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 AND ELECTRONICS ENGINEERING

SELF ASSESSMENT REPORT (SAR)

Academic Year 2023-2024

Diploma Engineering Program

First Time Accreditation

Submitted to

NATIONAL BOARD OF ACCREDITATION

New Delhi

Self Assessment Report Contents

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:	● University ● Deemed University ● **Affiliated** ● Autonomous ● Any Other(Please Specify)
5.	Ownership Status:	● 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 ELECTRICAL AND 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 AND 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 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 & 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

Engineering and Technology- Diploma Shift-1:

Engineering and Technology- Diploma Shift-1	**2023-24**		**2022-23**		**2021-22**		**2020-21**	
Items	**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

9. Total number of Students:

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

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 VISION, MISSION AND PROGRAM EDUCATIONAL OBJECTIVES (50)

1.1 State the Vision and Mission of the Department and Institution (5)

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

- ★ 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 emotional social

Vision of the Department

*To be a forerunner in producing **Electrical and Electronics graduates** who will be competent in innovations among federal Institutions, be a **dynamite entrepreneur**, and a **skilled representative** to complement in industry with ethical values to address the **needs of the Society and Nation.***

Mission of the Department

- ★ To provide academic excellence by adopting innovative teaching and learning methods to enhance lifelong learning.
- ★ To bridge the gap between the industry and academia by undertaking collaborative projects from industry.
- ★ To promote multidisciplinary activities by enhancing the skills of faculty and students to solve complex technological problems of the society.
- ★ To raise entrepreneurs with a passion to contribute to the needs of the society.
- ★ To produce responsible leaders by inculcating moral and ethical values to the faculty and the students.

1.2 State the Program Educational Objectives (PEOs) (5)

PEO No.	Program Educational Objectives Statements
PEO 1	Pursue successful careers by demonstrating their knowledge and skills acquired in their course.
PEO 2	Attain skills competent to the standards to qualify competitive exams and produce skilled representatives in the industry.
PEO 3	Exemplar technical skills in cutting edge technologies to solve the problems of the society considering the technical challenges by diversifying innovative projects.

1.3 Indicate where and how the Vision, Mission and PEOs are published and disseminated among stakeholders (10)

Publication Channels:

- Official College Website: https://gemspolytechnic.edu.in/
- Dedicated Department Webpage on the CollegeWebsite:https://gemspolytechnic.edu.in/electrical-and-electronics-engineering/
- Department Brochure
- Department Newsletter
- Laboratory Manuals
- Laboratory Record copy
- Student Orientation Programs
- Department Association Activities
- Course Files

Dissemination Points:

- Faculty and Staff Rooms
- Department Corridors
- Classroom Environments
- Laboratories
- Departmental Notice Board

1.4 State the process for defining the Vision and Mission of the Department, and PEOs of the program (15)

Initial Input Gathering:

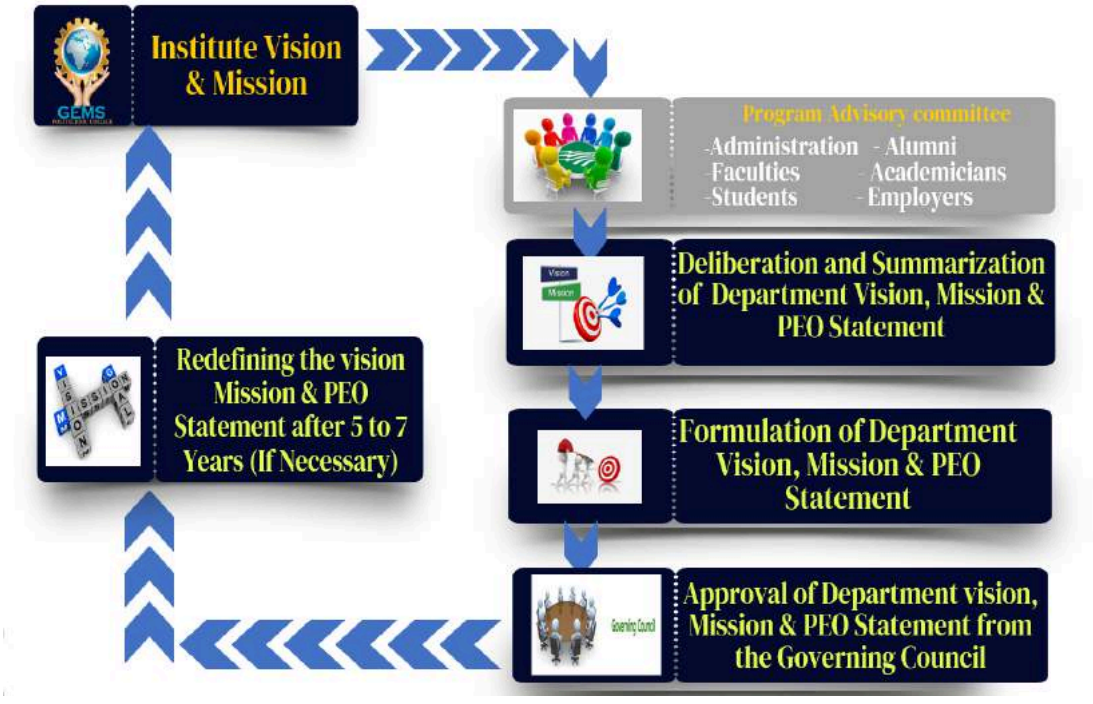
- The starting point is to consider the vision and mission statements of the institute as the primary input.

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 parents, alumni, academicians, and employers.

Deliberation and Summarization:

- The next step involves careful deliberation and summarization of the departments Vision, Mission and the 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



1.5 Establish Consistency of PEOs with Mission of the Department

PEO Mapping with Mission	Justification
PEO1 Statement is **Strongly** attained by **M1 and M2, M3 and M4** Moderately attained by M5	● Preparing students for successful careers through academic excellence, industry collaboration, multidisciplinary activities, and entrepreneurial skills. ● Providing career development programs through Capacity Development programs to enhance well-rounded preparation.
PEO2 Statement is **Strongly by M2** and **Moderately** attained by **M1, M3** and **M4** Slightly attained by **M5**	● Involving industry professionals in curriculum development and emphasizing practical experiences to better align the program with industry standards. ● Prioritizing practical experiences like internships and industry projects to bridge the gap between theoretical knowledge and practical application.
PEO3 Statement is **Strongly** attained by **M1 and M2** Moderately attained by **M3, M4 and M5**	● Emphasizing project diversity, fostering creativity, and providing hands-on experiences in cutting-edge technologies

PEO Statements	M1	M2	M3	M4	M5
Pursue successful careers by demonstrating their knowledge and skills acquired in their course	**3**	**3**	**3**	**3**	**2**
Attain skills competent to the standards to qualify competitive exams and produce skilled representatives in the industry	**2**	**3**	**2**	**2**	**1**
Exemplar technical skills in cutting edge technologies to solve the problems of the society considering the technical challenges by diversifying innovative projects.	**3**	**3**	**2**	**2**	**2**

Criterion 2

Program Curriculum and Teaching-learning processes

2 PROGRAM CURRICULUM AND TEACHING - LEARNING PROCESSES (200)

2.1 Program Curriculum (40)

All POs and PSOs are being demonstrably met through Curriculum ? : **No**

2.1.1 State the process used to identify extent of compliance of the Board curriculum for attaining the Program Outcomes (POs) and Program Specific Outcomes (PSOs) as mentioned inAnnexureI. Also mention the identified curricular gaps, if any (25)

A. Process used to identify extent of compliance of curriculum for attaining POs & PSOs (15)

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 Departments 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:

1. Basic Sciences
2. Engineering Sciences
3. Humanities & Social Sciences
4. Program Core
5. Program Elective

6. Open Elective
7. Project, Seminar, Internship
8. Audit Courses & MOOCs

Table 2.1-Distribution of Curriculum towards the attainment of POs and PSOs

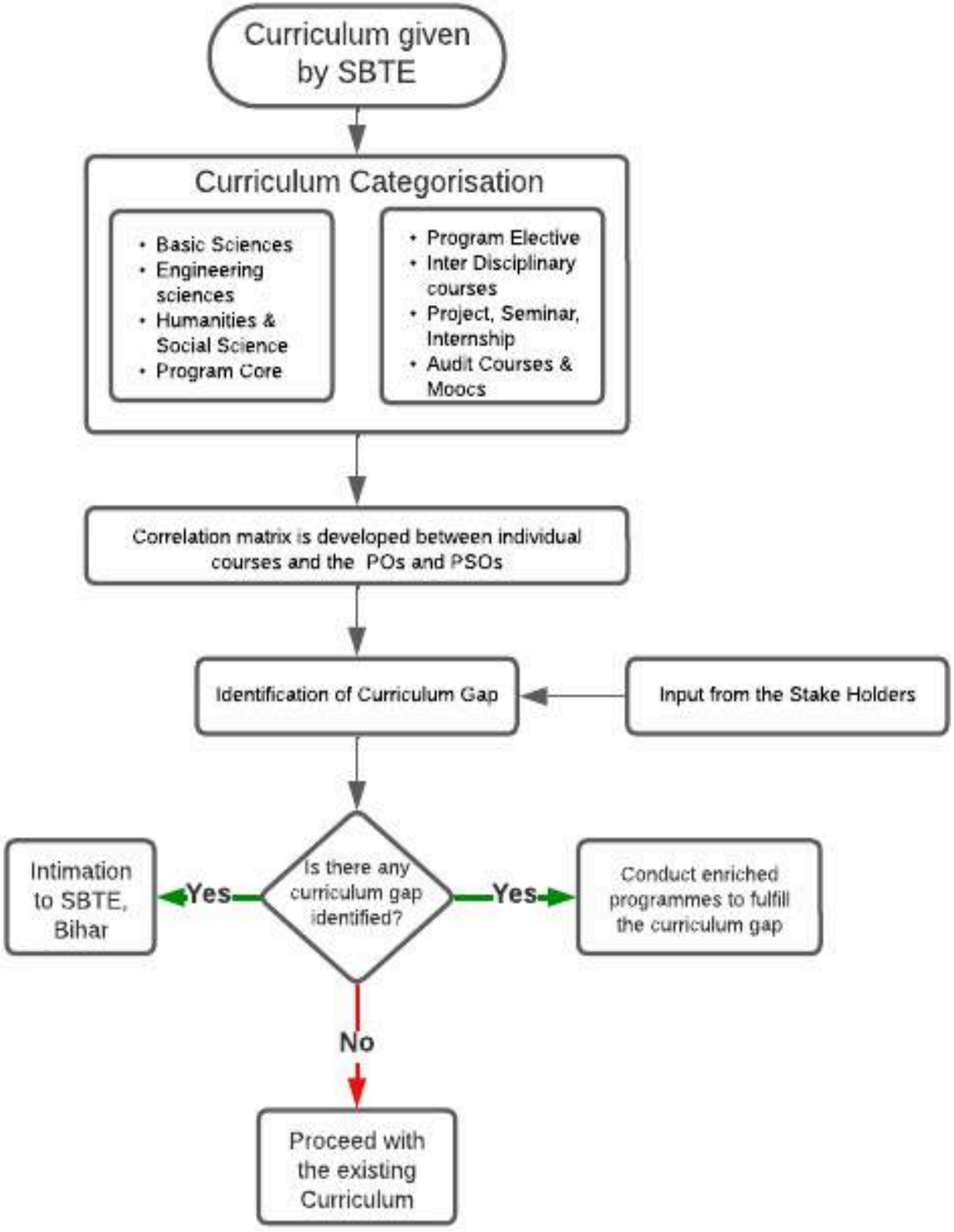
S.No	Course Component	Courses	Credits	Total Course Component Credit	Curriculum Content (% of total number of credits of the program)	Total number of contact Periods per week	Total Periods	Relevance to PO and PSOs (Y / N)									
								PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
1	Basic Sciences	Mathematics-1	3	21	14.48%	6	33	Y	Y	-	-	-	-	-	Y	-	-
2		Applied Physics-I	3			5		Y	Y	Y	Y	Y	-	-	Y	Y	Y
3		Applied Chemistry	3			5		Y	Y		Y	Y	-	Y	-	-	-
4		Applied Physics Lab-I	2			2		Y	Y	-	-	-	-	Y	-	-	-
5		Applied Chemistry Lab	2			2		Y	Y	Y	Y	Y	Y	Y	-	-	-
6		Mathematics-2	4			6		Y	Y	Y	Y	Y	Y	Y	Y	-	Y
7		Applied Physics-2	3			5		Y	Y	-	Y	Y		Y	-	-	-
8		Applied Physics Lab-2	1			2		Y	Y	Y	-	-	-	-	Y	Y	Y
9	Engineering sciences	Engineering Graphics	2	17	11.72%	6	30	Y	-	Y	Y	-	-	Y	-	-	-
10		Engg. Workshop Practice	2			2		Y	-	-	Y	Y	-	Y	-	-	-
11		Engineering Mechanics	3			5		Y	Y	Y	Y	Y	Y	-	Y	-	-
12		Engineering Mechanics Lab	2			2		-	Y	-	Y	Y	Y	-	-	-	-
13		Introduction to IT Systems	2			5		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
14		Introduction to IT Systems Lab	2			2		Y			Y	Y	Y	Y	Y	Y	Y
15		Fundamental of Electrical & Electronics Engineering	3			6		Y		Y	Y		Y	Y	Y	Y	Y
16		Fundamental of Electrical & Electronics Engg. Lab	1			2		Y		Y	Y	Y	Y	Y	Y	Y	Y

17	**Humanities**	Communication Skills in English	2	8	5.52%	5	13					Y	Y	Y			
18		Communication Skills in English Lab	2			2		Y				Y	Y	Y			
19		Sports and Yoga	2			1				Y		Y	Y	Y	Y		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	100	Y	Y			Y		Y	Y		Y
22		Electrical Circuits (2020302)	3			5		Y	Y						Y		
23		Electrical and Electronic 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	Y	Y	
25		Fundamentals of Basic electronics &Digital Electronics (2020305)	3			5		Y	Y	Y					Y		
26		Introduction to electric power generation laboratory (2020306)	1			2		Y			Y	Y		Y	Y		Y
27		Electrical Circuits Laboratory (2020307)	1			2		Y	Y		Y				Y	Y	Y
28		Electrical and Electronic Measurements Laboratory (2020309)	1			2		Y	Y	Y	Y	Y		Y	Y	Y	Y
29		Electric Motors and Transformers Laboratory (2020310)	1			2		Y			Y	Y			Y	Y	
30		Fundamentals of Basic electronics &Digital Electronics (TW)(2020312)	1			1		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	Y	
33		Induction, Synchronous and Special Electrical Machines 2020403	3			5		Y	Y					Y	Y	Y	

34		Solar Power technologies 2020404	3			5		Y				Y		Y	Y		
35		Industrial drives 2020405	3			5		Y	Y		Y				Y	Y	Y
36		Power Electronics Laboratory 2020406	1			2		Y	Y			Y		Y	Y		Y
37		Induction, Synchronous and Special Electrical Machines Laboratory 2020407	1			2		Y			Y			Y	Y	Y	
38		Industrial Drives laboratory 2020408	1			2		Y	Y		Y				Y	Y	Y
39		MATLAB 2020409	1			2		Y	Y		Y			Y	Y	Y	
40		Electric power transmission and distribution (T.W) 2020410	1			1		Y						Y	Y	Y	
41		Solar power technologies (T.W) 2020411	1			1		Y				Y		Y	Y		
42		Course Under Moocs /SWAYAM/**AutoCAD** in electrical engineering or others 2020412	1			2		Y			Y	Y	Y	Y	Y	Y	Y
43		Microprocessor & Microcontroller 2020501	4			6		Y		Y					Y	Y	
44		Energy Conservation and Audit 2020502	3			5		Y	Y			Y					Y
45		Microcontroller Applications Laboratory 2020506	2			2		Y		Y	Y				Y	Y	
46		Energy Conservation and Audit Lab 2020507	1			2		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
47		Building Electrification 2020602	4			6		Y		Y				Y	Y		
48		Utilization of Electrical Energy 2020603	4			6		Y	Y		Y	Y	Y	Y	Y	Y	Y
49	**Project, Seminar, Internship**	Summer training/Industrial Visits 2020413	2	9	6.21%	1	8	Y			Y			Y	Y	Y	
50		Minor Project 2020510	2			2			Y	Y		Y	Y			Y	Y
51		Seminar 2020609	2			2		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
52		Major Project 2020610	3			3			Y	Y	Y	Y	Y	Y		Y	Y

53	**Program Elective**	Switchgear and Protection (2020503C)	3	16	11.03%	5	27	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			2		Y	Y		Y				Y			
57		Electric Traction Lab. (2020509C)	1			2		Y							Y	Y		
58		Network Theory(2020604A)	3			6		Y	Y	Y	Y				Y			
59		Building Electrification Laboratory (2020608A)	2			2		Y		Y	Y	Y	Y					Y
60	**Inter Disciplinary courses**	Web Technology Lab 2018308	1	4	2.76%	2	8		Y	Y	Y		Y	Y				
61		Python 2018311	1			1		Y		Y	Y		Y	Y				
62		Project Management (2015605B)	2			5		Y					Y	Y				
63	**Audit Courses & Moocs**	C/KYP/IT Essential / Python/ Others (2001111)	1	8	5.52%	1	6	Y			Y	Y		Y				
64		Course under MOOCS /SWAYAM/ETC/(2002210)	2			1		Y	Y	Y					Y	Y	Y	
65		KYP/IT Essential/Python/Others (2002211)	1			1		Y	Y	Y	Y	Y	Y	Y	Y			Y
66		Environmental Science (2002212)	2			1		Y	Y			Y		Y				
67		Course under Moocs/ NPTEL / Others (2020511)	1			1		Y			Y			Y	Y			Y
68		Course Under Moocs /NPTEL/ Others TW (2020611)	1			1		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
TOTAL			145	145	100.00%	No. of Courses Mapped with POs & PSOs		61	41	30	39	38	24	44	48	33	30	

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


Curriculum given by SBTE
Curriculum Categorisation
Basic Sciences
Engineering sciences
Humanities & Social Science
Program Core
Program Elective
Inter Disciplinary courses
Project, Seminar, Internship
Audit Courses & Moocs
Correlation matrix is developed between individual courses and the POs and PSOs
Identification of Curriculum Gap
Input from the Stake Holders
Is there any curriculum gap identified?
Yes
Intimation to SBTE, Bihar
Yes
Conduct enriched programmes to fulfill the curriculum gap
No
Proceed with the existing Curriculum

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.

