship Ecosystem and Journey to Start-up." The lectures aimed to inspire faculty members, students, and anyone interested in innovation. E-certificates was provided to participants.



Innovation Ambassador Training at GEMS Polytechnic College, Bihar

Foundation Level Training (June 30 - July 30, 2021):

Bhaskar Ranjan from GEMS Polytechnic College, Bihar, successfully completed the Innovation Ambassador training at the Foundation Level. The training, consisting of 16 sessions with a total of 30 contact hours, was conducted online by MoE's Innovation Cell & AICTE. Ranjan's participation reflects a commitment to fostering innovation within the academic community.



Criterion 9

Governance, Institutional Support and Financial Resources

9 Governance, Institutional Support and Financial Resources

9.1 Organization, Governance and Transparency (25):

9.1.2 Governing body, administrative setup, functions of various bodies, define rules procedures, recruitment and promotional policies (5)

- A. List the Governing Body Composition; their memberships, functions, and responsibilities (02)
- B. Minutes of the meetings and action-taken reports (01)
- C. The published service rules, policies and procedures with year of publication (01)
- D. Extent of awareness among the employees/students (01)

Write Answer:

A. List the Governing Body Composition; their memberships, functions, and responsibilities (02)

Governing Council:

Governance is the key activity that acts as a bridge between the management and stakeholders. The institution has a strong council made up of different luminaries from various walks of life that devices all policies and decisions related to both academic and administration.

- To ensure the efficiency and effectiveness of the governing council, a number of academic and administrative bodies have been formed with duties and responsibilities.
- The governing council of the college meets in a year, to discuss various issues and aspects contributing to the development of the college.
- During the meeting the suggestions from the planning and monitoring board are resolved. It chalks out a roadmap in order to achieve the goals of the institution.

Functions of Governing Council:

- Amend and approve policies from time to time.
- To Uphold the legal stature of the college in line with the policies of AICTE, State Government and affiliating board (SBTE, Bihar) or any other board SBTE, Bihar.
- Construction and maintenance of infrastructure and amenities for the institution.
- Review of academic performance of the institution and suggest remedial measures, if required.
- Mobilizes funds and utilizes the resources maximum, towards the development of the institution.
- Introduction of new programs and/or increasing intake/closure of programs/reduction in intake.
- Implement the recommendations of the planning and monitoring board.
- Review of highlighted feedback summary of stakeholders and planning for corrective actions towards the satisfaction of stakeholders.

Composition of Governing Council:

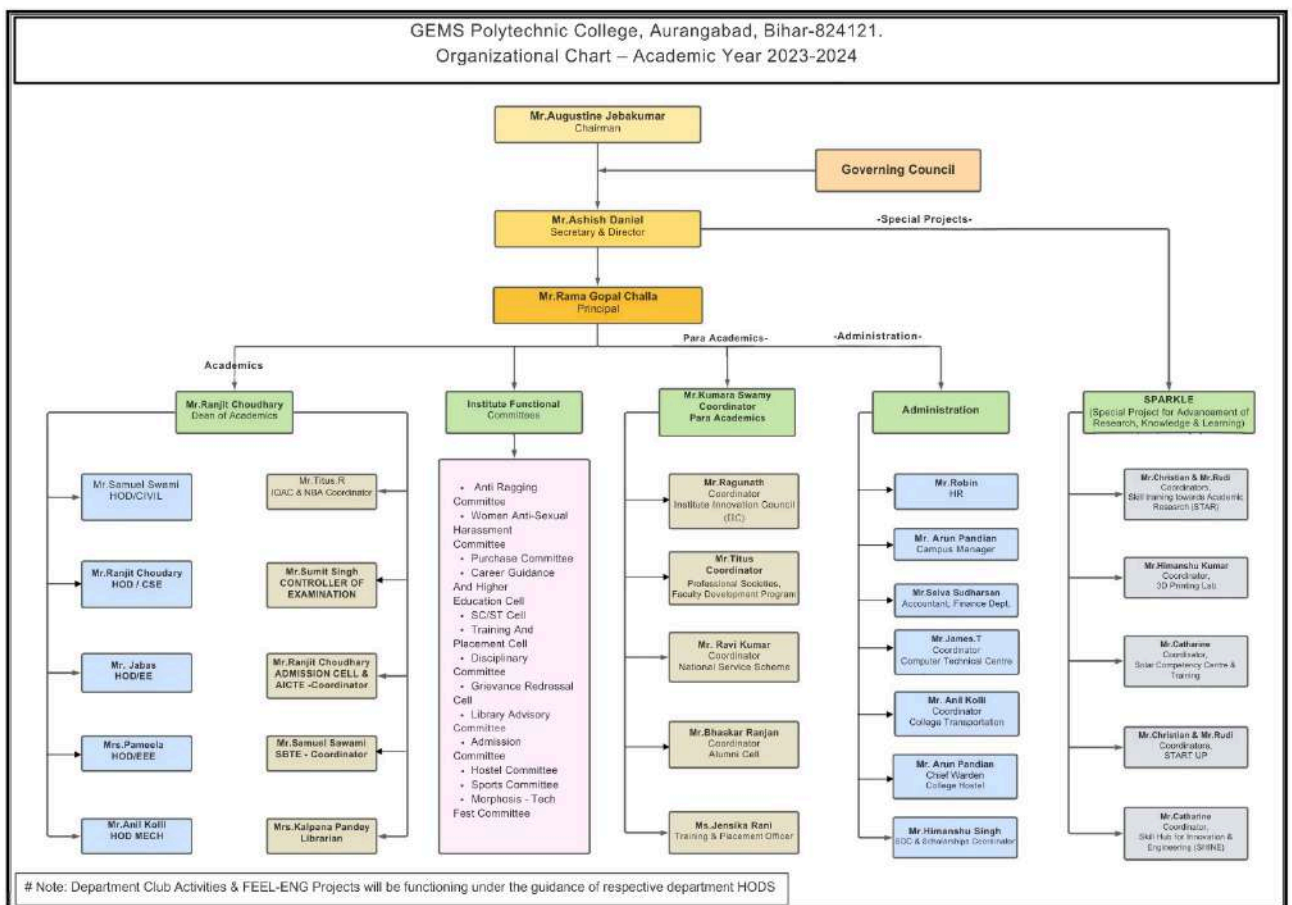
Sl.No	Name	Affiliation	Position
Members nominated by the Trust/Management :			
1.	Mr.Augustine Jebakumar	General Secretary, GEMS	Chairman
2.	Mr.Ashish Daniel	Secretary, GPC	Member
Educationist / Industrialist to be nominated by the Management :			
3.	Dr. B. Priestly Shan	Pro Vice Chancellor, Academic Affairs at Alliance University, Karnataka	Member
4.	Dr. G. Bansal Rajkumar	Principal, Sri Krishna Polytechnic College, Coimbatore, Tamil Nadu.	Member
5.	Dr. Samrajesh Devakadacham	Professor, Department of Computer Science and Engineering, Kuwait College of Science and Technology, Kuwait	Member
6.	Dr. Vijayalaxmi biradar	Director IQAC Kalinga University Raipur, Chhattisgarh	Member
7.	Mr.Kirupakaran Samuel Asir	Reliability Engineer - Planning & Reliability, Qatar Aluminum (Qatalum)	Member
Principal of the College:			
8.	Mr.Ramagopal Challa	Principal	Ex - officio Member Secretary
Members nominated by the Director/ Principal :			
9.	Mr. Ranjit Choudhary	Dean of Academics	Member
10.	Mr.Titus	NBA Coordinator	Member
Affiliating Board nominee (nominated by the Board):			
11.	Dr.Sanjay Kumar	Assistant Secretary, SBTE, Bihar	Ex - officer member

Administrative Body:

Organizational Setup:

The organizational setup of GEMS Polytechnic College is designed to ensure efficient governance and leadership. At the helm is the Principal, overseeing daily operations, guided by the Director and Chairman. The pivotal decisions are shaped collectively by the experienced Governing Council, as depicted in the organizational chart. This collaborative structure fosters effective management and strategic direction for the institute.

Administrative chart shows the hierarchy setup in the college:



Internal Quality Assurance Cell (IQAC):

The Internal Quality Assurance Cell (IQAC) is a cornerstone of GEMS Polytechnic College's commitment to academic excellence and continuous improvement. IQAC plays a pivotal role in enhancing the teaching-learning process and ensuring that the institution adheres to high-quality benchmarks and parameters. Here, we delve into the functions and composition of the IQAC at GEMS Polytechnic College.

Functions of IQAC:**Creating a Quality Culture:**

- One of the primary functions of the IQAC is to instill a culture of quality throughout the institution.
- This involves setting standards, monitoring adherence to these standards, and fostering a commitment to excellence among all stakeholders.

Assessment of Teaching-Learning Processes:

- The IQAC conducts a thorough assessment of the effectiveness of teaching and learning methods.
- This ensures that students receive a high-quality education that aligns with the institution's mission and vision.

Review and Assessment of Action Taken Reports:

- The IQAC reviews and assesses Action Taken Reports related to course and program outcomes.
- This process helps in identifying areas that require improvement and tracking the progress of corrective measures.

Assessment of Feedback Responses:

- Gathering feedback from students, parents, alumni, and other stakeholders is integral to maintaining quality.
- The IQAC analyzes this feedback to identify areas for enhancement and to ensure that the concerns and suggestions of all constituents are addressed.

Coordination of Quality-Related Activities:

- The IQAC acts as a central agency within the institution for coordinating quality-related activities.
- This includes the adoption and dissemination of best practices in education and administration, promoting a culture of innovation and excellence.

Composition of the IQAC:

The IQAC at GEMS Polytechnic College is a diverse body composed of individuals who bring varied perspectives and expertise to the quality assurance process. The composition of the IQAC includes:

- Senior Leaders of the Institution: To provide strategic guidance and leadership.
- Senior Faculty Members from Each Department: To ensure representation from all academic areas.
- Students: To incorporate the perspectives of the primary beneficiaries of education.
- Alumni: To bring insights from graduates who have experienced the institution's offerings.
- Society and Industry Representatives: To bridge the gap between academia and real-world requirements, fostering relevance and alignment with industry needs.

Composition of the IQAC:

S. No	Role	Designation	Name
1.	Chairman	Director	Mr. Ashish Daniel
2.	Senior Administrative Officers	Principal	Mr. Rama Gopal Challa
		Dean of Academics	Mr. Ranjit Choudhary
		NBA Coordinator	Mr. Titus.R
4.	Members	Head Of the Departments	Mr. Anil Kolli, HoD/ MECH
			Mr. Jabas Edwin Raj, HoD/EE
			Ms. Pameela, HoD/ EEE
			Mr. Samuel Prakash Swami, HOD/CE
			Mr Ravi Kumar Saksena HOD(I/c) / CSE.
		Faculties to represent all levels	Mr. Sumit Kumar Singh, COE
			Mr. Robin, HR & Sr. Lecturer, EEE
5.	Nominee from	Local Society	Grama Panchayat, Sarpanch
		Students	Rimjhim Kumari, CSE
		Alumni	Ms Nargis Parween, JE, DoR & LR, Govt. of Bihar.
6.	Nominee from	Employers	Mr.P Jebastian, HR, Manager, Windcare Pvt Ltd-Chennai
		Industrialists/ Stakeholders	Mr.Arunjay Kumar, JK Ravindra-TATA, Aurangabad,Bihar
7.	Member Secretary	Coordinator	Mr Arun Pandian, Sr. Lecturer, MECH.

In conclusion, the IQAC at GEMS Polytechnic College is a pivotal institution within the college, dedicated to fostering a culture of quality, ensuring the effectiveness of educational processes, and facilitating the continuous improvement of the institution's academic and administrative activities. Through its diverse composition and rigorous

functions, the IQAC plays a vital role in maintaining the institution's commitment to excellence.

Program Advisory Council (PAC):

Objective:

- To create a quality culture and adapt best practices in academics to keep the pace with changing educational environment and expectations and support the departments to achieve the vision by remaining up to date with the latest requirements of the industry and incorporating necessary components in the curriculum to the furthest extent.
- The PAC consists of the HoD, Senior faculty members, The Dean (Academics), and the NBA coordinator Department's faculty members, Student Representatives, Alumni Members, and Industry Experts to periodically monitor departmental activities and evaluate parameters related to teaching-learning process and offer suggestions for the continuous improvement.

Functions of Program Advisory Committee (PAC)

The PAC gives guidelines to the department related to the following areas:

- Formation/Revision of the Vision and Mission of the Department
- Formation of Program Educational Objectives.
- Redefine existing PEOs, aligning of PEO's to the mission statements and defining program-specific outcomes.
- Formulation of workable solutions for improvement in the following areas
- Quality of Teaching Learning Process
- Industry Institution Interaction.
- Increase the employability of students.
- Inclusion of topics beyond the syllabus to meet the PEO and PO and bridge the existing gap by encouraging students to do additional experiments in labs and through expert talks in areas beyond the scope of the syllabus.
- Suggest improvement in academic plans and recommend standard practices/systems for attainment of PEOs.
- Encourage for industry-institute interactions to bridge up curriculum/industry gap and suggest quality improvement initiatives to enhance employability.
- To propose necessary action plans for Student projects, value-added training courses, internships, and skill development of students, required for entrepreneurship development and quality improvement to meet PEOs. Monitoring the attainments of Program Outcomes (POs), Program Specific Outcomes (PSOs) and Program Educational Objectives (PEOs).
- Evaluating program effectiveness and proposing necessary changes.
- Measuring the extent of adherence to planned activities and calendar of events.
- Suggesting ways and means to reduce the curriculum gaps in achieving POs and PSOs.
- Preparing periodic reports on program activities, progress, status or other special reports for management.
- **Faculty motivation:** Attend / organize workshop / seminar / FDP, paper publication, development of models / lab.

- **Student motivation:** Attend/participate in technical competitions, paper presentation, mini projects/models, social / cultural events, skill development programs.
- Interacting with students facilitating the attainment of POs, PSOs and PEOs.
- Interact with stakeholders and PAC to facilitate the attainment of POs, PSOs, and PEOs.

PAC Composition:

The PAC consists of members hailing from prestigious institutions and industry experts. It includes representation from alumni, departmental Heads, Senior faculty, and student representatives across all academic years. Additionally, the composition comprises the dean of academics and the NBA coordinator. The present composition of the PAC is as follows:

Sl.No	Name	Affiliation	Position	Email Id & Mobile Number
1.	R.Jabas Edwin Raj	Head of the Department	Convenor	jabas@gemspolytechnic.edu.in 9488081778
2.	Mr.Ranjit Choudhary	Dean of Academics	Member	academicdean@gemspolytechnic.edu.in 8124517713
3.	Mr.Titus R	NBA Coordinator	Member	nba@gemspolytechnic.edu.in 9304706901
4.	Mr.Bhaskar Ranjan	Dept. Senior Faculty Representative	Member	bhaskar@gemspolytechnic.edu.in 8789688690
5.	Mrs.Catharine	Dept. Senior Faculty Representative	Member	catharine@gemspolytechnic.edu.in 7010065904
6.	Arunjay Kumar	Industry Representative	Member	aks@jkraautomobiles.com & 9631936666
7.	Raushan Kumar	Academia Representative	Member	raushan.9623@gmail.com& Assistant Professor Electrical Engineering Department
8.	Abhyanand Kumar	Alumni Representative	Member	abhayanand.club@gmail.com 9122599329 Block Skill Development Center
9.	Mr.Sumit Kumar	2nd Year Student Representative	Member	sumit22ee22@gemspolytechnic.edu.in 7426017313
10.	Ms.Sneha Kumari	3rd Year Student Representative	Member	sneha21020ee@gemspolytechnic.edu.in 7004535082

B. Minutes of the meetings and action-taken reports (01)

Write Answer:

At GEMS Polytechnic College, meticulous records of the minutes of meetings and action-taken reports are diligently maintained. This includes records from the governing

body, the administrative setup, and the functions of various bodies. Furthermore, it encompasses the documentation of defined rules and procedures, recruitment and promotional policies. These records are preserved under the supervision of the respective faculty incharges, ensuring transparency, accountability, and effective decision-making throughout the institution's operations.

C. The published service rules, recruitment and promotional policies and procedures with year of publication (01)

Write Answer:

Service Rules:

Staff Leave Policies (Version 3.1):

Leave-Policy Term:

The following Leave Policy is applicable for the period from July 1, 2023, to June 30, 2024.

Eligibility:

- All regular full-time teaching faculties of our Institution are eligible to apply for leaves as outlined in this policy. This will be subject to the condition that leave can't be claimed as a matter of right and leave sanctioning authority may refuse or revoke leave of any kind except on medical grounds.

Request & Approval:

- The teaching faculties must submit a leave application through the designated leave management system (VMEDULIFE Software) to their Head of the Department well in advance, with reasonable notice.
- The leave application should be submitted in advance, except in cases of unforeseen circumstances or emergencies.
- Approval is subject to the operational needs of the institution and may be granted at the discretion of the management.
- The teaching faculties are expected to return to work promptly upon the completion of their approved leave. Any leaves taken with permission beyond the allotted or approved leave would be considered a Loss Of Pay (LOP).
- Kindly refrain from requesting "Loss of Pay (LOP)" as there is no category or provision for it.
- Failure to complete the biometric attendance entry will result in faculty being considered to be leave, such failures can be corrected on vmedulife upto twice a month.

Employees in their notice period cannot request or take any leave.

Reimbursement:

- Round-trip Travel Allowance (TA) will be provided to all individuals whose hometown is located more than 500 km away.

Policy Category:

The leave policy is structured into the following categories:

- Teaching Faculty
- Librarian, Accountant, Clinical Staff
- Non-Teaching Faculty & Office Assistant

Leave Policy - Teaching Faculty:

Types of Leave	Allotted days	Approval Authority	Remarks
Casual Leave (CL)	12	HoD & Dean of Academics	1 CL will be credited every month that can be accumulated and up to 3 days availed at a time. 2 CL will be approved by HOD More than 2 CL will be approved by the Dean of Academics.
Medical Leave (ML)	6	HoD & Dean of Academics	Less than 3 days can be approved by HOD CL and 3ML can be clubbed during emergencies and needs Dean's Approval.
On Duty (OD)	-	Dean & Principal	The institution will grant on-duty leave for tasks associated with purchasing, promotions, and official meetings (<i>SBTE, AICTE, DRCC etc.</i>)
Bereavement Leave (BL)	3- 6	Principal/ Director	In the case of a death in the immediate family. 3 days for travel less than 500km and 6 days for more than 1500km
Special Leave (SL)	8	Dean & Principal	Special leave may be granted when a teaching faculty member wishes to attend or contribute to conferences/ seminars / symposia / practical training/workshops. In or out of India shall be entitled to special leave for up to 8 days in a calendar year. <i>(Please support such applications with the invitation and your contribution to such events)</i>