Table 2.2 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	61	89.71%
PO 2	Problem Analysis	41	60.29%
PO 3	Design / Development of solutions	30	44.12%
PO 4	Engineering Tools, Experimentation and Testing	39	57.35%
PO 5	Engineering Practices for society, Sustainability and Environment	38	55.88%
PO 6	Project Management	24	35.29%
PO 7	Life-Long Learning	44	64.71%
Average Percentage (%)			**58.19%**

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:
PO3: Design / Development of solutions
PO5: Design / Engineering Practices for society, Sustainability and Environment
PO6: Project Management

Table 2.2 Compliance of SBTE curriculum with PSOs

Total No. of Courses: 68

S.NO	Program Outcomes	Number of courses Mapped with PSOs	Percentage
PSO 1	Provide a strong foundation in mathematical, science, electrical and electronics engineering to solve electrical and electronics problems.	48	70.59%
PSO 2	Understand, analyze, simulate and design electrical machines, modern electrical drives, latest electronic systems, Embedded Systems, IOT and automation of systems and to determine their performance through testing.	33	48.53%
PSO 3	Develop and implement electrical and electronics allied interdisciplinary projects to meet the demands of industry and to provide solutions for energy conservation and sustainability.	30	44.12%
Average Percentage (%)			**54.41%**

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:
PSO2: Understand, analyze, simulate and design electrical machines, modern electrical drives, latest electronic systems, Embedded Systems, IOT and automation of systems and to determine their performance through testing.
PSO3: Develop and implement electrical and electronics allied interdisciplinary projects to meet the demands of industry and to provide solutions for energy conservation and sustainability.

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 (10)

In the pursuit of educational excellence, it is imperative to critically examine and identify areas within the curriculum of the Diploma in Electrical and Electronics 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:

i) The compliance with the State Board of Technical Education (SBTE) curriculum and
ii) 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 and Electronics 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,PO3,PO6
2.	**Emerging Technologies**	The curriculum does not sufficiently cover emerging technologies in Electrical and Electronics 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 competitive in the fast-evolving world of electrical engineering.	PSO2,PO3,PO5, PO6
3.	**Essential Fundamentals**	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. This gap in essential fundamentals can adversely impact their readiness for the challenges presented by a dynamic and evolving academic and professional	PO1,PO3,PO6

		landscape.	
4.	**Environmental awareness and Sustainability**	The curriculum lacks adequate coverage of sustainability and environmental awareness in Electrical and Electronics Engineering leaving graduates less informed about pressing ecological issues and potential solutions. 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.	PO3,PO5,PSO2
5.	**Career Guidance**	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. Students lack adequate support and information for making informed career choices within the field of Electrical and Electronics Engineering , which hinders their long-term success in the profession.	PSO3,PO6,PO7

2.1.2 Contents beyond the Syllabus (15)

A. Steps taken to get identified gaps included in the curriculum (eg. letters to Board) (2)

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	Input to the SBTE Board (suggestion)	Reason	Relevance to PO's/PSO's
III	**Induction Synchronous and Special Electrical Machines - 2020403**	**Equivalent Circuit Diagram of Induction Motor**	Students must grasp the induction motor's equivalent circuit for a practical understanding of electrical machines, aligning with industry needs.	**PO3,PO6, PSO2**
IV	**Electrical and Electronic Measurements - 2020303**	**Dampings and its types**	EEE students need to grasp damping and its types for precise measurement and control systems, directly enhancing practical skills for real-world applications.	**PO1, PO3,PO6 PSO2**

V	**Switchgear and Protection (2020503C)**	**Oil circuit breakers and lightning Arresters**	Knowledge of oil circuit breakers and lightning arresters is crucial for switchgear systems, preparing students for industry challenges in design, operation, and maintenance.	**PO3, PO5,PO6 PSO2,PSO3**

B.Delivery details of content beyond syllabus (10))

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:

Sr.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)

2022-23

S.No	Gap	Action Taken	Date-Month-Year	Resource Person with Designation	Mode	No. of students present	Relevance to POs, PSOs
1	Emerging technologies	Interaction on Coal based thermal power plant	30/01/2023	Mr.Boopathy Raja,DGM,NTPC	Offline	48	POs-1,5,7 PSOs-3
2	Industry readiness	Workshop on Electrical Wiring	07/01/2023	Workshop on Soldering Practices	Offline	48	POs-2,3,6 PSOs-3
3	Industry readiness	Light Up- An activity on Electric lamp designing	12/05/2023	Mrs.Catharine,Lecturer, GEMS Polytechnic college	Offline	75	POs-3,5,7 PSOs-3
4	Career guidance	National Startup day Guest lecture	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
5	Emerging technologies	Technical quiz	03/09/2023	ISTE	Offline	90	POs-2,7 PSOs-2
6	Career guidance	Career guidance	30/08/2023	Dr. P. K. Rao, Training and Placement Expert, Department of Science and Technology, Patna, Bihar	Offline	23	POs-1,7 PSOs-3
7	Industry readiness	Metal Art	27/07/2023	Mrs.Catharine,Lecturer, GEMS Polytechnic college	Offline	42	POs-3,6 PSOs-3
8	Emerging technologies	Technical quiz	27/07/2023	Mrs. Chinthiya Lecturer GEMS Polytechnic college	Offline	20	POs-1,6,7 PSOs-3
9	Industry readiness	Industrial Visit to Hydro electric power plant	28/10/2023	Mrs. Pameela M, HOD, Electrical and Electronics Engineering Department	Offline	60	POs-1,7 PSOs-3
10	Environmental Awareness and Sustainability	Lecture on Content beyond the Syllabus - Smart Grid	16/03/2023	Ms. Pathma Priya, Department of Electrical and Electronics Engineering, GPC	Offline	29	POs-1,5,7 PSOs-1
11	Industry readiness	Lecture on Content beyond the Syllabus - Synchronous Condenser	21/03/2023	Mrs.D.Priya,Department of Electrical Engineering, GPC	Offline	29	POs-1,7 PSOs-1
12	Essential Fundamentals	Lecture on Content beyond the Syllabus - Wheatstone bridge	15/03/2023	Mr. Raghunath, Department of Electrical and Electronics Engineering, GPC	Offline	29	POs-1,4 PSOs-2
13	Industry readiness	Lecture on Content beyond the Syllabus - Back to back testing of a transformer	22/02/2023	Mr.Ketu Kumar Sahitya, Department of Electrical and Electronics Engineering, GPC	Offline	29	POs-4,6 PSOs-1
14	Emerging technologies	Lecture on Content beyond the Syllabus - Real Time applications of transistor	21/02/2023	Mrs.Catharine, Department of Electrical and Electronics Engineering, GPC	Offline	29	POs 5,6,7 PSOs-2
15	Essential Fundamentals	Lecture on Content beyond the Syllabus - Coordinate Geometry	17/02/2023	Mr. Sumit Kumar Singh, Department of Electrical and Electronics Engineering, GPC	Offline	30	POs-1,2 PSOs-3
16	Industry readiness	Lecture on Content beyond the Syllabus - Destructive and Non-destructive	01/03/2023	Mr. Anil kolli, Department of Mechanical Engineering, GPC	Offline	30	POs-1,2,4 PSOs-2

		testing					
17	Industry readiness	Lecture on Content beyond the Syllabus - AutoCAD commands	03/02/2023	Mr. Arun pandian, Department of Mechanical Engineering, GPC	Offline	30	POs-1,5,7 PSOs-2
18	Emerging technologies	Lecture on Content beyond the Syllabus - Concepts of Machine learning	28/02/2023	Mr.Vivek, Department of Computer and Science Engineering, GPC	Offline	30	POs-1,7 PSOs-2
19	Essential Fundamentals	Lecture on Content beyond the Syllabus - Conversation skills	17/02/2023	Mrs.Jaslin christy, Department of Civil Engineering, GPC	Offline	30	POs-1,7 PSOs-1
20	Environmental Awareness and Sustainability	Lecture on Content beyond the Syllabus - Framework of Energy management System	28/01/2023	Mr.Jabas Edwin raj,Department of Electrical Engineering, GPC	Offline	23	POs 5,6,7 PSOs-2
21	Industry readiness	Lecture on Content beyond the Syllabus - Oil circuit breaker	12/01/2023	Mr.David Naik, Department of Electrical and Electronics Engineering, GPC	Offline	23	POs 5,6,7 PSOs-3
22	Industry readiness	Lecture on Content beyond the Syllabus - Overhead Equipments Design	07/03/2023	Mr.BhaMr.Bhaskar Ranjan,Department of Electrical Engineering, GPCskar Ranjan,Depart	Offline	23	POs-3,7 PSOs-3
23	Essential Fundamentals	Lecture on Content beyond the Syllabus - 8086 Architecture	15/02/2023	Mr.Robin, Department of Electrical and Electronics Engineering, GPC	Offline	23	POs-2,6,7 PSOs-3
24	Emerging technologies	Lecture on Content beyond the Syllabus - Analysis on Aerodynamics	14/02/2023	Mr.Anugrah Mr.Anugrah Ashish,Department of Electrical Engineering, GPC,Departm	Offline	23	POs-1,2,7 PSOs-1
25	Emerging technologies	Paper presentation	26/07/2023	Mr. Anil kolli, Department of Mechanical Engineering, GPC	Offline	23	POs-1,6,7 PSOs-3

2021-22

S.No	Gap	Action Taken	Date-Month-Year	Resource Person with Designation	Mode	No. of students present	Relevance to POs, PSOs
1	Emerging technologies	Seminar on Railway trends	11/08/2022	Mr.Abner,PGD Rail & Metro technology	Offline	48	POs-1,5,7 PSOs-1
2	Emerging technologies	Real time talk on Electro motives	12/08/2022	Mr.Abner,PGD Rail & Metro technology	Offline	48	POs-1,7 PSOs-3
3	Industry readiness	PCB Designing	02/09/2022	Mr.Ketu Kumar, Department of Electrical and Electronics Engineering, GPC	Offline	48	POs-3,4 PSOs-2
4	Career Guidance Program	Career Guidance Program	30/08/2022	Dr.Kamesh,Training & Placement Expert,Dept of Science & technology ,Patna	Offline	48	POs-5,7 PSOs-3
5	Career Guidance Programental Awareness and Sustainability	Orientation Program (2020-2023)	01/04/2022	Mr.Robin, Department of Electrical and Electronics Engineering, GPC	Offline	29	POs-5,7 PSOs-3
6	Career Guidance Programental Awareness and Sustainability	Farewell Program (2019-2022)	26/05/2022	Mrs.Pameela,HOD of Department of Electrical and Electronics Engineering, GPC	Offline	25	POs-7 PSOs-3
7	Industry readiness	Feel Engineering Project Expo	27/05/2022	Mrs.Pameela,HOD of Department of Electrical and Electronics Engineering, GPC	Offline	25	POs-3,6 PSOs-2
8	Industry readiness	Lecture on Content beyond the Syllabus - Linear differential	05/09/2022	Mr. Sumit Kumar Singh, Department of Electrical and Electronics Engineering, GPC	Offline	30	POs-1,2 PSOs-3

		equations					
9	Environmental awareness and Sustainability	Lecture on Content beyond the Syllabus - coulomb's law in electromagnetism	17/08/2022	Mr. Velangi Babu, Department of Electrical and Electronics Engineering, GPC	Offline	30	POs-1,7 PSOs-1
10	Essential Fundamentals	Lecture on Content beyond the Syllabus - Computer fundamentals	23/08/2022	Miss.Kanti Verma, Department of Computer and Science Engineering, GPC	Offline	30	POs-7 PSOs-3
11	Essential Fundamentals	Lecture on Content beyond the Syllabus - Digital Number systems	07/09/2022	Mr.Ketu Kumar, Department of Electrical and Electronics Engineering, GPC	Offline	30	POs-1,7 PSOs-2
12	Essential Fundamentals	Lecture on Content beyond the Syllabus - Homogeneous differential equations	03/08/2022	Mr. Sumit Kumar Singh, Department of Electrical and Electronics Engineering, GPC	Offline	30	POs-2,7 PSOs-3
13	Industry readiness	Lecture on Content beyond the Syllabus - Working of Motorson Con	16/08/2022	Mr.David Naik, Department of Electrical and Electronics Engineering, GPC	Offline	29	POs-3,4 PSOs-1
14	Industry readiness	Lecture on Content beyond the Syllabus - MS-office	01/08/2022	Miss.Kanti Verma, Department of Computer and Science Engineering, GPC	Offline	29	POs-7 PSOs-3
15	Industry readiness	Lecture on Content beyond the Syllabus - Measuring Instruments	21/09/2022	Mr.Robin, Department of Electrical and Electronics Engineering, GPC	Offline	29	POs-3,4 PSOs-2
16	Industry readiness	Lecture on Content beyond the Syllabus - Gear train,Hoist Mechanism,Gear pulley block	14/09/2022	Mr. Sudhir, Department of Mechanical Engineering, GPC	Offline	29	POs-1,7 PSOs-2
17	Essential Fundamentals	Lecture on Content beyond the Syllabus - 8086 architecture with programming models	22/09/2022	Mr. Robin, Department of Electrical and Electronics Engineering, GPC	Offline	25	POs-3,4 PSOs-2
18	Environmental awareness and Sustainability	Lecture on Content beyond the Syllabus - Energy management System	12/08/2022	Mr.Raghunath, Department of Electrical and Electronics Engineering, GPC	Offline	25	POs 5,6,7 PSOs-2
19	Industry readiness	Lecture on Content beyond the Syllabus - Lighting arrester and Oil circuit breaker	23/08/2022	Mr.David Naik, Department of Electrical and Electronics Engineering, GPC	Offline	25	POs 5,6,7 PSOs-3
20	Industry readiness	Lecture on Content beyond the Syllabus - Design of OHE	26/08/2022	Mr.Bhaskar Ranjan, Department of Electrical Engineering, GPC	Offline	25	POs-3,7 PSOs-3
21	Emerging technologies	Lecture on Content beyond the Syllabus - Machine learning	17/09/2022	Mr.Vivek, Department of Computer and Science Engineering, GPC	Offline	25	POs-1,7 PSOs-2

2.2 Teaching - Learning Process (160)

2.2.1 Describe Processes followed to ensure/improve quality of Teaching & Learning based on following points (25)

A. Adherence to Academic Calendar (3)

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

Here are the key components of our departments 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:

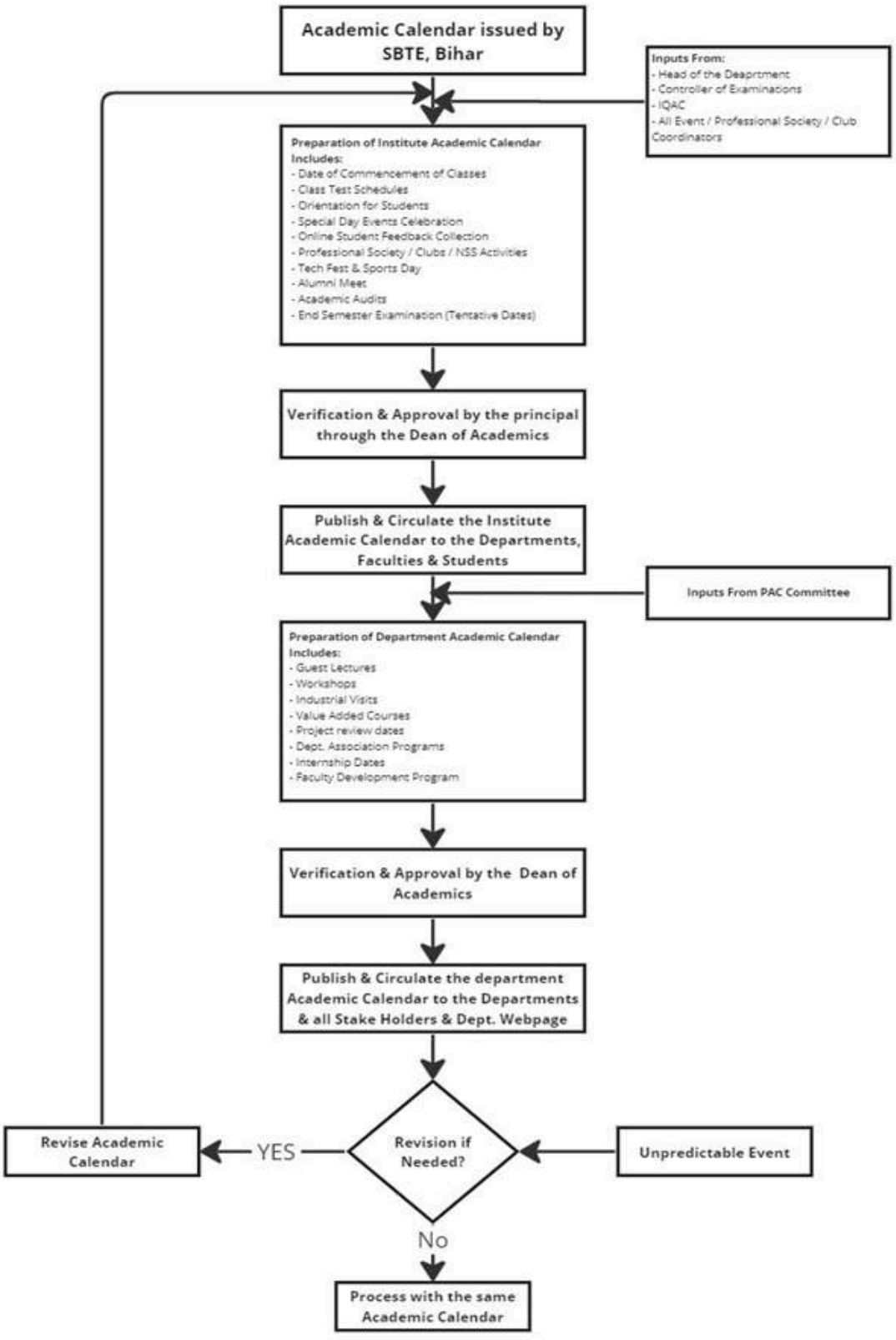
- Many of our programs emphasize practical learning and industry exposure.
- The academic calendar incorporates planned industrial visits, providing students with opportunities to gain real-world insights into their fields of study.