Maternity Leave (MTL)	90/120	Principal & Director	<p>Maternity leave is up to three months(90 days) and can be taken anytime during the pregnancy or after delivery as per the choice of the particular worker.</p> <p>Anyone who wants to avail leaves before delivery will have a plan within the routine grant of four months only.</p> <p>For Post Delivery Complications, C-section delivery and instrumental delivery, an additional 1 month can be availed.</p> <p>This leave will be paid only if the employee has completed 11 months at GEMS.</p>
Paternity Leave (PL)	3 - 6	Principal & Director	<p>Paternity Leaves may be granted for 3 days before or up to 30 days from the date of delivery of the child.</p> <p>3 days are granted for staff with travel distances less than 500 km and 6 days for distances greater than 1500 km.</p>
Annual Leave (AL)	30	Principal & Director	<p>The employees who have completed 11 months of service as of the first day of their vacation will be eligible for annual leave.</p> <p>The employee has to be present on the closing date of college and on the opening date of college failing to be present, the number of holidays falling in between will be considered as a Loss of Pay (LOP).</p>
Marriage Leave (MRL)	3 - 6	Principal & Director	<p>Leave allocation is determined by the distance. If the distance exceeds 1500 km, an allotment of 6 days will be provided.</p> <p>Conversely, for distances less than 500 km, a total of 3 days will be allocated.</p>
Late Coming / Early Going	2 per month	HOD	<p>A maximum of two instances of arriving late or leaving early is permitted within a month.</p> <p>Late arrivals up to 50 minutes past 8:45 am will be considered permissible as an instance of late coming.</p> <p>Similarly, early departures between 3:50 pm and 4:40 pm will be considered as an instance of early going.</p> <p>Every third occurrence of Late Coming (LC) or Early Going (EG) will be considered as 1 Casual Leave (CL).</p> <p>(Ex. 3-5 LC/EG = 1CL, 6-8 LC/EG = 2CL, 9-11 LC/EG = 3CL)</p>

Leave Policy - Librarian, Accountant, Clinical Staff:

Types of Leave	Allotted days	Approval Authority	Remarks
Casual Leave (CL)	10	HoD & Dean of Academics	1 CL will be credited every month that can be accumulated and up to 3 days availed at a time. 2 CL will be approved by HOD More than 2 CL will be approved by the Dean of Academics.
Medical Leave (ML)	4	HoD & Dean of Academics	Less than 3 days can be approved by HOD CL and 3ML can be clubbed and needs Dean's Approval.
On Duty (OD)	-	Dean & Principal	The institution will grant on-duty leave for tasks associated with purchasing, promotions, and official meetings (<i>SBTE, AICTE, DRCC etc.</i>)
Bereavement Leave (BL)	3- 6	Principal/ Director	In the case of a death in the immediate family. 3 days for travel less than 500km and 6 days for more than 1500km.
Maternity Leave (MTL)	90/120	Principal & Director	Maternity leave is up to three months(90 days) and can be taken anytime during the pregnancy or after delivery as per the choice of the particular worker. Anyone who wants to avail leaves before delivery will have a plan within the routine grant of four months only. For Post Delivery Complications, C-section delivery and instrumental delivery, an additional 1 month can be availed. This leave will be paid only if the employee has completed 11 months at GEMS Polytechnic.
Paternity Leave (PL)	3 - 6	Principal & Director	Paternity Leaves may be granted for 3 days before or up to 30 days from the date of delivery of the child. 3 days are granted for staff with travel distances less than 500 km and 6 days for distances greater than 1800 km.

Annual Leave (AL)	25	Principal	The employee who has completed 11 months of service as of the first day of their vacation will be eligible for annual leave. The employee has to be present on the closing date of college and on the opening date of college failing to be present, the number of holidays falling in between will be considered as a Loss of Pay (LOP).
Marriage Leave (MRL)	3 - 6	Principal & Director	Leave allocation is determined by the distance. If the distance exceeds 1500 km, an allotment of 6 days will be provided. Conversely, for distances less than 500 km, a total of 3 days will be allocated.
Late Coming / Early Going	2 per month	HOD	A maximum of two instances of arriving late or leaving early is permitted within a month. Late arrivals up to 50 minutes past 8:45 am will be considered permissible as an instance of late coming. Similarly, early departures between 3:50 pm and 4:40 pm will be considered as an instance of early going. Every third occurrence of Late Coming (LC) or Early Going (EG) will be considered as 1 Casual Leave (CL). <i>(Ex. 3-5 LC/EG = 1CL, 6-8 LC/EG = 2CL, 9-11 LC/EG = 3CL)</i>

Leave Policy - Non-Teaching Staff, Office Assistant:

Types of Leave	Allotted days	Approval Authority	Remarks
Casual Leave (CL)	9	HoD & Dean of Academics	1 CL will be credited every month that can be accumulated and up to 3 days availed at a time. 2 CL will be approved by HOD More than 2 CL will be approved by the Dean of Academics.
Medical Leave (ML)	3	HoD & Dean of Academics	Less than 3 days can be approved by HOD CL and 3ML can be clubbed and needs Dean's Approval.
On Duty (OD)	-	Dean & Principal	The institution will grant on-duty leave for tasks associated with purchasing, promotions, and official meetings <i>(SBTE, AICTE, DRCC etc.)</i>
Bereavement Leave (BL)	3- 6	Principal/ Director	In the case of a death in the immediate family. 3 days for travel less than 500km and 6 days for more than 1500km.

Maternity Leave (MTL)	90/120	Principal & Director	<p>Maternity leave is up to three months(90 days) and can be taken anytime during the pregnancy or after delivery as per the choice of the particular worker. Anyone who wants to avail leaves before delivery will have a plan within the routine grant of four months only.</p> <p>For Post Delivery Complications, C-section delivery and instrumental delivery, an additional 1 month can be availed.</p> <p>This leave will be paid only if the employee has completed 11 months at GEMS Polytechnic.</p>
Paternity Leave (PL)	3 - 6	Principal & Director	<p>Paternity Leaves may be granted for 3 days before or up to 30 days from the date of delivery of the child.</p> <p>3 days are granted for staff with travel distances less than 500 km and 6 days for distances greater than 1800 km.</p>
Annual Leave (AL)	15	Principal	<p>The employee who has completed 11 months of service as of the first day of their vacation will be eligible for annual leave.</p> <p>The employee has to be present on the closing date of college and on the opening date of college failing to be present, the number of holidays falling in between will be considered as a Loss of Pay (LOP).</p>
Marriage Leave (MRL)	3 - 6	Principal & Director	<p>Leave allocation is determined by the distance. If the distance exceeds 1500 km, an allotment of 6 days will be provided.</p> <p>Conversely, for distances less than 500 km, a total of 3 days will be allocated.</p>
Late Coming / Early Going	2 per Month	HOD	<p>A maximum of two instances of arriving late or leaving early is permitted within a month.</p> <p>Late arrivals up to 50 minutes past 8:45 am will be considered permissible as an instance of late coming.</p> <p>Similarly, early departures between 3:50 pm and 4:40 pm will be considered as an instance of early going.</p> <p>Every third occurrence of Late Coming (LC) or Early Going (EG) will be considered as 1 Casual Leave (CL).</p> <p>(Ex. 3-5 LC/EG = 1CL, 6-8 LC/EG = 2CL, 9-11 LC/EG = 3CL)</p>

Recruitment Procedure in GEMS Polytechnic College:

At GEMS Polytechnic College, the recruitment of faculty and staff is conducted in strict adherence to the guidelines and norms set forth by the State Board of Technical

Education, Bihar (SBTE) and the All India Council for Technical Education (AICTE). Our comprehensive recruitment procedure ensures that we identify and onboard talented individuals who align with our institution's values and goals. Here is an overview of our recruitment process:

Manpower Requirement Estimation:

- The Head of the Departments (HODs) plays a pivotal role in estimating the manpower requirements, both for teaching and non-teaching positions.
- HODs are required to submit a detailed report outlining the anticipated staffing needs at least three months before the start of each semester. This report is forwarded to the Human Resource Officer (HRO).

HRO Review and Vacancy Sorting:

- The HRO meticulously reviews the submitted reports from HODs, which outline the staffing requirements.
- Based on the inputs provided, the HRO collaborates with department heads to sort and identify the specific vacancies that need to be filled.

Formal Announcement:

- A formal announcement is made through various means of advertisement to communicate the availability of positions to prospective candidates.
- These advertisements help attract suitable candidates to apply for the open positions.

Department	Position	Eligibility	Vacancies
Electrical	Lecturer	B. Tech/B.E./M.Tech/M.E in EE/EEE with First Class	1
Mechanical	Lecturer	B. Tech/BE/M.Tech/M.E in Mechanical with First Class	1
CSE	Lecturer	B. Tech/B.E/M.Tech/M.E in CSE with First Class	1
English	Lecturer	MA in English with First Class	1
Physics	Lecturer	M.Sc in Physics with First Class	1
CSE	HOD	M.Tech/M.E in CSE with minimum 2 years Experience	1

Apply on or before 12th August 2023

Accommodation and food facility available on campus
Pay Scale: As Per 6th Pay Commission

Call or whatsapp: +91 789 1188385
Website: www.gemspolytechnic.edu.in
Email: polytechnic@gemspolytechnic.org

BH - 2, Jagya More, Ratanpura, Aurangabad, Bihar - 824121
www.gemspolytechnic.edu.in, polytechnic@gemspolytechnic.org
+91 700 1188385

GEMS POLYTECHNIC COLLEGE
(Approved by AICTE, Govt. of India, F. No Northern/2015/1 - 2474317051)
BH - 2, Jagya More, Ratanpura, Bherhaili (P.O) Aurangabad, Bihar - 824 121

INTERVIEW EVALUATION

Name of the Candidate: _____
Qualification: _____
Date of Interview: _____
Position: _____
Department: _____

Please use the following numbers to indicate the rating:
5 - Exceptional, 4 - Better than average, 3 - Capable / Average, 2 - Poor, 1 - Not acceptable,
N/A - Not observed

CANDIDATE EVALUATION BY THE INTERVIEWER

S.No.	SKILL	RATING
1	Relevant educational background	
2	Related work experience	
3	Technical Knowledge	
4	Communication / Listening Skills	
5	Attitude / Confidence level	
6	Presentation / Appearance	
7	Stress tolerance	
8	Professional Demeanour	
9	Interpersonal Skills	
10	Integrity	

Overall Impression Rating: _____
Hiring recommendation after completion of interview: Hire / Not Hire

NAME OF THE INTERVIEWER: _____ DESIGNATION: _____ SIGNATURE: _____

Faculty Recruitment Poster**Interview Evaluation sheet**

- The HRO takes on the responsibility of screening the profiles of candidates who respond to the job postings.
- Candidates are selected based on criteria such as educational qualifications, relevant industry or academic experience, age, location of residence, and other job specifications.