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 institutions and SBTEs 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 materi**al.**

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 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.

Blooms Taxonomy:

- Faculty members are also introduced to Blooms taxonomy objectives to enhance their educational activities and facilitate more effective teaching.

Flipped Classrooms:

- Fostering active learning, our educators utilize the flipped classroom model to engage students through pre-recorded lectures, enabling valuable in-class discussions and collaborative problem-solving.

Swayam NPTEL Lectures:

- Leveraging online platforms like Swayam and NPTEL, our instructional approach integrates high-quality, accessible lectures to broaden students knowledge base and enhance the overall learning experience.

3D Printed Models:

- Enhancing tactile learning, the incorporation of 3D printed models in our teaching methodology provides students with hands-on experiences, fostering a deeper understanding of complex concepts.

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.

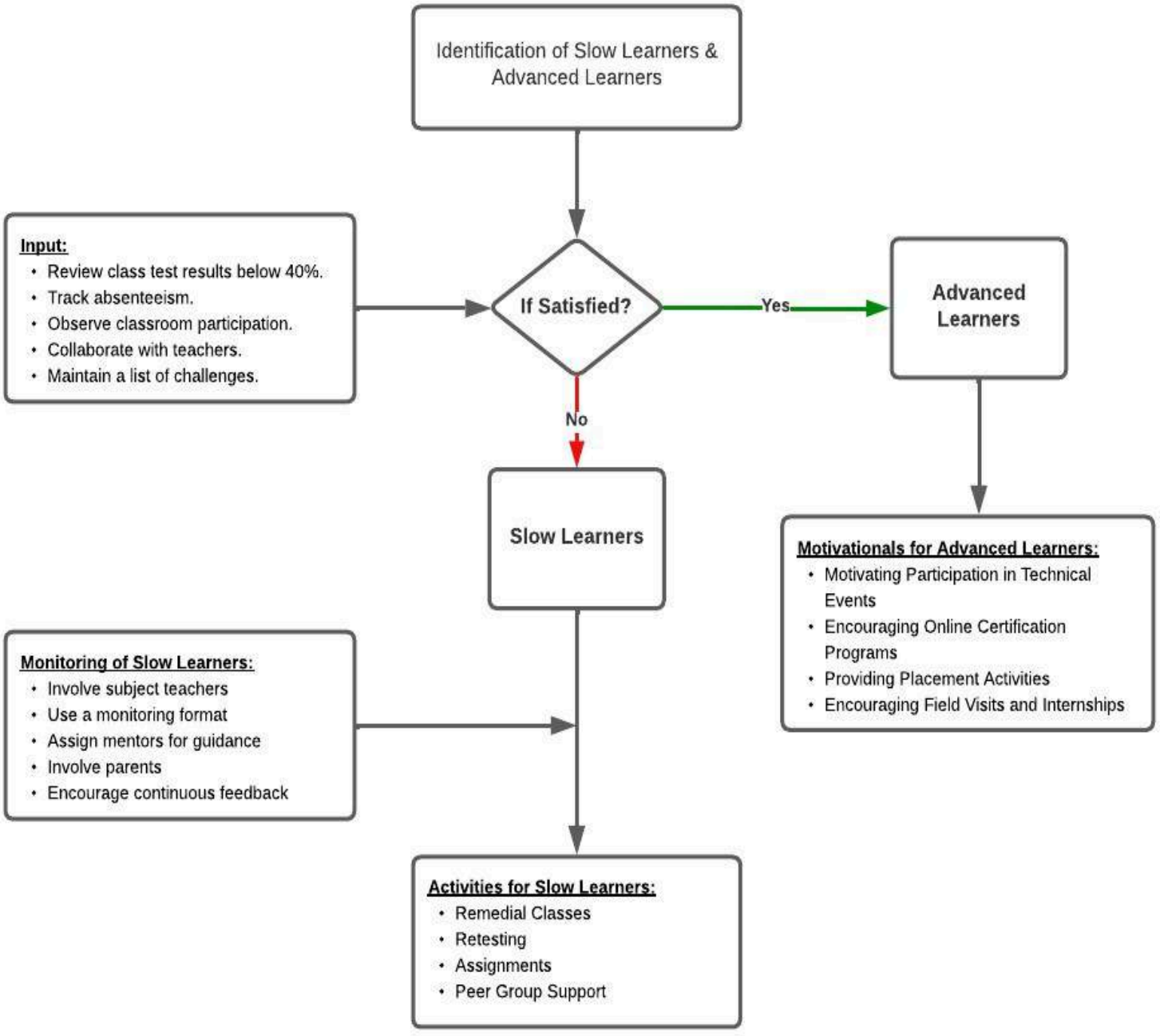
Providing Placement Activities:

- 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 (3)

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.

Hands-on Learning:

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

E. Conduct of experiments (3)

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 4 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.
- 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 (3)

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).
- 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 (6)

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 more than 60%) x 100.

Students have a criteria 60% of attendance is required to participate in the Feedback

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. Counseling to the Faculty:

- Faculty members who falling below 75% of performance will be given counseling by the Dean of Academics and the Principal in the presence of the Head of the Department (HOD).

c. Caution Letter:

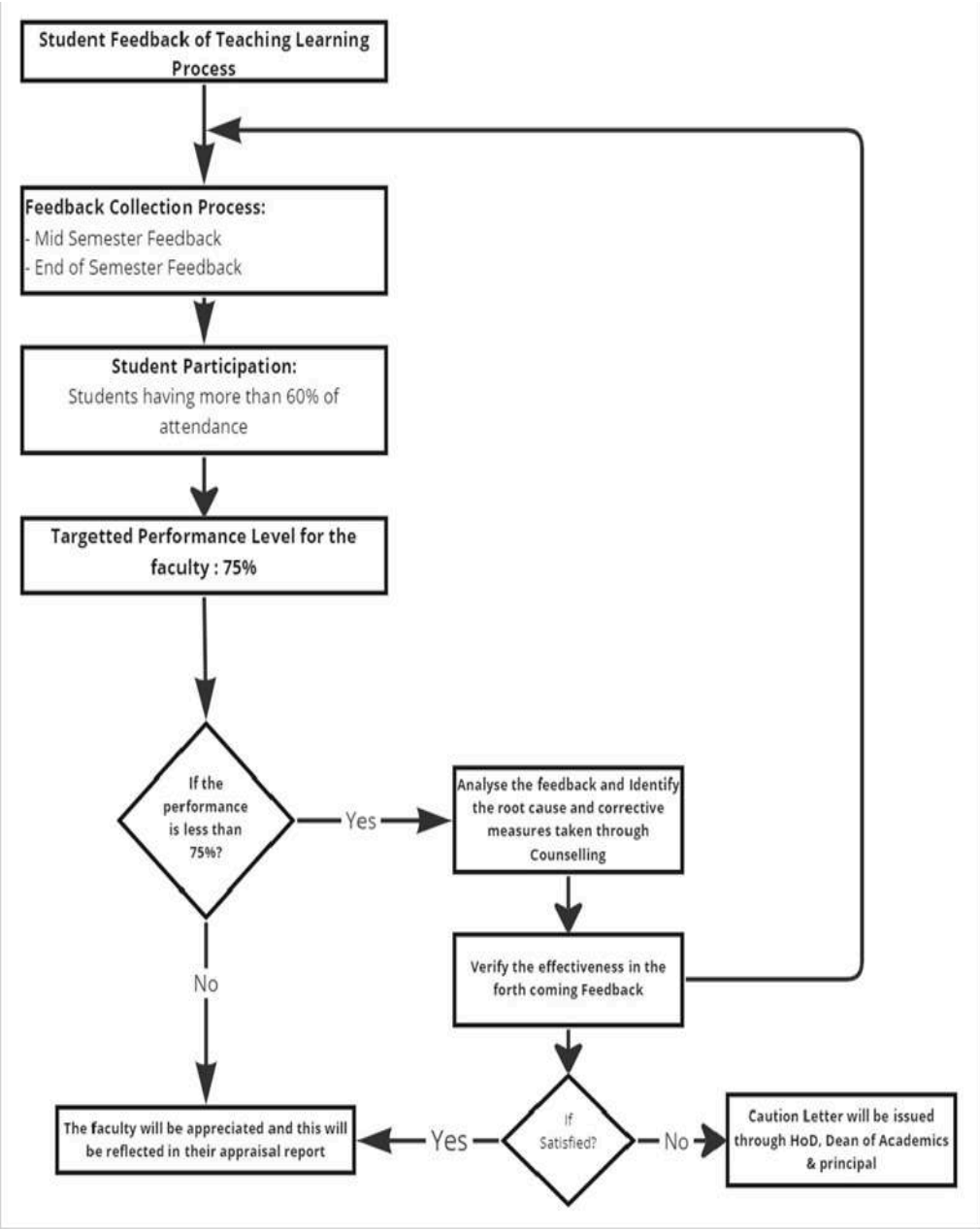
- If performance remains unsatisfactory despite initial feedback Caution letter is issued to the faculty member by the Principal through the Dean of Academics.

d. Monitoring and Evaluation:

- Continuous monitoring and evaluation of faculty members progress throughout the semester.
- A second feedback round is conducted at the semesters 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 (15)

A. Process for Internal semester question paper setting and evaluation and effective process implementation (5)

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.

Class Test 4: 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

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.

Addressing Student Grievances in Answer Sheet Evaluation:

Following the evaluation process by faculty, students have the opportunity to raise concerns about total marks calculation errors and marks evaluation discrepancies. This ensures transparency and fairness in the assessment system, fostering an environment where students can seek resolution for any perceived mistakes in their evaluated answer sheets.

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 (5)

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 Blooms 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 four Class Tests. Faculties are instructed to create questions based on the COs distributed unit-wise.

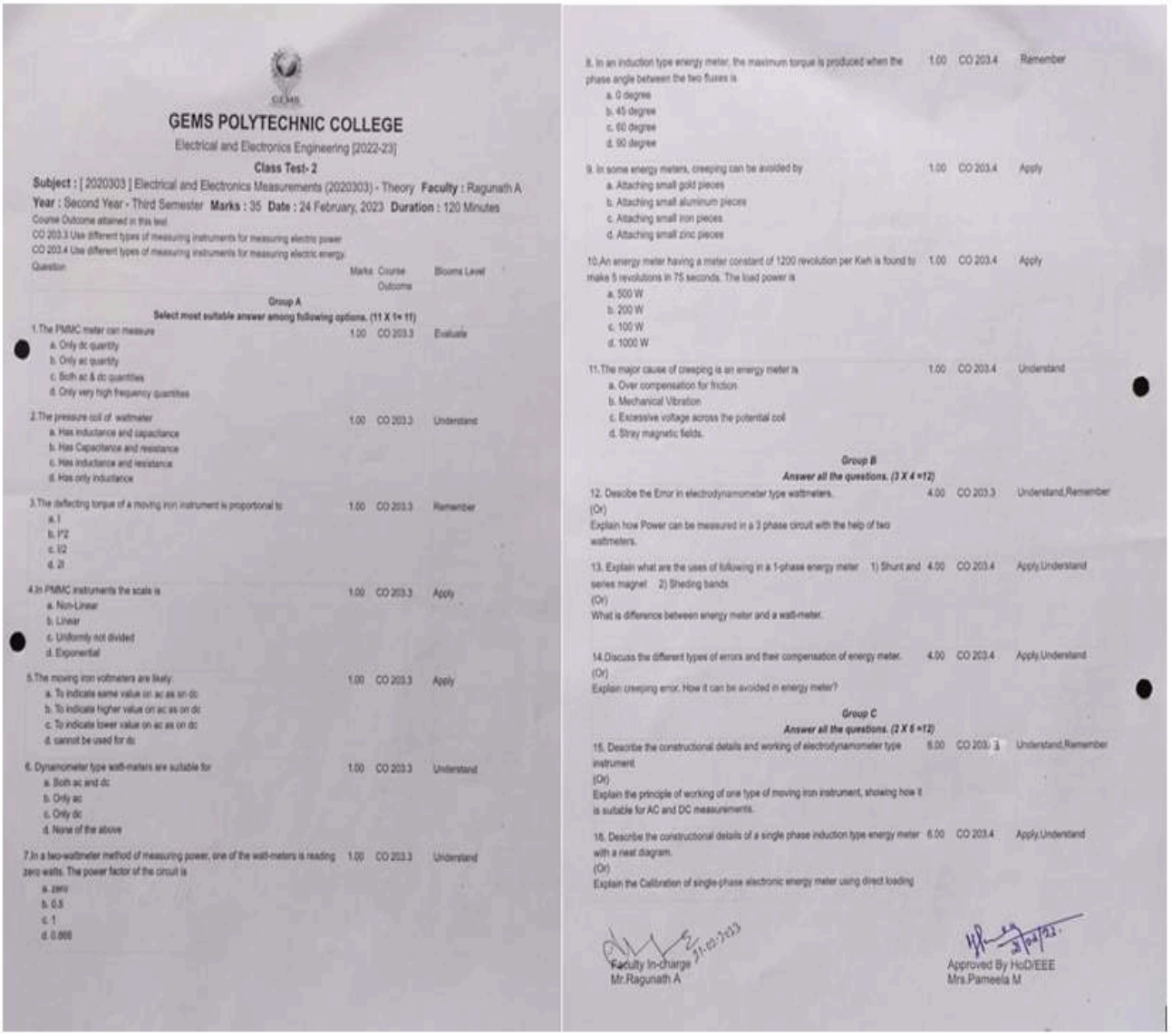
Inclusion of COs and Bloom Level:

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 sheets front page.
Additionally, the corresponding questions 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 students cognitive skills and subject knowledge



GEMS POLYTECHNIC COLLEGE

Electrical and Electronics Engineering [2022-23]

Class Test- 2

Subject : [2020303] Electrical and Electronics Measurements (2020303) - Theory **Faculty :** Ragunath A

Year : Second Year - Third Semester **Marks :** 35 **Date :** 24 February, 2023 **Duration :** 120 Minutes

Course Outcome attained in this test

CO 203.3 Use different types of measuring instruments for measuring electric power

CO 203.4 Use different types of measuring instruments for measuring electric energy

Question	Marks	Course Outcome	Blooms Level
Group A			
Select most suitable answer among following options. (11 X 1= 11)			
1.The PMMC meter can measure a. Only dc quantity b. Only ac quantity c. Both ac & dc quantities d. Only very high frequency quantities	1.00	CO 203.3	Evaluate
2.The pressure coil of wattmeter a. Has inductance and capacitance b. Has Capacitance and resistance c. Has inductance and resistance d. Has only inductance	1.00	CO 203.3	Understand
3.The deflecting torque of a moving iron instrument is proportional to a. I b. I^2 c. 1/2 d. 2I	1.00	CO 203.3	Remember
4.In PMMC instruments the scale is a. Non-Linear b. Linear c. Uniformly not divided d. Exponential	1.00	CO 203.3	Apply
5.The moving iron voltmeters are likely a. To indicate same value on ac as on dc b. To indicate higher value on ac as on dc c. To indicate lower value on ac as on dc d. cannot be used for dc	1.00	CO 203.3	Apply
6. Dynamometer type watt-meters are suitable for a. Both ac and dc b. Only ac c. Only dc d. None of the above	1.00	CO 203.3	Understand
7.In a two-wattmeter method of measuring power, one of the watt-meters is reading zero watts. The power factor of the circuit is a. zero b. 0.5 c. 1 d. 0.866	1.00	CO 203.3	Understand
8. In an induction type energy meter, the maximum torque is produced when the phase angle between the two fluxes is a. 0 degree b. 45 degree c. 60 degree d. 90 degree	1.00	CO 203.4	Remember
9. In some energy meters, creeping can be avoided by a. Attaching small gold pieces b. Attaching small aluminum pieces c. Attaching small iron pieces d. Attaching small zinc pieces	1.00	CO 203.4	Apply
10.An energy meter having a meter constant of 1200 revolution per Kwh is found to make 5 revolutions in 75 seconds. The load power is a. 500 W b. 200 W c. 100 W d. 1000 W	1.00	CO 203.4	Apply
11.The major cause of creeping is an energy meter is a. Over compensation for friction b. Mechanical Vibration c. Excessive voltage across the potential coil d. Stray magnetic fields.	1.00	CO 203.4	Understand
Group B			
Answer all the questions. (3 X 4 =12)			
12. Describe the Error in electrodynamometer type wattmeters. (Or) Explain how Power can be measured in a 3 phase circuit with the help of two wattmeters.	4.00	CO 203.3	Understand,Remember
13. Explain what are the uses of following in a 1-phase energy meter 1) Shunt and series magnet 2) Shading bands (Or) What is difference between energy meter and a watt-meter.	4.00	CO 203.4	Apply,Understand
14.Discuss the different types of errors and their compensation of energy meter. (Or) Explain creeping error. How it can be avoided in energy meter?	4.00	CO 203.4	Apply,Understand
Group C			
Answer all the questions. (2 X 8 =12)			
15. Describe the constructional details and working of electrodynamometer type instrument (Or) Explain the principle of working of one type of moving iron instrument, showing how it is suitable for AC and DC measurements.	8.00	CO 203.3	Understand,Remember
16. Describe the constructional details of a single phase induction type energy meter with a neat diagram. (Or) Explain the Calibration of single-phase electronic energy meter using direct loading	8.00	CO 203.4	Apply,Understand

Faculty In-charge
Mr.Ragunath A

Approved By HoD/EEE
Mrs.Pameela M

C. COs coverage in class test / mid-term tests and assignments (5)

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. Heres 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 (15)

A. Experimental methodologies (5)

Quality is a paramount aspect of any educational institutions 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.

Lab Audit: Regular lab audits are conducted to assess compliance with safety protocols, equipment functionality, and overall operational efficiency, ensuring a high standard of quality and safety in the laboratory environment.

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, virtual labs (5)

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, effectively preparing students for the workforce.

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:

- The virtual lab experiments, along with their corresponding webpage links, have been catalogued and uploaded on our official department website.
- This resource is intended to enhance students utilization and access to these valuable resources**.**

Demo Models:

- Explore the realm of innovative experiments with demo models, offering tangible and visual representations that enhance understanding and engagement.
- These hands-on tools provide an interactive learning experience, bridging theory and practical application.

3D Prints:

- Revolutionize experimentation through 3D prints, allowing for the creation of intricate prototypes and detailed models.
- This innovative approach not only enriches the learning process by providing a tangible dimension to concepts but also opens up new possibilities for exploring and testing ideas in various field

C. Relevance to outcomes (5)

Quality of Experiments: Industry Readiness Outcomes

Ensuring the industry readiness of students is imperative, and the quality of experiments plays a pivotal role in this preparation. Here are five simple yet crucial outcomes that contribute to fostering industry-ready professionals:

Sl.No	Outcomes
1	**Practical Proficiency:** The quality of experiments equips students with hands-on practical proficiency, enabling them to seamlessly apply theoretical knowledge to real-world scenarios.
2	**Problem-Solving Skills:** Engaging in high-quality experiments nurtures students' problem-solving skills, as they learn to analyze, adapt, and innovate in response to challenges encountered during experiments.
3	**Effective Communication:** Quality experiments encourage students to articulate their methodologies, findings, and insights effectively. This fosters the development of clear and concise communication skills, a key asset in the professional world.
4	**Critical Thinking Abilities:** Students engaged in well-designed experiments are more likely to develop critical thinking abilities. They learn to question, evaluate, and draw meaningful conclusions, enhancing their analytical prowess.
5	**Adaptability to Technology:** With a focus on the quality of experiments, students become adept at utilizing advanced technologies and tools relevant to their field. This adaptability to technological advancements enhances their industry readiness in a rapidly evolving professional landscape.

Quality of Experiments: Course Outcomes (COs) and Program Outcomes (POs)/Program Specific Outcomes (PSOs)

- 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 Students Projects and Report Writing (35)

A.Identification of projects and allocation methodology (3)

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 faculties 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 projects objectives, methodology, expected outcomes, and relevance.

Project Identification & Allocation Parameters

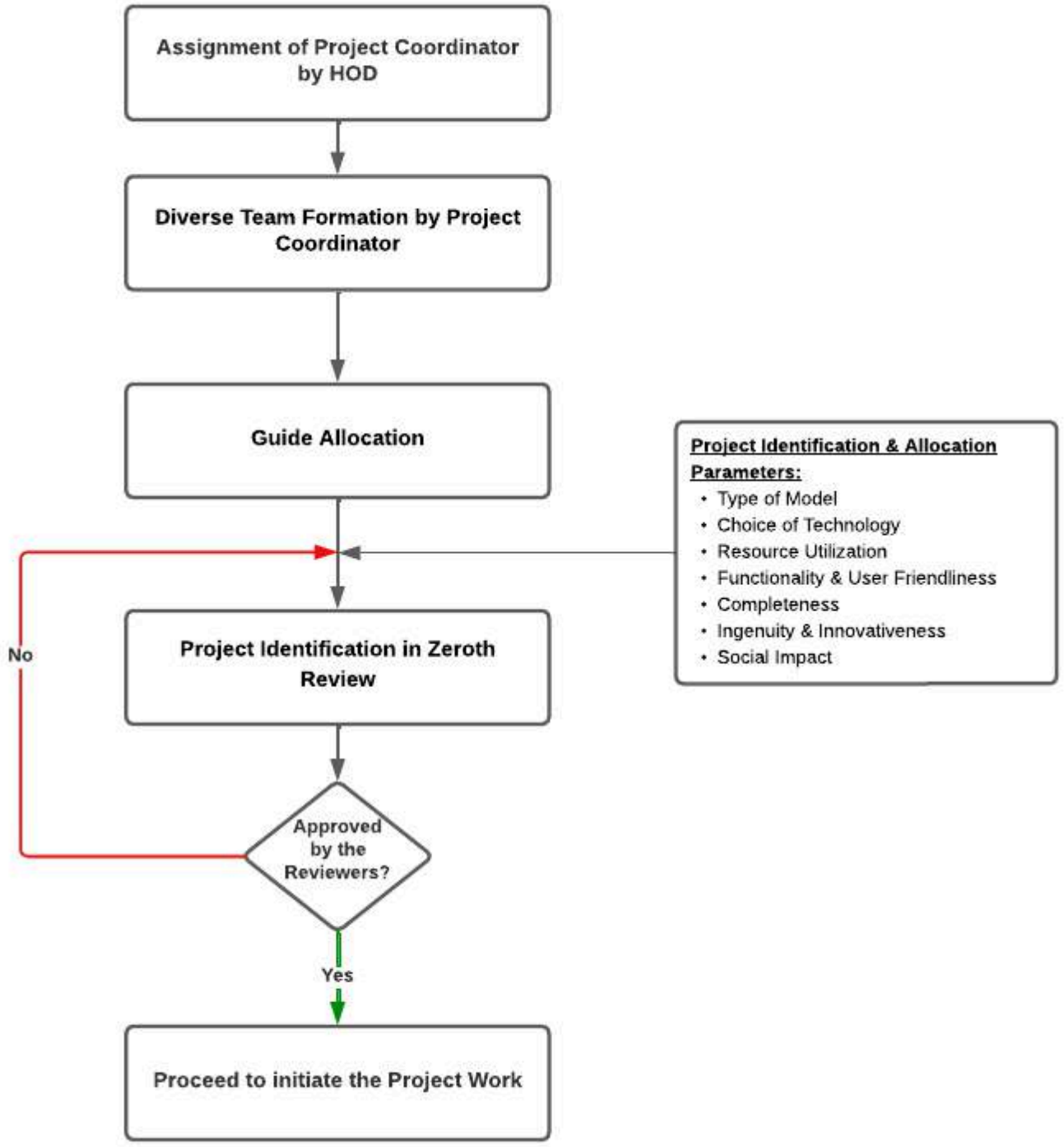
Project allocation is based on rigorous evaluation criteria and rubrics, including:

Type of Model: Assessing the appropriateness and suitability of the chosen project model.
Choice of Technology: Evaluating the selection of technology in line with project goals.
Resource Utilization: Ensuring optimal use of available resources and materials.
Functionality & User Friendliness: Evaluating the projects functionality and user-friendliness.
Aesthetic and Completeness: Assessing the overall aesthetics and completeness of the project, including documentation.

Ingenuity & Innovativeness: Recognizing creativity and innovation in project design.

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 attainment of POs and PSOs (5)

In the field of Electrical and Electronics 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). Lets explore the relevance of projects in different Electrical and Electronics Engineering domains and their alignment with COs, POs, and PSOs.

Domains in Electrical and Electronics Engineering with Relevant Projects:

- Home Automation 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 Sources
- 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 ArduinoProjects
- 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 SavingSystem)
- PCB Manufacturing
- Footstep Based Power GenerationandMulti Purpose Optimization MATLAB for Engineers
- Universal Electrical Power Generation and And Multi Purpose Optimization – Solar, Wind and Rain Digital Signal MATLAB Processing using
- Electrical Substation Scrutinizing And Controlling Device from Remote Area
- MicroControllerbasedIntelligent Multi Timer System for Industrial Automation Smart Traffic Lighting System
- Any Other Fields.

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 as team 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 and Electronics 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 programs mission of producing well-rounded and capable Electrical and Electronics Engineers ready to address the challenges of the industry.

Project Alignment with Sustainable Development Goals (SDGs)
Our student projects exemplify a conscientious alignment with the Sustainable Development Goals (SDGs), embodying a commitment to addressing global challenges and contributing to a sustainable future.

Mapping of Projects to POs/PSOs (2022-2023):

Sl.No	Register Number	Name of the Student	Project Type	Project Title	Project Guide	Relevance of PO's / PSO's	Relevance of SDG
1	1993920014 1993920601 1993920006 1993920034	Pradeep Kumar Priska Kumari Anurag Ranjan Smriti Kumari	Community Based	Generator Load Moderator	Mr. Ragunath A	PO2, PO3, PO5, PO6, PSO2, PSO3	SDG07, SDG09, SDG12
2	1993920030 1993920024 1993920039 1993920020	Shivam Kumar Anjali Kumari Rajiya Begam Srikant Kumar	Business Based	CNC Plotter	Ms. Pathma Priya	PO3, PO4, PO5, PO6, PSO2, PSO3	SDG08, SDG09, SDG12
3	1993920032 1993920001 1993920028 1993920018	Pankaj Kumar Afnan Ahmad Shreepad Kumar Singh Sonu Kumar	Community Based	3D printed Sunflower Solar tracker	Mr.Robin S	PO3, PO4, PO5, PO6, PSO2, PSO3	SDG07, SDG09, SDG11, SDG13
4	1993920022 1993920003 1993920010 1993920025	Vikash Kumar Akshay Prakash Kiran Kumari Ashish Kumar Sharma	Business Based	Two Wheel Rover	Mr.Ketu Kumar Sahitya	PO3, PO4, PO5, PO6, PSO2, PSO3	SDG09, SDG11
5	1993920038 1993920602 1993920019 1993920041	Neeraj Kushwaha Mehak Kumari Sonu Kumar Rishikant Yadav	Community Based	Gas Leakage detection system using Arduino & GSM module	Mr.David Naik Vadithe	PO2, PO3, PO5, PO6, PSO2, PSO3	SDG03, SDG09, SDG11, SDG12
6	1993920017 1993920011 1993920031	Rahul Kumar Nibha Kumari Ritik Kumar	Community Based	Air quality monitoring using arduino	Mr.David Naik Vadithe	PO2, PO3, PO5, PO6, PSO2, PSO3	SDG03, SDG09, SDG11, SDG13

Mapping of Projects to POs/PSOs (2021-2022):

Sl.No	Register Number	Name of the Student	Project Type	Project Title	Project Guide	Relevance of PO's / PSO's	Relevance of SDG
1.	**1993919005** 1993919006 1993919018 1993919023	**Shweta Kumari** Aryan Kumar Kumari Divya Bharati Priyanka Kumari	Community Based	Arduino based vending machine for sanitary pad and sanitizer	Mrs. Pameela M	PO3, PO4, PO5, PO6, PSO2, PSO3	SDGO3, SDGO5, SDGO9
2.	**1993919037** 1993919003 1993919004 1993919032	**Harish kumar** Suchita Swati Kanaklata Abhishek Gupta	Business Based	Android Based Home automation	Dr.Grace Jency J	PO3, PO4, PO5, PO6, PSO2, PSO3	SDG09,SDG11
3	**1993919015** 1993919012 1993919020 1993919024 1993919021	**Vikash Kumar** Aman Kumar Soni kumari Manish Kumar Anjali Kumari	Business based	Wireless Notice Board	Mr.Robin S	PO2, PO3, PO5, PO6, PSO2, PSO3	SDG04,SDG09, SDG11
4	**1993919014** 1993919007 1993919010 1993919040	**Raj Aaryan** Suraj Kumar Sonu Kumar Vikash Kumar	Community Based	Smoke & Gas leakage Detector	Mr.David Naik Vadithe	PO2, PO3, PO5, PO6, PSO2, PSO3	SDG03,SDG12, SDG13
5	**1993919002** 1993919022 1993919027 1993919043	**Ritambhara Kumari** Janki Kumari Jitendra Kumar Babul Kumar	Business Based	Automatic emergency light	Mr. Ketu Kumar Sahitya	PO3, PO4, PO5, PO6, PSO2, PSO3	SDG09,SDG11
6	**1993919029** 1993919025 1993919028 1993919030 1993919041	**Kaushal Kumar** Santosh Kumar Subham Kumar Amrit Kumar Abhishek Kumar	Community Based	Android Based Solar Tracker	Mr. Ragunath A	PO3, PO4, PO5, PO6, PSO2, PSO3	SDG07,SDG09, SDG11,SDG13

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	Relevance of SDG
1	1993918003 1992018002 1992018018 1992018017	Ranjan Kumar Shweta Kumari Kaushal Kumar Devashish Kumar	Community Based	Automatic Irrigation System for Home Garden	Mr. Dinesh Palappan SAPC	PO2, PO3, PO5, PO6, PSO2, PSO3	SDG02,SDG06, SDG15
2.	1993918005 1992018006 1992018012 1992018007	Asif Ali Ankit Kumar Prabhat Kumar Ashutosh Kumar Singh	Business Based	A line Following robot	Mr. Ragunath A	PO3, PO4, PO5, PO6, PSO2, PSO3	SDG04,SDG09, SDG08
3.	1992018015 1992018016 1992018003	Nageshwar Kumar Vidya Kumar Sapna Kumari	Business Based	Human Presence detection Automation	Mr.Vijaya Bhaskar Karnika	PO3, PO4, PO5, PO6, PSO2, PSO3	SDG09, SDG11
4.	1993918002 1993918004 1992018005 1992018009	Shubam Raj Golu Kumar Naveen Kumar Ayush sourabh	Business Based	GPC wings	Mr. Simon V Antipas	PO3, PO4, PO5, PO6, PSO2, PSO3	SDG04,SDG08, SDG11
5	1992018013 1992018008 1993916602 1993916603	Nagmani Kumar Vivek Kumar Ashish Kumar Md. Irshadul Haque	Business Based	All Terrain Vehicle with Magnetic Heading	Mr. Bhaskar Ranjan	PO3, PO4, PO5, PO6, PSO2, PSO3	SDG07,SDG09, SDG11
6.	1993918601 1993918602 1992018011	Prashun Bharti Jyoti Kumari Rajeev Kumar	Business Based	GPS Clock with Humidity and temperature display.	Mr. Ragunath A	PO3, PO4, PO5, PO6, PSO2, PSO3	SDG09, SDG11

In conclusion, projects in Electrical and Electronics 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 and Electronics Engineers.**

C. Process for monitoring and evaluation (5)

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:

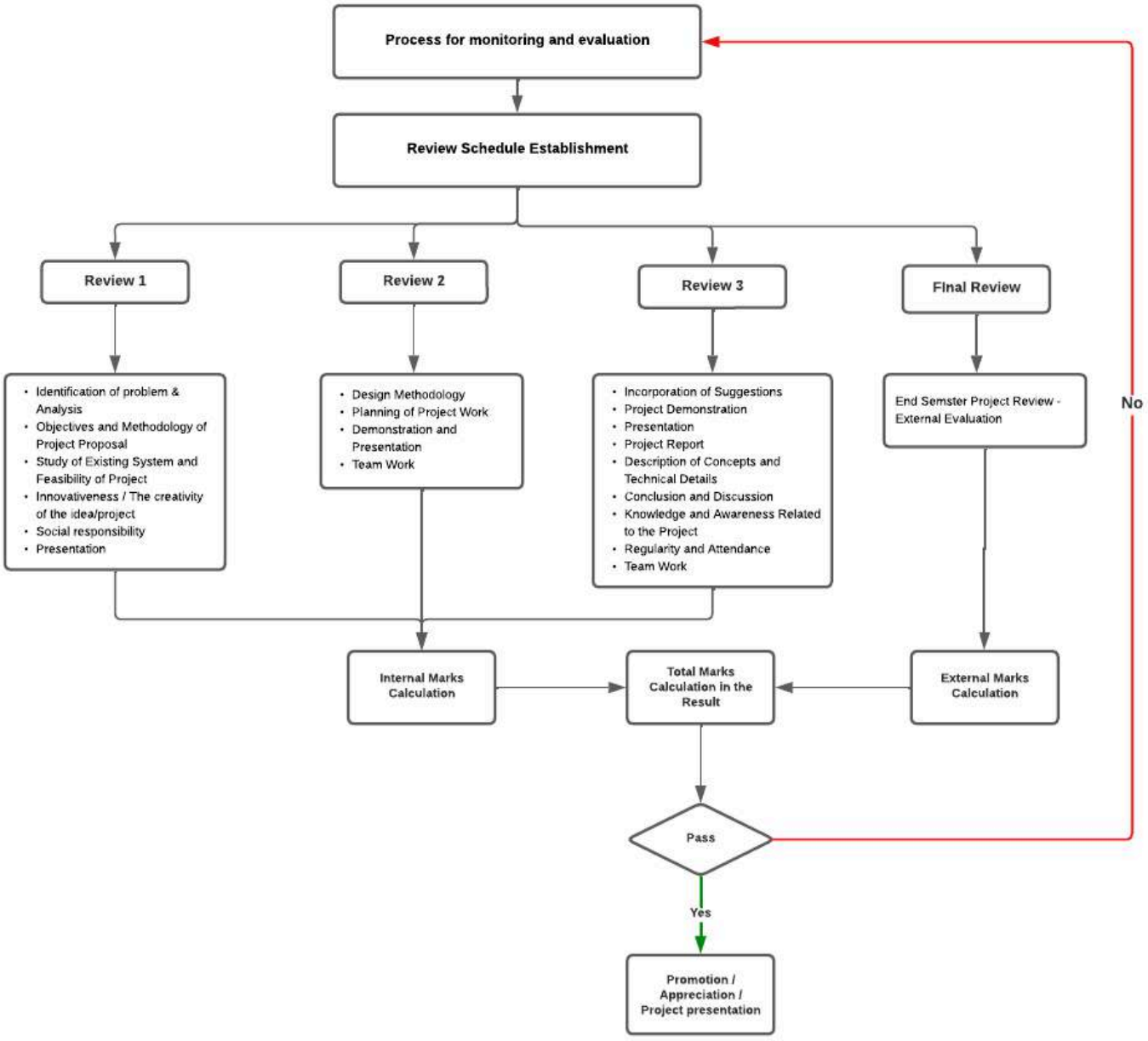
- The progression and evaluation of the work are discussed at every review by the project committee members and the project coordinator.
- These assessments and discussions are documented in the student project diary.