Interview Selection:

- Shortlisted candidates are invited for interviews, which may be conducted in either online or offline mode.
- The interview panel comprises key stakeholders, including the Director, Principal, Dean of Academics, HR representatives, and the respective HODs. Senior lecturers may also be part of the interview panel.

Performance Evaluation:

- The Management carefully reviews the performance of candidates during the interview process.
- In addition to assessing qualifications, the panel evaluates the candidate's suitability in terms of attitude, cultural alignment with the organizational values, and stability.

Appointment and Terms of Employment:

- Candidates who successfully pass the interview stage are offered faculty positions.
- The details of employment, including monetary and non-monetary benefits, are discussed with the selected candidate.
- A mutually agreed-upon date of joining is scheduled.

Issuance of Appointment Letter:

- If the candidate satisfies the expectations of both the Management and the respective HOD, an Appointment Letter is issued.
- The Appointment Letter, including the date of joining, is duly signed by the Director and issued through the Principal and the HR department.
- The recruitment procedure at GEMS Polytechnic College ensures that we bring in qualified and capable individuals who contribute to the institution's academic excellence and adhere to our organizational culture. Our commitment to following established norms and guidelines underscores our dedication to maintaining high standards in education.

Promotion Policies in GEMS Polytechnic College

At GEMS Polytechnic College, we place significant importance on the professional growth and development of our staff members. Our promotion policies are designed to recognize and reward employees for their dedication, educational qualifications, experience, and performance. We believe that promoting our staff is not just about recognizing their past achievements but also about encouraging their potential to assume higher responsibilities and continue contributing to our institution's growth. Here are the key aspects of our promotion policies:

Holistic Evaluation Criteria:

- Promotions in our institution are based on a holistic evaluation of staff members.
- We take into account not only their educational qualifications and experience but also their performance, dedication, and potential to assume higher responsibilities.

Experience and Performance-Based:

- Promotion and increment decisions are made by considering a staff member's experience and overall performance.
- Those who consistently demonstrate excellence in their roles and show the potential for growth are recognized and rewarded accordingly.

Annual Increments and Promotions:

- The management at GEMS Polytechnic College regularly reviews and implements annual increments and promotions in various grades.
- These increments are based on an assessment of each staff member's contributions to the institution.

Transparent Decision-Making:

- Our management takes effective and transparent decisions regarding promotions.
- The details of these decisions are shared with the concerned staff members and are incorporated into the proceedings of the meetings of the managing committee.
- This transparency ensures that staff members are aware of the institution's appraisal and action plans, promoting a culture of openness and shared goals.

Reimbursement of Professional Society Membership Fee:

- We encourage staff members to engage with professional societies by reimbursing 50% of their annual or life membership fee for one national or international professional society.
- This not only promotes professional networking but also supports continuous learning and development.

Sl.No	Name of the faculty & Designation	ISTE Life Membership Number	Total paid Amount	Reimbursement Amount
1.	Mr.Rama Gopal Challa, Principal	LM - 138376	₹3,540.00	₹1,770.00
2.	Mr.Ranjit Choudhary, Dean of Academics	LM - 138415	₹3,540.00	₹1,770.00
3.	Mr.Titus R, Sr.Lecturer / Mech	LM - 138357	₹3,540.00	₹1,770.00
4.	Mrs.Jenitha, Sr.Lecturer / CSE	LM - 138414	₹3,540.00	₹1,770.00
5.	Mr.Samuel Prakash Swami, HoD / Civil	LM - 138380	₹3,540.00	₹1,770.00
6.	Ms .Jensika rani J, Sr.Lecturer / Civil	LM - 138375	₹3,540.00	₹1,770.00
7.	Mr .R.Jabas Edwin Raj, HoD / EE	LM - 138362	₹3,540.00	₹1,770.00
8.	Mr. Ganeshbabu M, Lecturer / EE	LM - 138394	₹3,540.00	₹1,770.00
9.	Mrs. Pameela M, HoD / EEE	LM - 138384	₹3,540.00	₹1,770.00
10.	Mr. Ragunath A, Sr.Lecturer / EEE	LM - 138385	₹3,540.00	₹1,770.00
11.	Mr.Anil kolli, HoD / Mech	LM - 138363	₹3,540.00	₹1,770.00
12.	Mr.Arun Pandian P, Sr.Lecturer / Mech	LM - 138364	₹3,540.00	₹1,770.00
Total Amount Reimbursed to the Faculties				₹21,240.00

Financial Support for Novice Faculties:

Recognizing that early-career faculty members may need additional support, we provide financial assistance for registration in the National Initiative for Technical Teachers Training to faculty members with less than five years of experience.

S.NO	Academic Year	No.of Faculties	Reimbursement Amount Per Head	One time Registration Fee
1	2020 - 2021	24	₹2,000.00	₹ 48,000.00
2	2021 - 2022	3	₹2,000.00	₹ 6,000.00
3	2022 - 2023	4	₹2,000.00	₹ 8,000.00
4	2023-2024	6	₹2,000.00	₹ 12,000.00
Total Amount Reimbursed		37	₹2,000.00	₹ 74,000.00

This support helps them access resources and training that aid in their professional development. Our promotion policies at GEMS Polytechnic College are rooted in the belief that recognizing and nurturing the potential of our staff members benefits both the individuals and the institution as a whole. We are committed to fostering an environment of growth, learning, and continuous improvement, ensuring that our staff members are motivated and well-equipped to meet the evolving needs of our students and the education sector.

D. Extent of awareness among the employees/students (01)

Write Answer:

In GEMS Polytechnic College, a robust system is in place to ensure that crucial information concerning the governing body, administrative structure, functions of various bodies, defined rules and procedures, as well as recruitment and promotional policies, is effectively disseminated. The college leverages its website as a central hub for this information, making it easily accessible to all. Additionally, various meetings are held to keep employees and students informed, promoting transparency and understanding throughout the institution. This proactive approach to communication ensures that everyone within the college community remains well-informed and engaged with the institution's policies and procedures.

9.1.3 Decentralization in working and grievance redressal mechanism (5)

A. List the names of the faculty members who have been delegated powers for taking administrative decisions (02)

B. Specify the mechanism and composition of grievance redressal cell including Anti Ragging Committee & Sexual Harassment Committee (03)

Write Answer:

In an academic institution, the efficient management of administrative decisions and the establishment of effective grievance redressal mechanisms are paramount to fostering a conducive and secure environment for both faculty and students. Decentralization in working and grievance redressal mechanisms play a vital role in ensuring the well-being of all stakeholders. Here, we elaborate on the key aspects of this decentralized approach:

A. Delegation of Administrative Powers

- This institution strongly believes in recognizing the unique skills and passion possessed by its faculty members.
- As part of this belief, faculty members are provided with opportunities and empowerment to take on additional roles beyond their designated responsibilities.
- This delegation of administrative power not only acknowledges their
- specialized skills but also enables them to showcase their capabilities.

- It leads to a more dynamic and responsive administrative structure.

List of Faculty members who have been delegated powers for taking Administrative Decisions:

The details of committees along with the names of coordinators as well as the responsibilities of each committee are given below:

S..	Name of the Committee / Cell	Coordinators / Person In-charge	Functions and Responsibilities
1	Anti Ragging Committee	Mr.Anil Kolli, HoD/Mech	a. Prevent and address incidents of ragging within the institution. b. Create awareness and educate students about the consequences of ragging and the anti-ragging measures in place.
2	Women Anti-Sexual Harassment Committee	Mrs.Chinthiya, Sr.Lecturer/Civil	a. Ensure a safe and harassment-free environment for women within the institution. b. Investigate and address complaints related to sexual harassment and take appropriate actions against the offenders.
3	Purchase Committee	Mr.Arun Pandian, Sr.Lecturer/Mech	a. Manage and oversee the procurement and purchasing processes of the institution. b. Ensure transparency, fairness, and compliance with procurement policies and regulations.
4	Career Guidance And Higher Education Cell	Ms.Jensika Rani, Sr.Lecturer/Civil	a. Provide students with information and guidance on career opportunities and higher education options. b. Organize workshops, seminars, and counseling sessions to help students make informed career and education choices.
5	SC/ST Cell	Mr. David Naik, Lecturer/EEE	a. Promote the welfare and upliftment of students from Scheduled Castes (SC) and Scheduled Tribes (ST). b. Address issues related to the discrimination, harassment, and challenges faced by SC/ST students.
6	Training And Placement Cell	Ms.Jensika Rani, Sr.Lecturer/Civil Mr.Bhaskar Ranjan, Sr.Lecturer/EE	a. Facilitate job placement and internships for students. b. Collaborate with companies and industries to organize campus recruitment drives and provide career development support.