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 Presentation	15 Marks
	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 (5)

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.

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

Internal Marks: 30 Marks

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.

External Marks: 70 Marks

Total Evaluation:

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 (12)

- 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.

Sl.No	Register Number	Name of the Student	Project Type	Project Title	Project Guide	Relevance of PO's / PSO's	Relevance of SDG
1	1993920014 1993920601 1993920006 1993920034	Pradeep Kumar Priska Kumari Anurag Ranjan Smriti Kumari	Community Based	Generator Load Moderator	Mr. Ragunath A	PO2, PO3, PO5, PO6, PSO2, PSO3	SDG07, SDG09, SDG12
2	1993920030 1993920024 1993920039 1993920020	Shivam Kumar Anjali Kumari Rajiya Begam Srikant Kumar	Business Based	CNC Plotter	Ms. Pathma Priya	PO3, PO4, PO5, PO6, PSO2, PSO3	SDG08, SDG09, SDG12
3	1993920032 1993920001 1993920028 1993920018	Pankaj Kumar Afnan Ahmad Shreepad Kumar Singh Sonu Kumar	Community Based	3D printed Sunflower Solar tracker	Mr.Robin S	PO3, PO4, PO5, PO6, PSO2, PSO3	SDG07, SDG09, SDG11, SDG13
4	1993920022 1993920003 1993920010 1993920025	Vikash Kumar Akshay Prakash Kiran Kumari Ashish Kumar Sharma	Business Based	Two Wheel Rover	Mr.Ketu Kumar Sahitya	PO3, PO4, PO5, PO6, PSO2, PSO3	SDG09, SDG11
5	1993920038 1993920602 1993920019 1993920041	Neeraj Kushwaha Mehak Kumari Sonu Kumar Rishikant Yadav	Community Based	Gas Leakage detection system using Arduino & GSM module	Mr.David Naik Vadithe	PO2, PO3, PO5, PO6, PSO2, PSO3	SDG03, SDG09, SDG11, SDG12
6	1993920017 1993920011 1993920031	Rahul Kumar Nibha Kumari Ritik Kumar	Community Based	Air quality monitoring using arduino	Mr.David Naik Vadithe	PO2, PO3, PO5, PO6, PSO2, PSO3	SDG03, SDG09, SDG11, SDG13

F. Papers published /Awards/ Recognition received by projects at State/ National level (5)

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.

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.

LIST OF PROPOSALS SUBMITTED FOR STUDENT PROJECT PROPOSAL FOR 2021-2022

S.No	Project Title	Student Members	Project Guide(s)
1	**Intelligent Robot**	Mr.Harsh Kumar Mr.Abishek Ms.Kanaklata Ms.Suchitha Swati	Dr.J.Grace Jency
2	**Intelligent Room Lighting on Person Presence**	Mr.Nagmani Kumar Mr.Vivek Kumar Mr.Irshadul Haque Mr.Ashish Kumar	Mr.Bhaskar Ranjan

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.

S.No	Name of the First Authors	Name of the Co-Authors (Students)	Title of the Article	Academic Year	Journal Publication Details
1	Mr. Ragunath A	Pradeep Kumar, Priska Kumari, Anurag Ranjan, Smriti Kumari	**Optimizing System Efficiency: Exploring User-Driven Generator Load Moderation for Academic Inquiry**	2022-2023	INTERNATIONAL JOURNAL OF COMMUNICATION SYSTEM & NETWORK TECHNOLOGIES, VOLUME 11, ISSUE 1, ISSN : 2053-6283

2	Ms. Pathma Priya	Shivam Kumar, Anjali Kumari, Rajiya Begam, Srikant Kumar	**Advancements in CNC Plotter Technology: A Comprehensive Review and Future Prospects"**	2022-2023	INTERNATIONAL JOURNAL OF COMMUNICATION SYSTEM & NETWORK TECHNOLOGIES, VOLUME 11, ISSUE 1, ISSN : 2053-6283
3	Mr.Robin S	Pankaj Kumar, Afnan Ahmad, Shreepad Kumar Singh, Sonu Kumar	**Revolutionizing Solar Tracking: A Comprehensive Study on the 3D Printed Sunflower Solar Tracker**	2022-2023	INTERNATIONAL JOURNAL OF COMMUNICATION SYSTEM & NETWORK TECHNOLOGIES, VOLUME 11, ISSUE 2 ISSN : 2053-6283
4	Mr.Ketu Kumar Sahitya	Vikash Kumar, Akshay Prakash, Kiran Kumari, Ashish Kumar Sharma	**Exploring Mobility Solutions: Design and Performance Analysis of a Two-Wheel Rover System**	2022-2023	INTERNATIONAL JOURNAL OF COMMUNICATION SYSTEM & NETWORK TECHNOLOGIES, VOLUME 11, ISSUE 2 ISSN : 2053-6283
5	Mr.David Naik Vadithe	Neeraj Kushwaha, Mehak Kumari , Sonu Kumar, Rishikant Yadav	**Smart Gas Leakage Detection System: Arduino and GSM Integration for Real-Time Monitoring and Alert**	2022-2023	INTERNATIONAL JOURNAL OF COMMUNICATION SYSTEM & NETWORK TECHNOLOGIES, VOLUME 11, ISSUE 3 ISSN : 2053-6283
6	Mrs. Pameela M	Shweta Kumari, Aryan Kumar, Kumari Divya Bharati, Priyanka Kumari	**Empowering Hygiene: Design and Development of an Arduino-Based Vending Machine for Sanitary Pads and Sanitizers**	2021-2022	INTERNATIONAL JOURNAL OF COMMUNICATION SYSTEM & NETWORK TECHNOLOGIES, VOLUME 10, ISSUE 1, ISSN : 2053-6283
7	Mr.Robin S	Vikash Kumar, Aman Kumar, Soni kumari, Manish Kumar, Anjali Kumari	**Efficient Information Dissemination: Design and Implementation of a Wireless Notice Board System**	2021-2022	INTERNATIONAL JOURNAL OF COMMUNICATION SYSTEM & NETWORK TECHNOLOGIES, VOLUME 10, ISSUE 2, ISSN : 2053-6283
8	Mr.David Naik Vadithe	Raj Aaryan, Suraj Kumar, Sonu Kumar, Vikash Kumar	**Enhanced Safety through IoT: Design and Implementation of a Smoke and Gas Leakage Detector System**	2021-2022	INTERNATIONAL JOURNAL OF COMMUNICATION SYSTEM & NETWORK TECHNOLOGIES, VOLUME 10, ISSUE 2, ISSN : 2053-6283
9	Mr. Ketu Kumar Sahitya	Ritambhara Kumari, Janki Kumari, Jitendra Kumar, Babul Kumar	**Illuminating Safety: Design and Implementation of an Automatic Emergency Light System for Enhanced Preparedness**	2021-2022	INTERNATIONAL JOURNAL OF COMMUNICATION SYSTEM & NETWORK TECHNOLOGIES, VOLUME 10, ISSUE 2, ISSN : 2053-6283

2.2.5. Industry Interaction and Community Services (30)

A. Industry-supported Labs (02)

This section highlights Gems Polytechnic College's initiatives and efforts in promoting industry interaction and contributing to community services.

AIndustry-supported Labs:

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.

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	EOS, GERMANY

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.

NK Productions Equipments
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.

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 (Guest Lecture / Workshop / Hands-on training, etc.)	Event Topic	Industry Expert (Designation & Company Details)	No.of Students Benefited	Relevance to POs & PSOs
1	08.09.2023	2022-2023	VIth 2020-2023	Seminar	Career Guidance	**Mr.Sankar G**, Associate Manager - Employee Relations Apollo Tyres	23	PO5,PSO3
2	04.09.2023	2022-2023	VIth 2020-2023	Seminar	Career Guidance	**Mr. Pankaj Kumar Dubey**, HR , KP Reliable Technique India Pvt Ltd	23	PO5,PSO3
3	25.08.2023	2022-2023	VIth-2020-2023 IVth-2021-2024	Webinar	Webinar on E-Waste Management	**Dr.J.Senophiyah Mary** , Environmental Technical Expert, Howest Global Consultancies Founder	48	POs-1,6,7 PSOs-3
4	30.01.2023	2022-2023	Vth-2020-2023 III-2021-2024	Guest Lecture	Interaction on Coal based thermal power plant	**Mr.Boopathy Raja**,DGM,NTPC	48	POs-1,5,7 PSOs-3
5	07.01.2023	2022-2023	Vth-2020-2023 III-2021-2024	Workshop & Hands on Training	Electrical Wiring	**Mr.Ketu Kumar Sahitya**, Lecturer,GEMS Polytechnic College	48	POs-5,6,7 PSOs-2
6	11.08.2022	2022-2023	IVth-2020-2023	Seminar	Railway trends	**Mr.Abner**, PGD Rail & Metro technology, Mumbai	23	POs-1,5,7 PSOs-1,2
7	22.11.2021	2021-2022	VIth-2019-2022	Workshop	Robotics & Arduino programming	**Mr.Dinesh Palappan**, Startup & Entrepreneurship Coordinator.	30	POs-3,4,6 PSOs-2
8	03.09.2021	2021-2022	Vth-2019-2022	Workshop	Circuit Simulation Android App development Workshop	**Mr.Dinesh Palappan**, Startup & Entrepreneurship Coordinator.	29	POs-3,4,7 PSOs-3

9	18.11.2019	2019-2020	III,V & EEE	Guest Lecturer	Seminar on Industrial Pump	**Mr.Bernard Papuraj** (General Manager)	32	PO5 & PO7, PSO3
10	08.03.2019 -09.03.2019	2018-2019	IV,VI & EEE	Technical Workshop	Embedded System & IOT	**Mr.Dinesh Palappan** (Sr. Embedded Software Engineer)	47	PO4 & PO6, PSO2

C. Industrial Visits/Tours for Students:

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 PO's & PSO's
1	2021-2022	4th	2019-2022	**SONE WESTERN LINK CANAL H.E. PROJECT(BHPC), DEHRI ON SONE**	28	PO(1,2,3,4,5,6,7) & PSO3
2	2021-2022	5th	2019-2022	**SBPDC LIMITED 220/132/33 KV SONE NAGAR, BARUN GRID , BARUN AURANGABAD, BIHAR**	31	PO(1,2,3,4,5,6,7) & PSO3
3	2022-2023	6th	2020-2023	**INDRAPURI BARRAGE HYDRO POWER PLANT, INDRAPURI, ROHTAS, BIHAR**	21	PO(1,2,3,4,5,6,7) & PSO3

D. Industrial Training/Internship:

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	SBPDCL, Patna	5	30
2		In Plant Training at MRT, Patna	5	30

3		Krishna Automation and Controls PVT. Ltd.	1	30
4		132/33 KV GSS, Gaighat	4	30
5		Bhartiya Rail Bijlee Company Limited (A Joint Venture of NTPC and Ministry of Railways) Nabinagar	2	30
6		S.K. Memorial, Bankipur & M.R.T. Lab, Pesu (East) Patna	1	30
7		132/33 KV GSS , Jakkanpur	1	30
8		NTPC Limited Barauni (Bihar)	2	30
9	2021-2022	SBPTLC, Patna	13	30
10		SBPDCL,Patna & Aurangabad	8	30
11		Lumbini Hyundai, Bodhgaya	1	30
12		Bhartiya Rail Bijlee Company, Nabinagar,Bihar	1	30
13		Sonasati Organics Pvt Ltd, Baikunthpur, Dist- Gopalganj, Bihar.	1	30
14		Magadh Sugar & Energy Ltd, Narkatiaganj, West Champaran,Bihae-845455	2	30
15		TATA Motors, Aurangabad.	1	30
16	2020-2021	Dehri on sone Hydro Power plant 4*1.65MW	3	30
17		Baurun Grid 220KV/132KV/33KV	3	30
18		SBPDCL Aurangabad	2	30

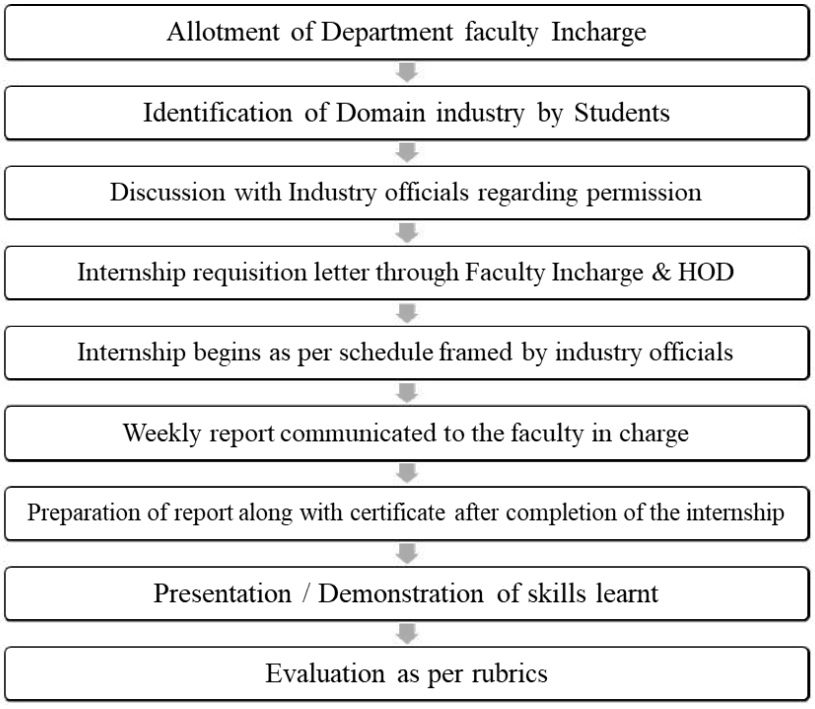
E. Post Training/Internship Assessment:

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:

In our commitment to fostering social responsibility and innovation, the Department of Electrical and Electronics 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	2022-2023	**3D printed Sunflower Solar tracker**	Pankaj Kumar	Mr.Robin S	1. This involvement fosters a sense of community ownership and provides an educational platform for residents to learn about renewable energy and 3D printing technology.
2			Afnan Ahmad		
3			Shreepad Kumar Singhv		2. This not only serves as a functional demonstration of renewable energy but also prompts conversations among community members about sustainability and environmental consciousness.
4			Sonu Kumar		
5	2021-2022	**Arduino based vending machine for sanitary pad and sanitizer**	Shweta Kumari	Mrs. Pameela M	1.The Arduino-based vending machine enhances community accessibility to essential hygiene products, ensuring that individuals, especially women, have a convenient and discreet way to obtain sanitary pads and sanitizers. 2.Through the inclusion of an educational component, the vending machine serves as a health education hub, offering valuable information on hygiene practices and menstrual health. This not only empowers individuals with knowledge but also creates a communal space for open discussions, reducing stigma surrounding these topics.
6			Aryan Kumar		
7			Kumari Divya Bharati		
8			Priyanka Kumari		

9	2020-2021	**Automatic Irrigation System for Home Garden**	Ranjan Kumar	Mr. Dinesh Palappan SAPC	1.Implementing an automatic irrigation system for a home garden helps in efficient water usage by delivering the right amount of water to plants based on their specific needs. This sustainable approach promotes water conservation within the community, aligning with environmental consciousness and responsible resource management. 2.Encourage community members to adopt automatic irrigation systems for their home gardens, fostering a collective commitment to green spaces. This shared interest in gardening and landscaping can lead to the formation of community gardening clubs or events,promoting a sense of unity and shared responsibility for maintaining vibrant, healthy neighborhoods.
10			Shweta Kumari		
11			Kaushal Kumar		
12			Devashish Kumar		

2.2.6. Information Access Facilities and Student-Centric Learning Initiatives (15)

A. Availability of facilities and effective Utilization; specify the facilities, materials and scope for self-learning, Webinars, NPTEL Podcast, MOOCs etc. (10)

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 information access and the effective utilization of these resources, along with initiatives that prioritize student-centered learning.

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 books that can enhance their understanding and knowledge beyond their course requirements.

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 that can deepen students' knowledge in their respective fields.

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 organized format aids students' comprehension.

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 study at their convenience.

Educational Videos: Multimedia content, including videos, audio, images, animations, and interactive material, enriches the learning experience. Educational YouTube channels are utilized to showcase real industry videos and animations that elucidate working principles. Videos provide students with control over their learning pace and the 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 educational resources.

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 resources empower students to develop their learning skills and explore topics in depth.

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 of the course structure.

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, SPoken tutorial, IIT Bombay, and Cisco. Through these platforms, students receive comprehensive training, evaluations, and certifications, expanding their skill set and knowledge base.

B. Student Centric Learning Initiatives & Effective Implementation (05)

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 study materials and resources aligned with their learning preferences and goals.

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, clarify doubts, and collaborate on projects.

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 and critical-thinking abilities.

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 resources and fostering a supportive and personalized learning environment, we equip our students with the knowledge and skills needed for success in their academic and professional journeys.

2.2.7. New Initiatives for Embedding Professional Skills (15)
A. Employability skill enhancement Initiatives and effective implementation (08)

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 assessions, 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 provider instead of Job seekers.

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, Lightnsalt 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 (07)

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 (10)

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 extra-curricular activities we organize for our students. These activities play a pivotal role in enhancing their overall personality and preparing them 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.

Ministry of Education
Government of India

Indian Institute of Technology
Kharagpur

National Digital Library of India

CERTIFICATE OF REGISTRATION

This is to certify that
"GEMS Polytechnic College"
is registered as an NDLI Club under the
National Digital Library of India.

NDLI CLUB PARTNER
National Digital Library of India
- LEARN. SHARE. GROW. -

Registration Number- INBRNC3K4TTETNZ

Date of Registration- 08/04/2021

Validity Extended Up-to- 08/04/2024

Prof. Kalyan Prasad Sinhamahapatra
Joint Principal Investigator
National Digital Library of India Project
Chairman
Central Library IIT Kharagpur
Professor
Aerospace Engineering, IIT Kharagpur

Dr. B. Sutradhar
Joint Principal Investigator
National Digital Library of India Project
Librarian
Central Library IIT Kharagpur

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 a wide range of sports events that not only provide physical exercise but also instill values of discipline, dedication, and fair play.

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. The fest features a plethora of technical events, including:

1. Singing
2. Paper Presentation
3. Technical Quiz
4. Photography
5. Debate
6. Just a Minute (JAM)
7. Best Out of Waste
8. Treasure Hunt
9. Cooking Without Fire
10. Short Film
11. Typing Speed
12. 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.

<u>NSS (National Service Scheme):</u>

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 activities, including:

Tree Plantation: Contributing to environmental conservation.

Social Awareness Programs: Promoting awareness about critical societal issues.
Cleaning the Environment (Swachh Bharat): Actively participating in cleanliness drives.
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.

NSS Approval Letter:

भारत सरकार
युवा कार्यक्रम एवं खेल मंत्रालय
राष्ट्रीय सेवा योजना, क्षेत्रीय निदेशालय
C विंग, 7वां तल,
कर्पूरी ठाकुर सदन, सी.जी.ओ. कॉम्प्लेक्स
आशियाना – दीघा रोड, पटना – 800 025
फो० : 0612–2952934
ई–मेल : nssrcpatna@gmail.com
patna-nss@nic.in

Government of India
Ministry of Youth Affairs & Sports
Regional Directorate of NSS
"C" Wing, 7th Floor,
Karpoori Thakur Sadan, CGO Complex
Ashiyana - Digha Road, Patna - 800 025
Phone.: 0612-2952934
E-mail : nssrcpatna@gmail.com
patna-nss@nic.in

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 12th and 15th 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,

for (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






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 also help them develop a well-rounded personality, enhancing their academic, physical, and social skills while instilling values that will serve them well in their future endeavors.

Criterion 3

Course Outcomes and Program Outcomes

CRITERION - 3	COURSE OUTCOMES AND PROGRAM OUTCOMES	100

Define the Program Outcomes :

PO 1	**Basic and Discipline specific knowledge:** Apply Knowledge of basic Mathematics, Science and Engineering Fundamentals and Engineering Speciation 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 practice 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.

Define the Program Specific Outcomes :

On completion of Diploma in Electrical and Electronics Engineering degree students will be able to

PSO1	Provide strong foundation in mathematical, science, electrical and electronics engineering to solve electrical and electronics problems.
PSO2	Understand, analyze, simulate and design electrical machines, modern electrical drives, latest electronic systems, Embedded and automation of systems and to determine their performance through testing.
PSO3	To develop and implement electrical and electronics allied interdisciplinary projects to meet the demands of industry and to provide solutions for energy conservation and sustainability.

3.1. Establish the correlation between the courses and the POs and PSOs (20)

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) (5)

Table 3.1.1 Course Outcomes (CO)

The Students will be able to

Course Name	Applied Physics - I	**Course Year**	2022 - 2023	**Semester**	01
C1 02.1	Identify the physical quantities and select their use in engineering solutions and make measurements with accuracy by minimizing different types of error.				
C1 02.2	Explain the scalar and vector quantities and circular motion and conservation of momentum principle to describe rocket propulsion, recoil of gun etc				
C1 02.3	Explain work, energy and power and their units. Describe forms of friction and methods to minimize friction between deterrent surfaces				
C1 02.4	Compare and relate physical properties associated with linear motion and rotational motion and conservation of angular momentum principle to known problems				
C1 02.5	Demonstrate stress and strain, Modulus of rigidity and surface tension, viscosity of liquids and Hydrodynamics concepts.				
C1 02.6	Distinguish between conduction, convection and radiation; identify different methods for reducing heat losses and mode of heat transfer between bodies at different temperatures				

Course Name	Fundamental of Electrical and Electronics Engg.	**Course Year**	2022 - 2023	**Semester**	02
C1 15.1	Explain the fundamentals of Diode and its family.				
C1 15.2	Explain the Operational Amplifier circuit and block diagram				
C1 15.3	Apply Boolean algebra for constructing logic gates.				
C1 15.4	Explain the fundamentals of Electric Circuit & Magnetic Circuit.				
C1 15.5	Explain the Basic Concept of A.C Circuits.				
C1 15.6	Explain the basic concept of transformers & motors.				

Course Name	Electrical and Electronics Measurements	**Course Year**	2022 - 2023	**Semester**	03
C2 03.1	Describe the characteristics of the electrical measuring instrument.				
C2 03.2	Explain different types of measuring instruments for measuring voltage and current.				
C2 03.3	Explain different types of measuring instruments for measuring electric power				
C2 03.4	Explain different types of measuring instruments for measuring electric energy.				
C2 03.5	Identify different types of electrical instruments for measuring various ranges of electrical parameters.				

Course Name	Electrical Power Transmission and Distribution	**Course Year**	2022 - 2023	**Semester**	04
C2 14.1	Interpret the normal operation of the electric transmission and distribution systems.				
C2 14.2	Explain the functioning of the short, medium and high voltage transmission system.				
C2 14.3	Interpret the parameters of the extra high voltage transmission system.				
C2 14.4	Illustrate the components of the transmission and distribution lines.				
C2 14.5	Explain the functioning of the low voltage AC distribution system.				

Course Name	Energy Conservation and Audit	**Course Year**	2022 - 2023	**Semester**	05
C3 02.1	Explain energy conservation policies in India.				
C3 02.2	Explain energy conservation techniques in electrical machines.				
C3 02.3	Describe energy conservation techniques in electrical installations				
C3 02.4	Describe Co-generation and relevant tariff for reducing losses.				
C3 02.5	Explain energy audit for electrical systems.				

Course Name	Utilization of Electrical Energy	**Course Year**	2022 - 2023	**Semester**	06
C3 14.1	Explain the important terms of illumination and lighting system.				
C3 14.2	Describe the process of electric heating and welding.				
C3 14.3	Interpret the optimized working of elevators.				
C3 14.4	Explain the importance and uses of electric drives.				
C3 14.5	Implement the economics operation of utilizing electrical energy				

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) (5)

Table 3.1.2 CO - PO Matrices

Course Name	Applied Physics - I			**Course Year**	2022 -2023	**Semester**	01
PO / CO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**
C1 02.1	3	2	3	2	1	-	-
C1 02.2	3	3	2	1	1	-	-
C1 02.3	3	2	1	2	1	-	-
C1 02.4	3	2	1	1	1	-	-
C1 02.5	3	2	1	1	1	-	-
C1 02.6	3	3	2	1	1	-	-

PSO / CO	**PSO1**	**PSO2**	**PSO3**
C1 02.1	3	2	-
C1 02.2	2	1	-
C1 02.3	2	1	1
C1 02.4	2	2	1
C1 02.5	2	2	-
C1 02.6	2	1	1

Course Name	Fundamentals of Electrical and Electronics Engg.			**Course Year**	2022 - 2023	**Semester**	02
CO \ PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**
C1 15.1	3	-	-	1	-	-	3
C1 15.2	-	-	-	2	-	-	1
C1 15.3	-	-	-	-	-	2	-
C1 15.4	-	-	-	2	-	1	-
C1 15.5	3	-	-	-	-	-	2
C1 15.6	2	-	1	-	-	-	1

CO \ PSO	**PSO1**	**PSO2**	**PSO3**
C1 15.1	-	1	-
C1 15.2	-	1	-
C1 15.3	-	-	1
C1 15.4	-	1	-
C1 15.5	-	1	-
C1 15.6	1	-	-

Course Name	Electrical and Electronics Measurements			**Course Year**	2022 -2023	**Semester**	03
CO \ PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**
C2 03.1	3	1	-	-	1	-	-
C2 03.2	3	-	1	-	-	-	-
C2 03.3	3	-	2	1	-	-	-
C2 03.4	3	-	2	2	-	-	1
C2 03.5	3	-	2	2	-	-	1

PSO / CO	PSO1	PSO2	PSO3
C2 03.1	2	-	-
C2 03.2	2	1	-
C2 03.3	2	1	1
C2 03.4	2	1	1
C2 03.5	2	1	-

Course Name	Electrical Power Transmission and Distribution			**Course Year**	2022 -2023	**Semester**	04
PO / CO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**
C2 14.1	3	-	-	-	-	-	-
C2 14.2	3	2	-	-	-	-	-
C2 14.3	3	-	-	-	-	-	-
C2 14.4	3	2	-	-	-	-	-
C2 14.5	3	2	-	-	1	-	-

PSO / CO	PSO1	PSO2	PSO3
C2 14.1	3	1	-
C2 14.2	3	1	-
C2 14.3	2	1	-
C2 14.4	2	1	-
C2 14.5	3	1	-

Course Name	Energy Conservation and Audit			Course Year	2022 - 2023	Semester	05
PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
C3 02.1	3	-	-	-	1	-	-
C3 02.2	3	1	-	-	-	-	-
C3 02.3	3	1	-	-	-	-	-
C3 02.4	3	1	-	-	1	-	-
C3 02.5	3	1	-	-	1	-	-

PSO / CO	PSO1	PSO2	PSO3
C3 02.1	-	-	-
C3 02.2	-	-	1
C3 02.3	-	-	1
C3 02.4	-	-	1
C3 02.5	-	-	1

Course Name	Utilization of Electrical Energy			Course Year	2022 - 2023	Semester	06
PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
C3 14.1	3	2	-	-	-	-	-
C3 14.2	3	1	-	2	2	2	-
C3 14.3	3	-	-	-	3	-	2
C3 14.4	3	2	-	-	3	-	2
C3 14.5	3	1	-	-	2	-	1

PSO / CO	PSO1	PSO2	PSO3
C3 14.1	2	-	-
C3 14.2	-	-	-
C3 14.3	-	-	-
C3 14.4	3	2	3
C3 14.5	1	-	-

3.1.3 - A Program level Course-PO matrix of all courses INCLUDING first year courses (10)

Table 3.1.3 A Course - PO Matrix

Course	Course Name	PO1	PO2	PO3	PO4	PO5	PO6	PO7
C1 01	Mathematics - I	**3**	**1.4**	**-**	**-**	**-**	**-**	**-**
C1 02	Applied Physics - I	**3**	**2.33**	**1.67**	**1.33**	**1**	**-**	**-**
C1 03	Applied Chemistry - I	**3**	**2**	**-**	**1**	**1**	**-**	**2**
C1 04	Communication Skills in English	**-**	**-**	**-**	**-**	**2**	**2**	**3**
C1 05	Engineering Graphics	**2.8**	**-**	**2.5**	**2.33**	**-**	**-**	**2.4**
C1 06	Applied Physics Lab - I	**3**	**2**	**-**	**-**	**-**	**-**	**1**
C1 07	Applied Chemistry Lab - I	**3**	**1**	**1**	**2**	**2**	**1**	**2**
C1 08	Communication Skills in English Lab	**2**	**-**	**-**	**-**	**2.75**	**3**	**2.25**
C1 09	Engg. Workshop Practice (T.W)	**2**	**-**	**-**	**2**	**1**	**-**	**1**
C1 10	Sports and Yoga (T.W)	**-**	**-**	**1**	**-**	**2.4**	**2**	**2.4**
C1 11	KYP /IT Essential /Python?Others (T.W)	**3**	**-**	**-**	**2**	**2**	**-**	**1**
C1 12	Mathematics - II	**3**	**2.4**	**2.6**	**2.6**	**2.6**	**2.2**	**2.6**
C1 13	Applied Physics - II	**2.6**	**1.4**	**-**	**1**	**1**	**-**	**1.2**
C1 14	Introduction to IT Systems	**2**	**2**	**1.67**	**1.5**	**1**	**1.67**	**1.6**
C1 15	Fundamental of Electrical & Electronics Engg	**2.67**	**-**	**1**	**1.67**	**-**	**1.5**	**1.75**

C1 16	Engineering Mechanics	**3**	**1**	**2.2**	**1.8**	**1.8**	**2.5**	**-**
C1 17	Applied Physics Lab - II	**2.6**	**1.8**	**1.2**	**-**	**-**	**-**	**-**
C1 18	Introduction to IT System Lab	**2**	**-**	**-**	**2**	**2**	**2**	**2.75**
C1 19	Fundamental of Electrical and Electronics Engg. Lab	**2.5**	**-**	**2**	**2.5**	**1**	**1.67**	**1.5**
C1 20	Engineering Mechanics Lab	**-**	**1**	**-**	**3**	**2**	**1**	**-**
C1 21	Course under MOOCS /SWAYAM /ETC /Others (T.W)	**2.67**	**2**	**1.33**	**-**	**-**	**-**	**-**
C1 22	KYP/IT Essential /Python/Others (T.W)	**3**	**2.75**	**3**	**2.75**	**2**	**2**	**2**
C1 23	Environmental Science (T.W)	**3**	**2**	**-**	**-**	**1**	**-**	**2**
C2 01	Introduction to Electrical Power Generation System	**3**	**3**	**-**	**-**	**2**	**-**	**1**
C2 02	Electrical Circuits	**3**	**2.2**	**-**	**-**	**-**	**-**	**-**
C2 03	Electrical and Electronics Measurements	**3**	**1**	**1.75**	**1.67**	**1**	**-**	**1**
C2 04	Electric Motors and Transformers	**2.8**	**1.5**	**1**	**-**	**-**	**-**	**1.5**
C2 05	Fundamental of Basic Electronics & Digital Electronics	**2.4**	**2.33**	**2**	**-**	**-**	**-**	**-**
C2 06	Introduction to Electrical Power Generation Systems Laboratory	**2**	**-**	**-**	**3**	**2**	**-**	**1**
C2 07	Electrical Circuits Laboratory	**3**	**2**	**-**	**1**	**-**	**-**	**-**
C2 08	Web Technology Laboratory	**-**	**2**	**2.75**	**2.67**	**-**	**2**	**2**
C2 09	Electrical and Electronics Measurements Laboratory	**3**	**1**	**1.75**	**1.67**	**1**	**-**	**1**
C2 10	Electric Motors and Transformers Laboratory	**1.4**	**-**	**-**	**2.8**	**1**	**-**	**-**
C2 11	Python (T.W)	**2**	**-**	**2**	**2**	**-**	**2**	**2.33**
C2 12	Fundamentals of Basic Electronics and Digital Electronics (T.W)	**3**	**-**	**-**	**-**	**-**	**-**	**-**
C2 13	Power Electronics	**3**	**2**	**-**	**-**	**1**	**-**	**1**
C2 14	Electrical Power Transmission and Distribution	**3**	**2**	**-**	**-**	**1**	**-**	**-**
C2 15	Induction, Synchronous and Special	**2.4**	**1.5**	**-**	**-**	**-**	**-**	**1**

	Electrical Machines							
C2 16	Solar Power Technologies	**3**	**-**	**-**	**-**	**1.6**	**-**	**1.67**
C2 17	Industrial Drives	**3**	**1**	**-**	**1**	**-**	**-**	**-**
C2 18	Power Electronics Laboratory	**2.4**	**1.6**	**-**	**-**	**2**	**-**	**1**
C2 19	Induction, Synchronous and Special Electrical Machines Laboratory	**1.4**	**-**	**-**	**2**	**-**	**-**	**1**
C2 20	Industrial Drives Laboratory	**3**	**1**	**-**	**1**	**-**	**-**	**-**
C2 21	MATLab	**3**	**2**	**-**	**3**	**-**	**-**	**1.5**
C2 22	Electric Power Transmission and Distribution (T.W)	**3**	**-**	**-**	**-**	**-**	**-**	**1**
C2 23	Solar Power Technologies (T.W)	**3**	**-**	**-**	**-**	**1.6**	**-**	**1.67**
C2 24	Course under MOOCs/ SWAYAM/ AutoCAD in Electrical Engineering or Others	**2.33**	**-**	**-**	**2.67**	**2.33**	**2**	**2**
C2 25	Summer Training / Industrial Visits	**2.67**	**-**	**-**	**1**	**-**	**-**	**1**
C3 01	Microprocessor and Microcontroller	**3**	**-**	**2**	**-**	**-**	**-**	**-**
C3 02	Energy Conservation and Audit	**3**	**1**	**-**	**-**	**1**	**-**	**-**
C3 03	Switchgear and Protection	**2.8**	**1**	**-**	**1**	**-**	**-**	**-**
C3 04	Electric Traction	**2**	**-**	**-**	**-**	**-**	**-**	**-**
C3 05	Soft Computing Techniques	**2.8**	**2**	**1.67**	**-**	**1**	**-**	**1.33**
C3 06	Microprocessor and Microcontroller Laboratory	**2**	**-**	**2**	**3**	**-**	**-**	**-**
C3 07	Energy Conservation and Audit Laboratory	**1.33**	**2.67**	**2.5**	**2**	**1.75**	**1.75**	**1**
C3 08	Switchgear and Protection Laboratory	**1**	**1.67**	**-**	**2.6**	**-**	**-**	**-**
C3 09	Electric Traction Laboratory	**2**	**-**	**-**	**-**	**-**	**-**	**-**
C3 10	Course under MOOCs/SWAYAM /AutoCAD in Electrical Engineering or Others	**2**	**-**	**-**	**1**	**-**	**-**	**1**
C3 11	Minor Project	**-**	**3**	**2**	**-**	**2**	**3**	**-**
C3 12	Entrepreneurship and Start-Ups	**2**	**1**	**1**	**-**	**2**	**2.86**	**1.4**
C3 13	Building Electrification	**2**	**-**	**2**	**-**	**-**	**-**	**2**