7	Institution Innovation Council (IIC)	Mr. Ragunath, Sr.Lecturer/EEE	a. Foster an entrepreneurial spirit among students. b. Provide resources, training, and mentorship to students interested in starting their own businesses.
8	Disciplinary Committee	Mr.Anil Kolli, HoD/Mech	a. Maintain discipline and order within the institution. b. Investigate and address cases of student misconduct and violations of the institution's code of conduct.
9	Grievance Redressal Cell	Mr.Anil Kolli, HoD/Mech	a. Receive and resolve grievances and complaints from students and staff. b. Ensure that concerns and issues raised by members of the institution are addressed in a fair and timely manner.
10	Examination Cell	Mr.Sumit Kumar, COE	a. Organize and manage the examination and assessment processes. b. Ensure the integrity, security, and fairness of the examination system.
11	Library Advisory Committee	Mr.Titus, Sr.Lecturer/Mech	a. Advise on the development and improvement of library resources and services. b. Recommend acquisitions, subscriptions, and policies related to the library.
12	Alumni Association Cell	Mr.Bhaskar Ranjan, Sr.Lecturer/EE	a. Maintain connections with alumni and engage them in the institution's activities. b. Organize alumni events, networking opportunities, and fundraising initiatives.
13	Admission Committee	Mr.Ranjit Choudhary, Dean of Academics	a. Oversee the admission process for new students. b. Establish admission criteria and ensure a fair and transparent admission system.
14	Hostel Committee	Mr.Arun Pandian, Sr.Lecturer/Mech	a. Manage and maintain the hostel facilities for students. b. Address issues related to hostel accommodation, safety, and amenities.
15	Sports Committee	MrAnugrah Ashish, Lecturer/ EE Mrs.Kalpana Pandey, Librarian	a. Promote sports and physical activities within the institution. b. Organize sports events, competitions, and support student athletes.
16	Morphosis - Tech Fest Committee	Mr. Ganeshbabu M Lecturer/EE Mr.Sudhir Kumar, Lecturer/MECH	a. Plan and organize the institution's tech fest or similar events. b. Coordinate activities, competitions, and workshops related to technology and innovation during the fest.

B. Grievance Redressal Mechanisms

Grievance Redressal Committee:

Composition:

- The Grievance Redressal Committee is composed of the Principal, Head of Departments, and staff members, creating a diverse group to address various concerns.
- Grievance Redressal Committee in the Institute and Appointment of OMBUDSMAN by the Committee. As per All India Council for Technical Education (Establishment of Mechanism for Grievance redressal) Regulations, 2012, F. No. 37-3/Lega112012, dated 25.05.2012).

Composition of Grievance Redressal Committee:

S. No.	Name	Designation	Position
1	Mr. Rama Gopal Challa	Principal	Chairman
2	Mr. Sandy William	Advocate Ms.1325/2014	OMBUDSMAN
3	Mr. Anil Kolli	HOD / Mech	Convener
4	Mr. Ranjit Choudhary	Dean of Academics	Member
5	Mr. Sumit Kumar Singh	Sr.Lecturer / EEE	Member
6	Mr. Robin	HR	Member

Mechanism:

- The committee analyzes all grievances and suggestions submitted through the suggestion box.
- It strictly adheres to the guidelines provided by AICTE (All India Council for Technical Education).
- Regular meetings are conducted to ensure that grievances raised are addressed in a timely and effective manner, fostering an environment of continuous improvement.

Anti-Ragging Committee:**Composition:**

- The Anti-Ragging Committee is headed by the Principal and consists of dedicated members.
- Anti-Ragging Committee as per All India Council for Technical Education notified regulation for prevention and prohibition of ragging in AICTE approved technical institutions vide No. 37-3/Legal/AICTE/2009 dated 01.07.2009.

Composition of Anti-ragging Committee:

S. No.	Name	Designation	Position
1	Mr. Rama Gopal Challa	Principal	Chairman
2	Mr. Anil Kolli	HOD - Mech	Coordinator
3	Mr. Ranjit Choudhary	Dean of Academics	Member
4	Mr. Arun Pandian	Sr. Lecturer/Mech	Member
5	Mrs. Pameela M	HOD - EEE	Member

Mechanism:

- The institution collects undertaking forms from all students and parents/guardians at the time of admission.
- The contact details of committee members are readily available in various places, including the Handbook, Display Boards, and the institution's website.
- To ensure a safe and ragging-free environment, an Anti-Ragging squad will form, which conducts regular inspections in different areas like food courts, bus stops, restrooms, hostels, and vehicle stands.
- The presence of CCTV cameras in strategic locations adds an extra layer of security by monitoring and deterring ragging activities.

Women Anti-Sexual Harassment Cell:**Composition:**

- This cell is led by senior women faculty members who serve as presiding members and mentors.

Composition of Women Anti-sexual Harassment Cell:

S.No.	Name	Designation	Position	Mobile Number
1	Mr. Rama Gopal Challa	Principal	Chairman	8340231074
2	Mrs.Chinthiya	Sr.Lecturer/Civil	Coordinator	9487618832
3	Mr. Ranjit Choudhary	Dean of Academics	Member	8124517713
4	Mrs.Kalpna Pandey	Librarian	Member	9304240631
5	Mrs.Catharine	Lecturer / EE	Member	7010065904

Mechanism:

- The Women Anti-Sexual Harassment Cell plays a pivotal role in ensuring a safe and inclusive environment.
- It actively promotes awareness and follows the guidelines prescribed by AICTE.
- Any student or staff member who experiences harassment can approach this committee at any time.
- Immediate and strict corrective measures are undertaken to address the issue.
- The cell also conducts awareness campaigns through meetings to encourage reporting against any form of suppression, thereby empowering individuals to stand up against harassment.

In conclusion, decentralization in administrative decision-making and the existence of robust grievance redressal mechanisms, including Anti-Ragging and Anti-Sexual Harassment Committees, ensure that the institution operates smoothly, promoting a safe and inclusive environment for all its members. This approach empowers faculty members to contribute their unique skills and capabilities, while also providing a responsive system for grievance redressal and safety.

9.1.4 Delegation of Financial Powers (5):

At our college, we uphold the principles of democratic and decentralized administration, fostering a culture of shared responsibility and active participation in decision-making. To achieve this, we have established various committees aimed at ensuring effective governance and nurturing leadership qualities among our esteemed staff members.

These committees play a pivotal role in our institution, as they are entrusted with the authority to make financial decisions within their respective domains. This delegation of financial powers is not merely an administrative choice but a strategic move that has yielded significant benefits for our college community:

Enhanced Involvement:

- Delegating financial powers to various committees has created a sense of ownership and involvement among our faculty members.
- They have a direct say in how resources are allocated and utilized, which strengthens their connection to the institution.

Speed and Efficiency:

- By distributing financial authority, we have streamlined our administrative processes.
- This decentralization ensures quicker responses to financial matters, leading to more agile and efficient administration.

Effective Governance:

- Our committees, equipped with delegated financial powers, are better equipped to address the unique needs and challenges within their domains.
- This tailored approach to decision-making contributes to the effective governance of our college.

S.No.	Designation	Particulars Limit to Sanction	Limit to Sanction upto
1	Principal	Procurement of Equipments, Service Maintenance and promotion of academic Development activities.	Below Rs.1 Lakh
2	HoDs	Procurement of laboratory Consumables, Stationeries, Service and Maintenance	Below Rs.10,000/-
3	Coordinators	To spend for their committee activities	Rs.5,000/-

In essence, our commitment to delegation of financial powers aligns with our broader vision of fostering a collaborative and accountable community. It empowers our faculty members to shape the future of our institution while ensuring that financial decisions are made swiftly and effectively.

We believe that this democratic and decentralized approach not only serves our college's interests but also enriches the professional development of our staff members, creating a stronger and more resilient educational environment.

9.1.5 Transparency and availability of correct/unambiguous information in public domain (5):

At GEMS Polytechnic College, we are dedicated to ensuring transparency, clarity, and accuracy of information provided to our stakeholders. To achieve this, we employ various channels to disseminate important information and maintain an open line of communication:

College Website:

- We utilize our college website to share information related to institutional policies, rules, and various processes.
- This platform serves as a central hub for accessing essential information, promoting transparency in our operations.

Notice Boards:

- Our notice boards, strategically located at the main entrance, department corridors, and classrooms, serve as physical sources of information.
- We use these boards to communicate proposed activities to both staff and students, ensuring that everyone is informed.

Orientation Programs:

- During orientation programs, we provide detailed information about various institutional and departmental activities.
- This comprehensive overview helps newcomers become familiar with our institution's offerings.

SBTE Board Circulars:

- We maintain an official WhatsApp group and utilize official email IDs to share SBTE Board Circulars with our students.
- This ensures that critical updates and announcements reach students promptly.

Academic Calendar:

- Our academic calendar includes essential dates such as examination schedules, holidays, and events.

- It is circulated to all students and staff members, facilitating effective planning and utilization of facilities.

Transparency in Assessment:

- After each internal assessment test, we return corrected answer scripts to students.
- This practice promotes transparency and allows students to seek clarification in the evaluation process.

Department Newsletters:

- Our department newsletters, published once per semester, provide insights into departmental activities.
- This information is also available on the department's dedicated page on the college's official website.

AICTE Approval and SBTE Affiliation:

- As a college approved by AICTE, New Delhi, and affiliated with SBTE, Bihar, we make all relevant information and approval letters accessible on our website.
- This ensures that our stakeholders have easy access to the details of our affiliations and approvals.

We believe that by maintaining transparency and making information readily available, we empower our stakeholders to make informed decisions, participate actively in our institution's activities, and contribute to our collective growth and success.