C3 14	Utilization of Electrical Energy	**3**	**1.5**	**-**	**2**	**2.5**	**2**	**1.67**
C3 15	Network Theory	**3**	**2**	**1.5**	**2**	**-**	**-**	**-**
C3 16	Project Management	**3**	**-**	**-**	**-**	**-**	**3**	**1**
C3 17	Building Electrification Laboratory	**3**	**-**	**2**	**1**	**1**	**1**	**-**
C3 18	Seminar	**3**	**2.5**	**3**	**2**	**2**	**3**	**1.25**
C3 19	Major Project	**-**	**3**	**2**	**2**	**2**	**3**	**1**
C3 20	Course under MOOCs/NPTEL/Others (T.W)	**1.5**	**1**	**1.5**	**1**	**1**	**1.5**	**1.33**
	Direct PO Target	**2.58**	**1.79**	**1.85**	**1.91**	**1.61**	**2.07**	**1.55**

3.1.3 - B Program level Course-PSO matrix of all courses INCLUDING first year courses

Table 3.1.3 B Course - PSO Matrix

Course	Course Name	PSO1	PSO2	PSO3
C1 01	Mathematics - I	1	-	-
C1 02	Applied Physics - I	2.17	1.5	1
C1 03	Applied Chemistry - I	-	-	-
C1 04	Communication Skills in English	-	-	-
C1 05	Engineering Graphics	-	-	-
C1 06	Applied Physics Lab - I	-	-	-
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)	1	-	1
C1 11	KYP /IT Essential /Python?Others (T.W)	-	-	-
C1 12	Mathematics - II	2.2	-	2.4
C1 13	Applied Physics - II	-	-	-
C1 14	Introduction to IT Systems	3	2	1
C1 15	Fundamental of Electrical & Electronics Engg	1	1	1
C1 16	Engineering Mechanics	1.6	-	-
C1 17	Applied Physics Lab - II	1.8	1.4	1.2
C1 18	Introduction to IT System Lab	1	1	1.5
C1 19	Fundamental of Electrical and Electronics Engg. Lab	1	1	1
C1 20	Engineering Mechanics Lab	-	-	-
C1 21	Course under MOOCS /SWAYAM /ETC /Others (T.W)	2.33	1.33	1.33
C1 22	KYP/IT Essential /Python/Others (T.W)	2.5	-	3
C1 23	Environmental Science (T.W)	-	-	-

C2 01	Introduction to Electrical Power Generation System	3	-	2
C2 02	Electrical Circuits	2	-	-
C2 03	Electrical and Electronics Measurements	2	1	1
C2 04	Electric Motors and Transformers	2.8	1.2	-
C2 05	Fundamental of Basic Electronics & Digital Electronics	1	-	-
C2 06	Introduction to Electrical Power Generation Systems Laboratory	1	-	2
C2 07	Electrical Circuits Laboratory	2	1	1
C2 08	Web Technology Laboratory	-	-	-
C2 09	Electrical and Electronics Measurements Laboratory	1	1	1
C2 10	Electric Motors and Transformers Laboratory	1.6	1.6	-
C2 11	Python (T.W)	-	-	-
C2 12	Fundamentals of Basic Electronics and Digital Electronics (T.W)	1.6	-	-
C2 13	Power Electronics	2	2	2
C2 14	Electrical Power Transmission and Distribution	2.6	1	-
C2 15	Induction, Synchronous and Special Electrical Machines	2.4	1	-
C2 16	Solar Power Technologies	1	-	-
C2 17	Industrial Drives	2	3	2.33
C2 18	Power Electronics Laboratory	2	-	2
C2 19	Induction, Synchronous and Special Electrical Machines Laboratory	1.4	1.4	-
C2 20	Industrial Drives Laboratory	2	3	2.33
C2 21	MATLab	1.5	2	-
C2 22	Electric Power Transmission and Distribution (T.W)	2.8	1	-

C2 23	Solar Power Technologies (T.W)	1	-	-
C2 24	Course under MOOCs/ SWAYAM/ AutoCAD in Electrical Engineering or Others	2.33	1.67	2
C2 25	Summer Training / Industrial Visits	2.67	1	-
C3 01	Microprocessor and Microcontroller	2	1	-
C3 02	Energy Conservation and Audit	-	-	1
C3 03	Switchgear and Protection	2.8	1	1
C3 04	Electric Traction	1.75	2	-
C3 05	Soft Computing Techniques	1	-	-
C3 06	Microprocessor and Microcontroller Laboratory	1	-	-
C3 07	Energy Conservation and Audit Laboratory	2	1	-
C3 08	Switchgear and Protection Laboratory	1	-	-
C3 09	Electric Traction Laboratory	1.75	2	-
C3 10	Course under MOOCs/SWAYAM /AutoCAD in Electrical Engineering or Others	1	-	1
C3 11	Minor Project	-	2	2.5
C3 12	Entrepreneurship and Start-Ups	-	-	-
C3 13	Building Electrification	2	-	-
C3 14	Utilization of Electrical Energy	2	2	3
C3 15	Network Theory	1.83	-	-
C3 16	Project Management	-	-	-
C3 17	Building Electrification Laboratory	-	-	2
C3 18	Seminar	3	2	2
C3 19	Major Project	-	2	2
C3 20	Course under MOOCs/NPTEL/Others (T.W)	1	1	1
	Direct PSO Target	**1.81**	**1.54**	**1.69**

3.2 Attainment of Course Outcomes (40)

3.2.1 Describe the assessment processes used to gather the data upon which the evaluation of Course Outcome is based (10)

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:

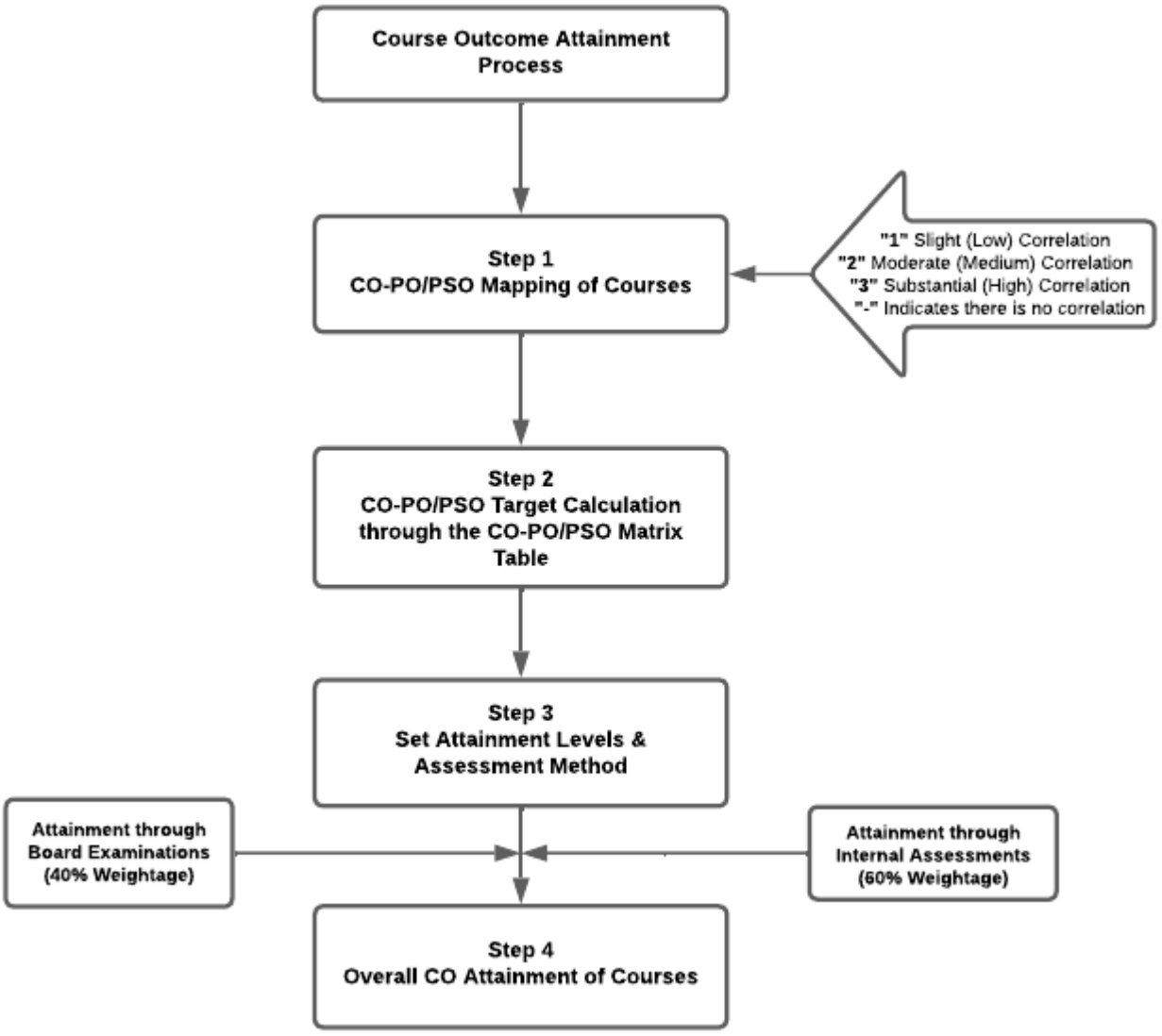
Course-End Survey :

- 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 (30)

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.
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%**

Theory Course Internal / External Examination Attainment Plan						
	S.No	**Evaluation**	**Exams**	**Syllabus**	**Outcome Weightage**	**Total Marks**
Direct Attainment	1	**Internal**	CLASS TEST - 1	30%	30%	35
	2		CLASS TEST - 2	60%	30%	35
	3		CLASS TEST - 3	80%	30%	35
	4		Assignment - 1	1st 50%	5%	25
	5		Assignment - 2	2nd 50%	5%	25
	Overall Internal Outcome Weightage				100%	
	Internal Exam Outcome Attainment for 60% (A)				60%	
	6	**External**	SBTE END SEMESTER	100%	100%	100
	External Exam Outcome Attainment for 40% (B)				40%	
	Total Direct Outcome Attainment for 100% (A+B)				100%	
	Total Direct Outcome attainment for 80% (C)				**80%**	
Indirect Attainment	Course End Survey				100%	
	Course End Survey for 20% (D)				**20%**	
Total Attainment Direct + Indirect (C+D)					**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 External Assessment	Overall CO Attainment
2001101	Mathematics - I	1.79	1.2	**2.99**
2001102	Applied Physics - I	1.04	1.2	**2.24**
2001103	Applied Chemistry - I	1.8	1.2	**3**
2001104	Communication Skills in English	1.4	1.2	**2.6**
2001105	Engineering Graphics	1.8	1.2	**3**
2001106	Applied Physics Lab - I	1.8	1.2	**3**
2001107	Applied Chemistry Lab - I	1.8	1.2	**3**
2001108	Communication Skills in English Lab	1.8	1.2	**3**
2001109	Engg. Workshop Practice (T.W)	1.8	1.2	**3**
2001110	Sports and Yoga (T.W)	1.8	1.2	**3**
2001111	KYP /IT Essential /Python?Others (T.W)	1.8	1.2	**3**
2002201	Mathematics - II	1.8	1.2	**3**
2002202	Applied Physics - II	0.74	1.8	**2.54**
2002203	Introduction to IT Systems	1.8	1.2	**3**
2002204	Fundamental of Electrical & Electronics Engg	1.46	1.2	**2.66**
2002205	Engineering Mechanics	1.8	1.2	**3**
2002206	Applied Physics Lab - II	1.8	1.2	**3**
2002207	Introduction to IT System Lab	1.8	1.2	**3**
2002208	Fundamental of Electrical and Electronics Engg. Lab	1.8	1.2	**3**
2002209	Engineering Mechanics Lab	1.8	0.6	**2.4**
2002210	Course under MOOCS /SWAYAM /ETC /Others (T.W)	1.8	1.2	**3**
2002211	KYP/IT Essential /Python/Others (T.W)	1.8	1.2	**3**

2002212	Environmental Science (T.W)	1.8	1.2	**3**
2020301	Introduction to Electrical Power Generation System	1.8	1.2	**3**
2020302	Electrical Circuits	0.77	1.2	**1.97**
2020303	Electrical and Electronics Measurements	0.94	1.2	**2.14**
2020304	Electric Motors and Transformers	0.49	1.2	**1.69**
2020305	Fundamental of Basic Electronics & Digital Electronics	1.33	0.88	**2.21**
2020306	Introduction to Electrical Power Generation Systems Laboratory	1.8	1.2	**3**
2020307	Electrical Circuits Laboratory	1.8	1.2	**3**
2020308	Web Technology Laboratory	1.8	1.2	**3**
2020309	Electrical and Electronics Measurements Laboratory	1.8	1.2	**3**
2020310	Electric Motors and Transformers Laboratory	1.8	1.2	**3**
2020311	Python (T.W)	1.5	0.98	**2.48**
2020312	Fundamentals of Basic Electronics and Digital Electronics (T.W)	1.45	1.07	**2.52**
2020401	Power Electronics	1.78	1.2	**2.98**
2020402	Electrical Power Transmission and Distribution	1.51	1.2	**2.71**
2020403	Induction, Synchronous and Special Electrical Machines	1.48	1.2	**2.68**
2020404	Solar Power Technologies	1.8	1.2	**3**
2020405	Industrial Drives	1.53	1.2	**2.73**
2020406	Power Electronics Laboratory	1.8	1.2	**3**
2020407	Induction, Synchronous and Special Electrical Machines Laboratory	1.8	1.2	**3**
2020408	Industrial Drives Laboratory	1.8	1.2	**3**
2020409	MATLab	1.8	1.2	**3**
2020410	Electric Power Transmission and Distribution (T.W)			**0**

2020411	Solar Power Technologies (T.W)	1.8	1.2	**3**
2020412	Course under MOOCs/ SWAYAM/ AutoCAD in Electrical Engineering or Others	1.8	1.2	**3**
2020413	Summer Training / Industrial Visits	1.8	1.2	**3**
2020501	Microprocessor and Microcontroller	1.62	1.2	**2.82**
2020502	Energy Conservation and Audit	1.62	1.2	**2.82**
2020503C	Switchgear and Protection	1.65	1.2	**2.85**
2020504C	Electric Traction	1.8	1.2	**3**
2020505B	Soft Computing Techniques	1.3	1.2	**2.5**
2020506	Microprocessor and Microcontroller Laboratory	1.8	1.2	**3**
2020507	Energy Conservation and Audit Laboratory	1.8	1.2	**3**
2020508C	Switchgear and Protection Laboratory	1.8	1.2	**3**
2020509C	Electric Traction Laboratory	1.8	1.2	**3**
2020510	Course under MOOCs/SWAYAM /AutoCAD in Electrical Engineering or Others	1.8	1.2	**3**
2020511	Minor Project	1.8	1.2	**3**
2020601	Entrepreneurship and Start-Ups	1.64	1.2	**2.84**
2020602	Building Electrification	1.8	1.2	**3**
2020603	Utilization of Electrical Energy	1.52	1.2	**2.72**
2020604A	Network Theory	1.52	1.2	**2.72**
2015905B	Project Management	0.98	1.2	**2.18**
2020608A	Building Electrification Laboratory	1.8	1.2	**3**
2020609	Seminar	1.8	1.2	**3**
2020610	Major Project	1.8	1.2	**3**
2020611	Course under MOOCs/NPTEL/Others (T.W)	1.8	1.2	**3**

3.3 Attainment of Program Outcomes and Program Specific Outcomes (40)

3.3.1 Describe assessment tools and processes used for assessing the attainment of each POs and PSOs as mentioned in Annexure 1 (10)