9.2 Budget Allocation, Utilization, and Public Accounting at Institute level (10)

Summary of current financial year's budget and actual expenditure incurred (for the institution exclusively) in the three previous financial years:

Table 1 - CFYm1 2022-23			
INCOME		Actual expenditure	
Fee	₹61,329,583.00	Recurring including salaries	₹37,301,451.00
Govt.	₹0.00	Non Recurring	₹5,324,015.00
Grants	₹0.00	Special Projects/Another, specify	₹0.00
Other Sources	₹0.00		
Total Income	₹61,329,583.00	Total Expenditure	₹42,625,466.00
Total No. of Students			489

Table 2 - CFYm2 2021-22			
INCOME		Actual expenditure	
Fee	₹28,146,510.00	Recurring including salaries	₹30,899,976.00
Govt.	₹0.00	Non Recurring	₹4,658,132.00
Grants	₹0.00	Special Projects/Another, specify	₹0.00
Other Sources	₹0.00		
Total Income	₹28,146,510.00	Total Expenditure	₹35,558,108.00
Total No. of Students			507

Table 3 - CFYm3 2020-21			
INCOME		Actual expenditure	
Fee	₹19,270,917.00	Recurring including salaries	₹17,262,183.00
Govt.	₹0.00	Non Recurring	₹1,968,603.00
Grants	₹0.00	Special Projects/Another, specify	₹0.00
Other Sources	₹0.00		
Total Income	₹19,270,917.00	Total Expenditure	₹19,230,786.00
Total No. of Students			438

Table 4 - CFYm4 2019-20			
INCOME		Actual expenditure	
Fee	₹29,780,944.00	Recurring including salaries	₹19,295,842.00
Govt.	₹382,418.00	Non Recurring	₹4,104,805.00
Grants	₹0.00	Special Projects/Another, specify	₹0.00
Other Sources	₹0.00		
Total Income	₹30,163,362.00	Total Expenditure	₹23,400,647.00
Total No. of Students			348

9.2.1 Adequacy of Budget Allocation (4):

At our institution, the allocation of funds is a meticulous process that aligns with the availability of financial resources. These funds are disbursed in accordance with the approved budget, and their utilization is closely monitored by our dedicated accounts section. We take pride in ensuring that our budget allocations meet the needs of both individual departments and the institution as a whole.

Our institution's budget allocation procedure follows a well-defined framework:

Annual Budget Preparation:

- The process begins in February/March each year, in anticipation of the upcoming academic year starting in June.
- Heads of departments, in collaboration with various offices, work under the guidance of the Principal to formulate budgets that cater to the specific requirements of each department.

Comprehensive Coverage:

- The budget encompasses all functional departments within the institution, including academic departments, placement services, accounts, library, purchase, hostel management, physical education, IT system administration, transportation, and maintenance.
- This comprehensive approach ensures that no critical area is overlooked.

Scrutiny and Consideration:

- The projections provided by individual departments are subjected to rigorous scrutiny and assessment, forming the basis for the institution-level budget.

- This thorough evaluation process guarantees that each department's essential needs are addressed.

Governing Council Approval:

- The consolidated budget, reflecting the needs and priorities of the entire institution, is presented to our Governing Council for approval.
- This step ensures transparency and accountability in the budgeting process.

Release of Budget:

- Upon approval by the Governing Council, the budget is officially released for utilization through our main finance office.
- This allows departments to access the allocated funds as needed.

In addition to the annual budget, we have mechanisms in place to accommodate additional allocations in special cases that may arise during the year. Our institution places a strong emphasis on responsible financial management to ensure that essential requirements are met without disruption to the smooth operation of the institution.

From the very inception of our college, the management has consistently demonstrated its commitment to providing an adequate budget that supports our educational mission and enables us to offer a high-quality learning environment. We take pride in the transparency, diligence, and responsibility with which we handle our budget allocation process.

9.2.2 Utilization of allocated funds (4):

Our institution places great importance on the responsible and efficient utilization of allocated funds to ensure that resources are effectively managed to support our academic and operational needs.

Here's how we manage the utilization of allocated funds:

Empowered Department Heads:

- Each department head is granted the authority to utilize the approved budget as projected by their respective departments, as and when required within the academic year.
- This decentralization of financial responsibility allows for greater flexibility in addressing department-specific needs.

Administrative Oversight:

- The allocation of funds is overseen by the administrative team, led by the Principal.
- These funds are disbursed and managed by the Principal and the Heads of the Departments in accordance with the approved allocation.
- In cases where additional funds are needed beyond the budgeted amount, such requests are subject to approval by the Chairman as necessary.

Initiating Procurement:

- Actions related to procurement of laboratory equipment, the enhancement of existing lab facilities, and the purchase of consumables are initiated by the respective department heads.

- Upon approval by the Principal, funds are released from the central finance office to facilitate these essential activities.

Diverse Expense Categories:

- Over the past three years, our budget has been thoughtfully utilized to cover various expenses, including staff salaries, infrastructure development, equipment purchases, consumables, contingencies, and travel, among others.
- This diverse allocation ensures that all aspects of our institution's functioning are adequately funded.

Financial Oversight:

- To maintain transparency and adherence to financial delegation guidelines, the utilization of the budget is closely monitored by the Purchase and Accounts Departments.
- These departments verify the proper allocation of funds during procurement and payment processes, ensuring compliance with established financial protocols.

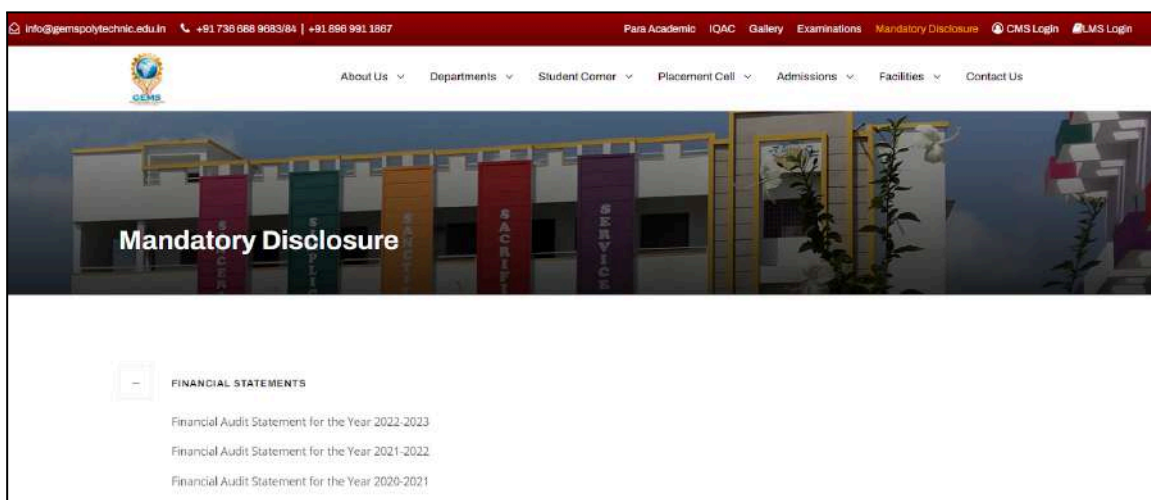
By implementing these comprehensive measures, we strive to ensure that allocated funds are utilized efficiently and effectively, aligning with the institution's goals and objectives. Our commitment to responsible financial management and accountability is unwavering, as we continuously work to enhance the educational experience and infrastructure at our institution.

9.2.3 Availability of the audited statements on the institute's website (2):

At GEMS Polytechnic College, transparency and accountability are of utmost importance to us.

As part of our commitment to open and honest financial practices, we make the audited statements of accounts for our institution readily accessible on the College website.

This initiative ensures that our stakeholders, including students, faculty, parents, and the broader community, have easy access to crucial financial information, promoting trust and transparency in our operations



9.3 Department Specific Budget Allocation, Utilization (5)

Table 1 - CFYm1 2022-23			
Budget		Actual expenditure	
Non Recurring	₹4200.00	Non Recurring	₹1400.00
Recurring	₹99004.00	Recurring	₹82807.00
Total Budget	₹103204.00	Total Expenditure	₹84207.00
Table 2 - CFYm2 2021-22			
Budget		Actual expenditure	
Non Recurring	₹86598.00	Non Recurring	₹82773.00
Recurring	₹99559.00	Recurring	₹53108.00
Total Budget	₹186157.00	Total Expenditure	₹135881.00
Table 3 - CFYm3 2020-21			
Budget		Actual expenditure	
Non Recurring	₹2000.00	Non Recurring	₹1000.00
Recurring	₹117870.00	Recurring	₹67770.00
Total Budget	₹119870.00	Total Expenditure	₹68770.00

9.3.1 Adequacy of Budget Allocation (2)

(In this section, the institution needs to justify that the budget allocated over the assessment years was adequate)

The allocation of funds for the **Department of Electrical Engineering** is a critical aspect of ensuring the smooth operation of academic activities and the enhancement of the learning environment. The institution justifies the adequacy of budget allocation through a well-structured process:

Budget Proposal Alignment:

- The budget allocation aligns with the Department Proposed Budget. The allocated funds are judiciously spent to cover various expenses, and this spending is meticulously monitored by the Budget Incharge of the department.

Incorporating Stakeholder Input:

- The department collects projections from individuals, laboratory in-charges, and faculty members.
- These inputs are thoroughly scrutinized and considered when formulating the department's budget.

Curriculum-Driven Equipment Allocation:

- Additional equipment and consumables required for laboratory facilities are considered based on curriculum revisions.
- The appropriate budget is allocated to ensure that students have access to up-to-date equipment and resources.

Planning for Academic Year:

- Programs and events for the entire academic year are meticulously planned, and detailed budgets are forecasted to support their successful execution.

Flexibility for Additional Expenditure:

- The budget also accounts for unforeseen additional expenses that may arise during the year.
- This ensures that the department has the necessary resources to address unexpected needs.

Approval Process:

- The finalized budget is submitted to the principal through the Overall Budget Coordinator for final approval.
- This process ensures transparency and accountability in budget allocation.

Supplemental Allocations:

- In cases where the allocated budget may prove insufficient, additional allocations are made to address special requirements, thereby ensuring that the department can effectively meet its goals.

9.3.2 Utilization of allocated funds (3)

(In this section, the institution needs to state how the budget was utilized during the last three assessment years)

The efficient utilization of allocated funds is of paramount importance to deliver quality education and maintain high standards in the Department of Computer Science & Engineering. The institution demonstrates how funds were utilized during the last three assessment years:

Lab Equipment Procurement:

- A significant portion of the allocated funds is utilized for the procurement of laboratory equipment.
- This ensures that students have access to state-of-the-art tools and technology for their practical education.

Upgradation of Lab Facilities:

- Funds are allocated for the upgradation of existing lab facilities to ensure that the infrastructure remains modern and conducive to effective learning.

Consumables Purchase:

- The budget is used to purchase consumables necessary for the day-to-day functioning of laboratories, guaranteeing that students have access to the materials they need.

Academic Events:

- Funds are utilized for conducting various academic events such as seminars, workshops, conferences, symposiums, and other educational programs.
- The utilization of funds for these events requires prior approval by the Principal to maintain financial transparency.

Variance Monitoring:

- As the budgets are derived from individual laboratory levels and consolidated to form the department's budget, the variance between the budget and utilization is kept to a minimum.
- Any increase in expenditure is closely monitored, and control measures are taken to stay within budget limits.

Prior Approval for Unbudgeted Expenses:

- Any unbudgeted expenses require prior approval from the management before spending, ensuring that funds are used judiciously and in alignment with the department's goals.

Detailed Utilization Reports:

- The department maintains detailed utilization reports to track the expenditure of allocated funds. These reports provide transparency and accountability in the utilization of funds.

In conclusion, the Department of Computer Science & Engineering at GEMS Polytechnic College follows a meticulous process for budget allocation and utilization, ensuring that funds are allocated based on needs, transparently spent, and effectively utilized to provide quality education and support academic endeavors. This commitment to financial accountability and excellence contributes to the department's continued success.

Utilization reports for the current year and previous years are maintained and are available for reference.

Financial Year	Budget Proposed in Rs.	Budget Sanctioned In Rs.	Actual Expenditure in Rs.	Percentage of Utilization
2022-2023	₹272200.00	₹272200.00	₹1,052,515.00	70.9%
2021-2022	₹103204.00	₹103204.00	₹84207.00	81.5%
2020-2021	₹186157.0	₹186157.0	₹135881.00	73%
2019-2020	₹388,475.00	₹388,475.00	₹344,930.00	97.90%

9.4 Library and Internet (20):

9.4.1 Quality of learning resources (hard/soft) (10):

- A. Availability of relevant learning resources including e-resources and Digital Library (7)
- B. Accessibility to students (3)

Library Network & Automation:

- At GEMS Polytechnic College, our commitment to enhancing the learning experience extends to our library facilities.
- We are proud to announce that our central library is fully automated, thanks to the integration of Cloud-based Campus Management software known as VMEDULIFE.

Here's how this automation benefits our students and faculty:

Effortless Access:

- With VMEDULIFE, both students and faculty members gain convenient access to their library-related information.
- This includes details such as book issuance, returns, due dates, and fine information.
- You can access these details effortlessly through the VMEDULIFE mobile app or the computer system, using your personal login credentials.

Online Public Access Catalog (OPAC):

- We provide an Online Public Access Catalog (OPAC) service that allows easy searching and retrieval of library resources.
- This service is accessible to both faculty and students through the VMEDULIFE platform.
- Additionally, you can access the OPAC service directly via this link: <https://portal.vmedulife.com/public/library/#/gems-polytechnic-Pitampura>
- We believe that this automation not only simplifies library management but also empowers our academic community with efficient and user-friendly tools for academic success. Explore the world of knowledge at GEMS Polytechnic College through our automated library network powered by VMEDULIFE.

Availability of relevant learning resources including e-resources and Digital Library:

At GEMS Polytechnic College, we take pride in offering a comprehensive array of learning resources in our central library, catering to the diverse needs of our students and faculty. Here's a glimpse of what you can find:

1	Text Books for Circulation:	Our collection of textbooks covers a wide range of subjects, available for borrowing by students. These books provide the core material needed for academic coursework.
2	Reference Books (Not for Circulation):	In addition to textbooks, we have an extensive collection of reference materials that include encyclopedias, dictionaries, and specialized reference books. These resources are for in-library use and provide valuable insights for research and reference.
3	Student Project Reports (Not for Circulation):	Past student project reports are available for reference, providing a valuable resource for those seeking inspiration or guidance in their own projects.
4	International / National Journals:	Our library subscribes to a variety of international and national journals, offering the latest research and insights in various fields. These journals are essential for staying updated in your area of study.
5	Competitive Exam Books:	We have a dedicated section with books and study materials to help students prepare for competitive exams, enabling them to excel in various entrance tests and competitive assessments.
6	Non-Fiction Storybooks:	Our collection includes non-fiction books that cover a wide range of subjects, providing an opportunity for leisure reading and broadening your knowledge horizons.
7	Dictionary and Encyclopedia:	Access to dictionaries and encyclopedias to aid in research, reference, and language improvement.
8	Daily Newspapers	Stay informed about current events, trends, and developments with daily newspapers available in the library.

Digital Library:	
Availability of digital library content :	Yes
Availability of an exclusive server :	Yes
Availability over Intranet/Internet :	Yes
Availability of exclusive space/room :	Yes
Number of users per day :	25
E-books Availability:	Yes
NPTEL resources.	Available

Accessibility to students:

- At GEMS Polytechnic College, we prioritize students' accessibility to knowledge and resources. We are dedicated to fostering an environment where students can access the resources they need to excel in their academic pursuits and personal development.

Here's how our central library ensures a conducive environment for learning:

Library Hours:

Monday to Friday: 9:00 a.m. to 4:40 p.m.

Saturday: 9:00 a.m. to 3:30 p.m.

Sunday and Government Holidays: Closed

Stay Informed:

- Keep abreast of current events with our daily newspaper subscriptions, available in both Hindi and English.

Academic Resources:

- Our library subscribes to academic journals at regular intervals, providing students with access to the latest research and scholarly publications.
- Efficiently locate books and resources using our user-friendly Library Online Public Access Catalog (OPAC).

Exam Preparation:

- We offer a comprehensive collection of books specifically tailored to assist students in their program-wise competitive examinations and civil service exam preparation.

Reprography Facility:

- To further support your academic endeavors, we provide a reprography facility within the library.
- Students can easily obtain photocopies of non-copyrighted materials at a minimal cost.

NDLI Club Initiatives:

- GEMS Polytechnic College's NDLI Club (Registration Number: INBRNC3K4TTETNZ) organizes diverse student-centric events, including reading sessions, essay competitions, spell bees, poster and model presentations, and engaging quizzes, aimed at fostering holistic student development.
- As part of the GPC-NDLI Club, we organize a range of events and competitions to empower and enrich the student community.
- GEMS Polytechnic College earns recognition as one of Bihar, India's top-performing NDLI Clubs. Exceptional achievement in educational endeavors acknowledged.



9.4.2 Internet (10):

Name of the Internet provider	<ul style="list-style-type: none"> ● ISHAN (Primary), ● BIG-DATA (Secondary)
Available bandwidth	<ul style="list-style-type: none"> ● 50Mbps (Primary), ● 40Mbps (Secondary)
WiFi availability	<ul style="list-style-type: none"> ● Main Block Ground Floor Lobby and ● 2nd Floor Lobby with Indoor Access Points. ● Hostel Block with an Outdoor Access Point.
Internet access in labs, classrooms, library and offices of all Departments	<ul style="list-style-type: none"> ● Smart boards in classrooms, ● Labs with computers, ● Department libraries ● Central Library, and ● Office. ● They are connected with a wired network through managed and unmanaged network switches.
Security arrangements	<ul style="list-style-type: none"> ● Wijungle - Unified Network Security Gateway with an active subscription till October 2026

9.5 Institutional Contribution to the Community Development (5):

At GEMS Polytechnic College, we are deeply committed to fostering community development and giving back to society. Our institutional efforts in this regard are coordinated through the GPC Community Development Cell, which plays a pivotal role in organizing various programs and initiatives aimed at enhancing the well-being of the community. Some of our significant contributions include:

1. Medical Camps:

- Our students and staff members actively participate in organizing medical camps to provide essential healthcare services to the underprivileged and marginalized sections of the community.

2. Tree Plantation:

- We believe in the significance of environmental sustainability and undertake tree plantation drives to contribute to a greener and healthier environment.

3. Basic Education for Village School Students:

- We take pride in extending our educational resources to nearby village school students, offering them basic education and opportunities for personal growth.

4. Teaching Moral and Ethical Values:

- Our commitment to holistic development extends to teaching moral and ethical values to the students of nearby village schools, instilling important life lessons.

5. Computer Systems Awareness and Training:

- In today's digital age, computer literacy is crucial. We provide awareness and basic training on computer systems to students in neighboring village schools to empower them with technological skills.

6. Road Safety Awareness:

- Promoting road safety is a priority. Our road safety awareness programs aim to educate the community on safe and responsible road practices.

National Service Scheme (NSS):

The National Service Scheme is an integral part of our commitment to community development. It serves as a platform for students to actively contribute their services for the betterment of the community and the nation while nurturing a sense of social responsibility. Some of the notable NSS programs organized and implemented include:

1. Basic Technical Training for Rural Youths:

- We empower rural youths with essential technical skills through specialized training programs, equipping them for better employment opportunities.

2. Road Safety Awareness Programs:

- Our efforts to promote road safety extend to NSS initiatives, aiming to create awareness and reduce road accidents.

3. Medical Camps:

- In line with our overall mission, medical camps are organized by NSS to provide healthcare services and support to those in need.

4. Tree Plantation:

- Our commitment to environmental sustainability is further exemplified by tree plantation activities conducted under the NSS banner.

NSS PROGRAM SUMMARY DETAILS					
S.No	Name of the Activity	Date	Place	No.of GPC Students/Volunters Participated	Beneficiaries (No.of People benefitted & Place)
1	NSS Inaugural	22/4/22	GPC Auditorium	Mr. Piyush Pranjape, Regional Director, Ministry of Youth & Sports Affairs, Government of India,	100
2	AWARENESS PROGRAM ON NSS DAY AND ENVIRONMENT DAY.	09 -09 -2022	Jogiya High School Aurangabad Bihar	Mr. Arun Mukhiya Tengra Panhayat Aurangabad Bihar	JOGIYA
3	Girl's Protection Nation's Pride	13/2/23	Government Middle Middle School Jogiya	Ms . Kanti Verma Lecturer CSE GEMS Polytechnic College	50
4	Free Health Awareness & Medical Camp	5/4/23	PitamPur Aurangabad Bihar	Mrs. Roja, Senior Nurse, GEMS Polytechnic College,	75
5	MERI LIFE- ONE STUDENT ONE TREE	8/8/2023	GPC Campus	Principal, GEMS Polytechnic College and All Dept. HODs.	55
6	Free Health Awareness & Medical Camp	11/8/2023	Tiwari Bigha	Mrs. Roja, Senior Nurse, GEMS Polytechnic College,	127
7	Free Health Awareness & Medical Camp	8/9/2023	Deohara	Mrs. Roja, Senior Nurse, GEMS Polytechnic College,	61

8	Free Health Awareness & Medical Camp	26 -10- 2023	JAGDISH PUR	Students - 5 members Staff- 17 members	140
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NATIONAL SERVICE SCHEME (NSS) - ACTIVITIES

In the past years, GEMS Polytechnic College has been bustling with impactful NSS activities. From environmental clean-up drives to health awareness campaigns, our students have been actively engaged. With a spirit of service and dedication, we've left a positive mark on our community. Join us as we continue to make a difference in the years to come!



NSS Inaugration on 22th April 2022



NSS Rally at Jogiya on 9th Sep 2022



Girl's Protection Nation's Pride at Jogiya School on 13th Feb 2023



Free Health Awareness & Medical Camp at Pritampur on 5th April 2023



Meri Life : One Student one Plant on 8th August 2023





Meri Life : One Student one Plant on 8th August 2023

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NATIONAL SERVICE SCHEME (NSS) - ACTIVITIES

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NSS Volunteers are conducting Nukkad Drama in Village to raise awareness about environmental conservation.



Mr. Arun, the Panchayat Mukhiya of Tengra, is addressing villagers during an NSS program.



Celebrating Republic Day 2024



2 students from GPC Participated 10 Days Adventure Camp at Hatkoti Himachal Pradesh 30th Dec 2023 to 8th Jan 2024



Free General Medical Camp at Pritampur on 22nd February 2024



Free General Medical Camp at Pritampur on 22nd February 2024



Free General Medical Camp at Pritampur on 22nd February 2024

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At GEMS Polytechnic College, we believe that our institutional contributions to community development are not just a duty but a heartfelt commitment to creating a more equitable and responsible society. Through these programs, we aim to enhance the

standard of living, promote dignity, and nurture responsible citizens who actively participate in the betterment of our nation.

9.6 Alumni Performance and Connect (10):

At GEMS Polytechnic College, we value the continued association and contributions of our alumni. Here's how we foster a strong bond with our alumni and leverage their experiences for the betterment of our institution and students:

Alumni Association:

- The GEMS Polytechnic College Alumni Association has been established, and all former students are members of this association.
- The Alumni Association of GEMS Polytechnic College was officially registered with the government, bearing registration number **T-3532/24**.
- This association serves as a platform to cultivate a sense of belonging and unity among our alumni, encouraging them to excel in their respective fields.

Alumni Association Constitution:

Sl.No	Role	Name of the Members	Designation
1.	President	Mr. Rama Gopal Challa	Principal
2.	Vice President	Mr. Ranjith Choudary	Dean of Academics
3.	Secretary	Ms. Jensika Rani	Sr.Lecturer/ CIVIL
4.	Treasurer	Mr. Robin	Sr.Lecturer/ EEE
5.	Committee Chair	All Dept. HoDs	
6.	Event Coordinator	Mr. Ganesh / Mrs. Catharine	Lecturer/ EE
7.	Membership Coordinator	Mr. Bhaskar Ranjan	Lecturer/ EE
	Communication Coordinators	All Department Incharges	
8.	Department Incharge	Mr. Daniel Swami	Lecturer/ CIVIL
9.		Mrs. Catharine	Lecturer/ EE
10.		Mr. Ketu kumar	Lecturer/ EEE
11.		Ms. Priyanka	Lecturer/ CSE
12.		Mr. Sudhir Kumar	Sr.Lecturer/ MECH

Annual Alumni Meetings:

- Each academic year, we organize meetings to engage with our alumni.

- This forum allows them to share their valuable insights and perspectives, contributing to the institution's growth and development.

Infrastructure Enhancement:

- We take alumni feedback seriously, using it to guide our efforts in improving the infrastructure of our institution.
- Their input helps us create a better learning environment for current and future students.

Guest Lectures:

- Our commitment to holistic education extends to involving alumni in giving lectures to our students.
- These sessions aim to improve students' attitudes, provide real-world insights, and inspire them through alumni success stories.

The strong connection between our institution and our alumni network is a testament to the lasting impact of a GEMS Polytechnic College education. We cherish our alumni's accomplishments and continue to draw upon their expertise to shape the future of our students and our institution,

GEMS POLYTECHNIC COLLEGE



DEPARTMENT OF ELECTRICAL ENGINEERING

NOTABLE ALUMNI



Chandradeep Kumar
Batch-2015-2018
Designation-Skilled Technician
Company Name-QCON(Qatar Engineering & Construction Company), QATAR



Mayank Pandey
Batch-2016-2019
Designation-Jr.Engineer
Company Name-Suzlon Energy Limited/ Gujarat



AKASH KUMAR
Batch-2016-2019
Designation- Quality Engineer
Company Name- General Electric(GE)/ Gujarat



Shatakshi Singh Raihaur
Batch-2017-2020
Designation- Software Developer
Company Name- IntelliPaat Software Solutions Pvt.Ltd



Pritam Kumar
Batch-2017-2020
Designation- Jr. Engineer
Company Name- Suzlon Energy Limited/ Gujarat



Ayush Sourabh
Batch-2018-2021
Designation- Jr. Engineer
Company Name- Suzlon Energy Limited/ Gujarat



Vilash Kumar
Batch-2019-2022
Designation- Junior Production Executive
Company Name-TOYODA GOSEI SOUTH INDIA PRIVATE LIMITED



Sheshpal Kumar
Batch-2020-2023
Designation- DET
Company Name-APOLLO TYRES PVT. LTD. , AP



Avinash Kumar
Batch-2015-2018
Designation-Skilled Technician
Company Name-QCON, QATAR



Abhishek kumar
Batch-2020-2023
Designation-DET
Company Name-APOLLO TYRES PVT. LTD , AP



AKASH KUMAR
Batch-2017-2020
Designation-Gandhi fellow
Company Name- Pivamal Foundation



DEEPAK KUMAR
Batch-2017-2020
Designation- Enginee
Company Name- V5 global services private limited



PUNIT KUMAR
Batch-2017-2020
Designation- DET
Company Name- Windcare india pvt ltd



ABHAYANAND RUMAR
Batch-2015-2018
Designation- KYP CO-ORDINATOR
Company Name- BSDM DEHARI



MANISH KR SINGH
Batch-2020-2023
Designation- DET
Company Name- MANDO



KRISHNA KR GUPTA
Batch-2020-2023
Designation- DET
Company Name- MAHLE THERMAL

Part C

Declaration by the Institution



GEMS POLYTECHNIC COLLEGE

(Approved by AICTE, Govt. of India, F. No. Northern/2015/I-2474317051)

Affiliated to SBTE, Bihar
ISO Certified 9001:2015

S. Ashish Daniel
Secretary & Director

C. Rama Gopal
Principal

Declaration

I undertake that, the institution is well aware about the provisions in the NBA's accreditation manual concerned for this application, rules, regulations, notifications and NBA expert visit guidelines in force as on date and the institutes shall fully abide by them.

It is submitted that the information provided in this Self Assessment Report is factually correct.

I understand and agree that an appropriate disciplinary action against the Institute will be initiated by the NBA. In case, any false statement/information is observed during pre-visit, visit, postvisit and subsequent to grant of accreditation.

Date : 19/04/2024
Place : Aurangabad, Bihar

Head of the Institute
Name : Rama Gopal Challa
Designation: Principal

Signature : *Rama Gopal*
PRINCIPAL 19/04/2024
GEMS Polytechnic College
Ratanpura, Aurangabad
Bihar-824121

Seal of the Institution :



NH - 2, Joglya More, Ratanpura, Aurangabad, Bihar - 824121
Website: www.gemspolytechnic.edu.in E-mail: polytechnic@gemsbihar.org
07070066877, 7366889683, 7366889684

Annexure 1

Program Outcomes and Program-Specific Outcomes

PROGRAM OUTCOMES (POs)

PO1. Basic and Discipline-specific knowledge:

Apply knowledge of basic mathematics, science and engineering fundamentals and engineering specialization to solve the engineering problems.

PO2. Problem analysis:

Identify and analyze well-defined engineering problems using codified standard methods.

PO3. Design/ development of solutions:

Design solutions for well-defined technical problems and assist with the design of systems components or processes to meet specified needs.

PO4. Engineering Tools, Experimentation and Testing:

Apply modern engineering tools and appropriate techniques to conduct standard tests and measurements.

PO5. Engineering Practices for society, sustainability and the environment:

Apply appropriate technology in the context of society, sustainability, environment and ethical practices.

PO6. Project Management:

Use engineering management principles individually, as a team member or a leader to manage projects and effectively communicate about well-defined engineering activities.

PO7. Life-long learning:

Ability to analyze individual needs and engage in updating in the context of technological changes.

PROGRAM SPECIFIC OUTCOMES

PSO1: To employ the basic concept of applied science in developing electrical machines for discrete applications and services.

PSO2: To Understand the concept of generation , transmission, distribution, utilization of electrical energy and solar systems to solve technical problems of the society.

PSO3: To design and estimate the electrical cost and material requirements for services like residential building,workshop,Laboratory in such wise.



Empowering to Excel

Contact:

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