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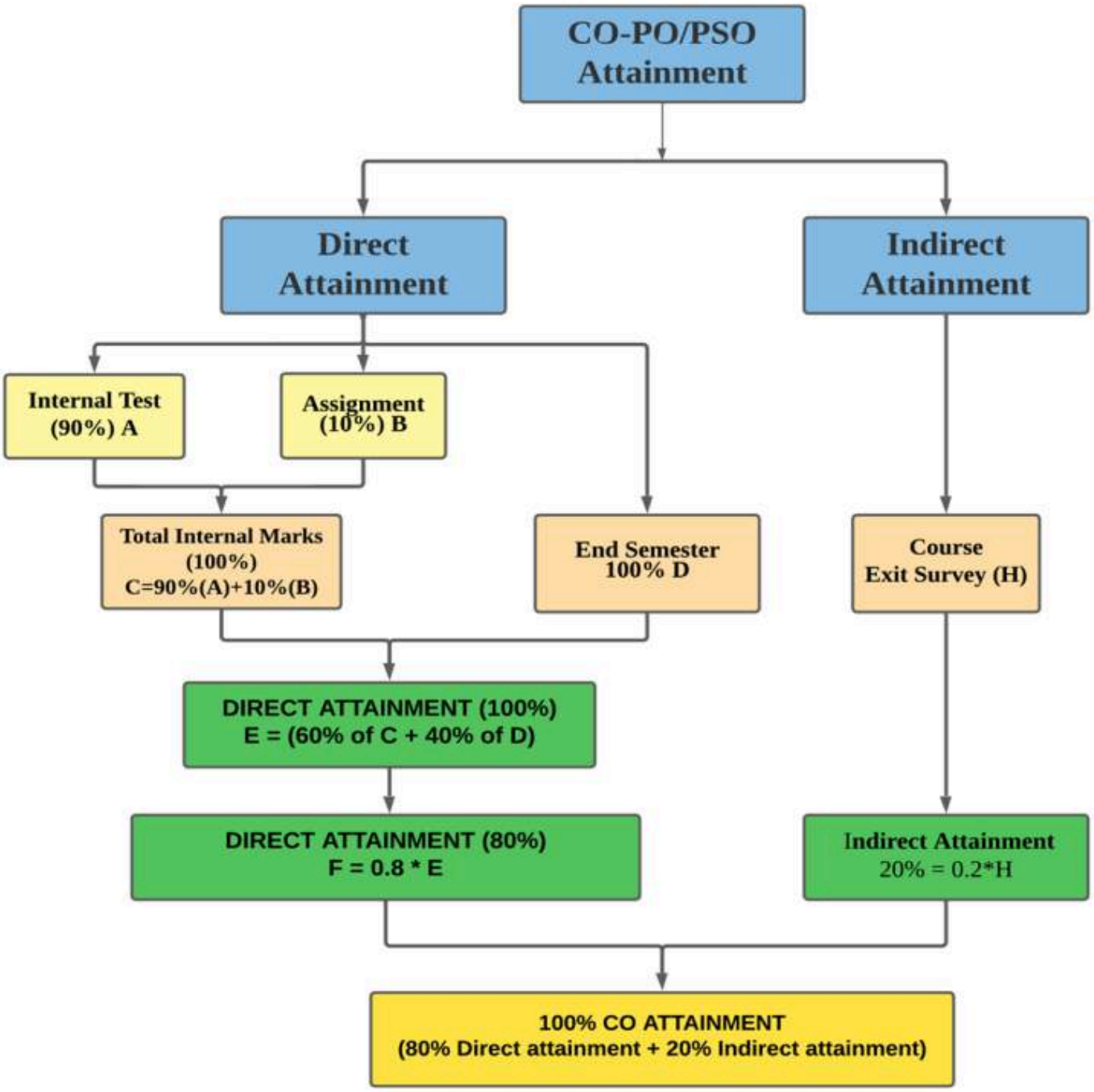
These robust assessment processes, comprising both direct and indirect methods, help ensure that the evaluation of Course Outcomes at our institution is comprehensive, transparent, and aligns with our educational goals. They also provide essential feedback for continuous improvement and curriculum development.


CO-PO/PSO Attainment
Direct Attainment
Indirect Attainment
Internal Test (90%) A
Assignment (10%) B
Total Internal Marks (100%) C=90%(A)+10%(B)
End Semester 100% D
Course Exit Survey (H)
DIRECT ATTAINMENT (100%) E = (60% of C + 40% of D)
DIRECT ATTAINMENT (80%) F = 0.8 * E
Indirect Attainment 20% = 0.2*H
100% CO ATTAINMENT (80% Direct attainment + 20% Indirect attainment)

3.3.2 Provide Results of Evaluation of each PO & PSO (30)

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	2.99	1.4	-	-	-	-	-
C1 02	Applied Physics - I	2.24	1.74	1.25	0.99	0.75	-	-
C1 03	Applied Chemistry - I	3	2	-	1	1	-	2
C1 04	Communication Skills in English	-	-	-	-	1.73	1.73	2.6
C1 05	Engineering Graphics	2.8	-	2.5	2.33	-	-	2.4
C1 06	Applied Physics Lab - I	3	1	1	3	1	-	1.4
C1 07	Applied Chemistry Lab - I	3	1	1	2	2	1	2
C1 08	Communication Skills in English Lab	2	-	-	-	2.75	3	2.25
C1 09	Engg. Workshop Practice (T.W)	2	-	-	2	1	-	1
C1 10	Sports and Yoga (T.W)	2	-	-	2	1	-	1
C1 11	KYP /IT Essential /Python?Others (T.W)	3	-	-	2	2	-	1
C1 12	Mathematics - II	3	2.4	2.6	2.6	2.6	2.2	2.6
C1 13	Applied Physics - II	2.2	1.19	-	0.85	0.85	-	1.02
C1 14	Introduction to IT Systems	2	2	1.67	1.5	1	1.67	1.6
C1 15	Fundamental of Electrical & Electronics Engg	2.37	-	0.89	1.48	-	1.33	1.55
C1 16	Engineering Mechanics	1.8	0.6	1.32	1.08	1.08	1.5	-
C1 17	Applied Physics Lab - II	2.6	1.8	1.2	-	-	-	-
C1 18	Introduction to IT System Lab	2	-	-	2	2	2	2.75
C1 19	Fundamental of Electrical and Electronics Engg. Lab	2.5	-	2	2.5	1	1.67	1.5
C1 20	Engineering Mechanics Lab	-	0.8	-	2.4	1.6	0.8	-
C1 21	Course under MOOCS /SWAYAM /ETC /Others (T.W)	1.07	0.8	0.53	-	-	-	-

C1 22	KYP/IT Essential /Python/Others (T.W)	1.2	1.1	1.2	1.1	0.8	0.8	0.8
C1 23	Environmental Science (T.W)	1.2	1.2	0.6	0.6	0.6	1.2	1.2
C2 01	Introduction to Electrical Power Generation System	3	3	-	-	2	-	1
C2 02	Electrical Circuits	1.97	1.44	-	-	-	-	-
C2 03	Electrical and Electronics Measurements	2.14	0.71	1.25	1.19	0.71	-	0.71
C2 04	Electric Motors and Transformers	1.58	0.85	0.56	-	-	-	0.85
C2 05	Fundamental of Basic Electronics & Digital Electronics	1.33	1.62	1.03	1.03	0.88	0.74	0.88
C2 06	Introduction to Electrical Power Generation Systems Laboratory	2	-	-	3	2	-	1
C2 07	Electrical Circuits Laboratory	3	2	-	1	-	-	-
C2 08	Web Technology Laboratory	-	2	2.75	2.67	-	2	2
C2 09	Electrical and Electronics Measurements Laboratory	3	1	1.75	1.67	1	-	1
C2 10	Electric Motors and Transformers Laboratory	1.4	-	-	2.8	1	-	-
C2 11	Python (T.W)	1.65	-	1.65	1.65	-	1.65	1.93
C2 12	Fundamentals of Basic Electronics and Digital Electronics (T.W)	2.52	-	-	-	-	-	-
C2 13	Power Electronics	2.98	1.99	-	-	0.99	-	0.99
C2 14	Electrical Power Transmission and Distribution	2.71	1.8	-	-	0.9	-	-
C2 15	Induction, Synchronous and Special Electrical Machines	2.15	1.34	-	-	-	-	0.89
C2 16	Solar Power Technologies	3	-	-	-	1.6	-	1.67
C2 17	Industrial Drives	2.73	0.91	-	0.91	-	-	-
C2 18	Power Electronics Laboratory	2.4	1.6	-	-	2	-	1
C2 19	Induction, Synchronous and Special Electrical Machines Laboratory	1.4	-	-	2	-	-	1
C2 20	Industrial Drives Laboratory	3	1	-	1	-	-	-
C2 21	MATLab	3	2	-	3	-	-	1.5

C2 22	Electric Power Transmission and Distribution (T.W)	3	-	-	-	-	-	1
C2 23	Solar Power Technologies (T.W)	3	-	-	-	1.6	-	1.67
C2 24	Course under MOOCs/ SWAYAM/ AutoCAD in Electrical Engineering or Others	2.33	-	-	2.67	2.33	2	2
C2 25	Summer Training / Industrial Visits	2.67	-	-	1	-	-	1
C3 01	Microprocessor and Microcontroller	2.82	-	1.88	-	-	-	-
C3 02	Energy Conservation and Audit	2.82	0.94	-	-	0.94	-	-
C3 03	Switchgear and Protection	2.66	0.95	-	0.95	-	-	-
C3 04	Electric Traction	2	-	-	-	-	-	-
C3 05	Soft Computing Techniques	2.34	1.67	1.39	-	0.83	-	1.11
C3 06	Microprocessor and Microcontroller Laboratory	1	-	-	2.4	-	-	-
C3 07	Energy Conservation and Audit Laboratory	1.33	2.67	2.5	2	1.75	1.75	1
C3 08	Switchgear and Protection Laboratory	1	1.67	-	2.6	-	-	-
C3 09	Electric Traction Laboratory	2	-	-	-	-	-	-
C3 10	Course under MOOCs/SWAYAM /AutoCAD in Electrical Engineering or Others	2	-	-	1	-	-	1
C3 11	Minor Project	-	3	2	-	2	3	-
C3 12	Entrepreneurship and Start-Ups	1.91	0.95	0.95	-	1.91	2.73	1.34
C3 13	Building Electrification	2	-	2	-	-	-	2
C3 14	Utilization of Electrical Energy	2.72	1.36	-	1.82	2.27	1.82	1.52
C3 15	Network Theory	2.72	1.82	1.36	1.82	-	-	-
C3 16	Project Management	2.18	-	-	-	-	2.18	0.73
C3 17	Building Electrification Laboratory	3	-	2	1	1	1	-
C3 18	Seminar	3	2.5	3	2	2	3	1.25
C3 19	Major Project	-	3	2	2	2	3	1
C3 20	Course under MOOCs/NPTEL/Others (T.W)	1.5	1	1.5	1	1	1.5	1.33

Direct Attainment	**2.31**	**1.57**	**1.60**	**1.77**	**1.46**	**1.84**	**1.43**
Indirect Attainment	**2.23**	**1.80**	**1.73**	**1.62**	**1.60**	**1.49**	**1.55**
PO Attainment	**2.29**	**1.62**	**1.63**	**1.74**	**1.49**	**1.77**	**1.46**

Table 3.3.2 (b) Program Specific Outcome Attainment

Course	Course Name	PSO1	PSO2	PSO3
C1 01	Mathematics - I	1	-	-
C1 02	Applied Physics - I	1.62	1.12	0.75
C1 03	Applied Chemistry - I	-	-	-
C1 04	Communication Skills in English	-	-	-
C1 05	Engineering Graphics	-	-	-
C1 06	Applied Physics Lab - I	-	-	-
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)	2.4	2.4	1.8
C1 11	KYP /IT Essential /Python?Others (T.W)	-	-	-
C1 12	Mathematics - II	2.2	-	2.4
C1 13	Applied Physics - II	-	-	-
C1 14	Introduction to IT Systems	3	2	1
C1 15	Fundamental of Electrical & Electronics Engg	0.89	0.89	0.89
C1 16	Engineering Mechanics	0.96	-	-
C1 17	Applied Physics Lab - II	1.8	1.4	1.2
C1 18	Introduction to IT System Lab	1	1	1.5
C1 19	Fundamental of Electrical and Electronics Engg. Lab	1	1	1
C1 20	Engineering Mechanics Lab	-	-	-
C1 21	Course under MOOCS /SWAYAM /ETC /Others (T.W)	0.93	0.53	0.53

C1 22	KYP/IT Essential /Python/Others (T.W)	1	-	1.2
C1 23	Environmental Science (T.W)	-	-	-
C2 01	Introduction to Electrical Power Generation System	3	-	2
C2 02	Electrical Circuits	1.31	-	-
C2 03	Electrical and Electronics Measurements	1.42	0.71	0.71
C2 04	Electric Motors and Transformers	1.58	0.68	-
C2 05	Fundamental of Basic Electronics & Digital Electronics	0.74	1.33	0.88
C2 06	Introduction to Electrical Power Generation Systems Laboratory	1	-	2
C2 07	Electrical Circuits Laboratory	2	1	1
C2 08	Web Technology Laboratory	-	-	-
C2 09	Electrical and Electronics Measurements Laboratory	1	1	1
C2 10	Electric Motors and Transformers Laboratory	1.6	1.6	-
C2 11	Python (T.W)	-	-	-
C2 12	Fundamentals of Basic Electronics and Digital Electronics (T.W)	1.4	-	-
C2 13	Power Electronics	1.99	1.99	1.99
C2 14	Electrical Power Transmission and Distribution	2.35	0.9	-
C2 15	Induction, Synchronous and Special Electrical Machines	2.15	0.89	-
C2 16	Solar Power Technologies	1	-	-
C2 17	Industrial Drives	1.82	2.73	2.12
C2 18	Power Electronics Laboratory	2	-	2
C2 19	Induction, Synchronous and Special Electrical Machines Laboratory	1.4	1.4	-
C2 20	Industrial Drives Laboratory	2	3	2.33
C2 21	MATLab	1.5	2	-
C2 22	Electric Power Transmission and Distribution	2.8	1	-

	(T.W)			
C2 23	Solar Power Technologies (T.W)	1	-	-
C2 24	Course under MOOCs/ SWAYAM/ AutoCAD in Electrical Engineering or Others	2.33	1.67	2
C2 25	Summer Training / Industrial Visits	2.67	1	-
C3 01	Microprocessor and Microcontroller	1.88	0.94	-
C3 02	Energy Conservation and Audit	-	-	0.94
C3 03	Switchgear and Protection	2.66	0.95	0.95
C3 04	Electric Traction	1.75	2	-
C3 05	Soft Computing Techniques	0.83	-	-
C3 06	Microprocessor and Microcontroller Laboratory	1	-	-
C3 07	Energy Conservation and Audit Laboratory	1	2.67	3
C3 08	Switchgear and Protection Laboratory	1	-	-
C3 09	Electric Traction Laboratory	1.75	2	-
C3 10	Course under MOOCs/SWAYAM /AutoCAD in Electrical Engineering or Others	1	-	1
C3 11	Minor Project	-	2	2.5
C3 12	Entrepreneurship and Start-Ups	-	-	-
C3 13	Building Electrification	2	-	-
C3 14	Utilization of Electrical Energy	1.82	1.82	2.72
C3 15	Network Theory	1.66	-	-
C3 16	Project Management	-	-	-
C3 17	Building Electrification Laboratory	-	-	2
C3 18	Seminar	3	2	2
C3 19	Major Project	-	2	2
C3 20	Course under MOOCs/NPTEL/Others (T.W)	1	1	1
	Direct Attainment	**1.64**	**1.49**	**1.56**
	Indirect Attainment	**1.89**	**1.60**	**1.43**
	PSO Attainment	**1.69**	**1.51**	**1.54**

Criterion 4

Student's Performance

Criterion - 4	Student's Performance	200

Intake Information:

Table 4.1

Item	CAY (Current Academic Year)	CAYm1 (Current Academic Year Minus 1)	CAYm2 (Current Academic Year Minus 2)	CAYm3 (Current Academic Year Minus 3)	CAYm4 (Current Academic Year Minus 4)	CAYm5 (Current Academic Year Minus 5)
	2023-2024	**2022-2023**	**2021-2022**	**2020-2021**	**2019-2020**	**2018-2019**
Sanctioned intake strength of the program (N)	60	48	48	48	48	60
Total number of students, admitted through state level counseling(N1)	18	41	36	40	39	7
Number of students, admitted through Institute level quota (N2)	0	0	0	0	0	0
Number of students, admitted through lateral entry (N3)	0	1	0	2	1	2
Total number of students admitted in the Program (N1 + N2 + N3)	18	42	36	42	40	9
Enrolment Ratio = (N1+N2)/N	**30%**	**85%**	**75%**	**83%**	**81%**	**12%**

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	18			
2022-2023	42	7		
2021-2022	36	2	2	
2020-2021(**LYG**)	42	16	10	10
2019-2020(**LYGm1**)	40	5	2	2
2018-2019(**LYGm2**)	9	1	3	2

LYG : Last Year Graduate

LYGm1 : Last Year Graduate minus 1

LYGm2 : Last Year Graduate minus 2

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	18			
2022-2023	42	28		
2021-2022	36	24	21	
2020-2021(**LYG**)	42	28	24	23
2019-2020(**LYGm1**)	40	36	26	26
2018-2019(**LYGm2**)	9	5	6	8

4.1 Enrolment Ratio(20)

Years	N	N1 + N2	Enrollment Ratio [(N1 + N2 / N)*100]
2023-24	60	18	30
2022-23	48	42	85
2021-22	48	36	75

Average [(ER1 + ER2 + ER3) / 3] : 63.33

4.2 Success Rate in the stipulated period of the program

4.2.1 Success rate without backlogs in any year of study(40)

SI= (Number of students who have passed from the program without backlog)/(Number of students admitted in the first year of that batch and admitted in 2nd year via lateral entry)

Average SI = Mean of success index (SI) for past three batches

Success rate without backlogs in any year of study = 40 × Average SI

Item	Last Year Graduate, (LYG)	Last Year Graduate Minus 1 Batch, (LYGm1)	Last Year Graduate Minus 2 Batch, (LYGm2)
	2020-2023	2019 - 2022	2018-2021
Total number of students (admitted through state level counseling + admitted through Institute on level quota + actually admitted through lateral entry) (N1 + N2 + N3)	42	40	9
Number of students who have passed without backlogs in the stipulated period	10	2	2
Success index (SI)	0.24	0.05	0.22

Average SI [(SI1 + SI2 + SI3) / 3] : 0.17

Assessment [40 * Average SI] : 6.80

4.2.2 Success rate in stipulated period(20)

SI= (Number of students who have passed from the program in the stipulated period of course duration)/ (Number of students admitted in the first year of that batch and admitted in 2nd year via lateral entry)

Average SI = mean of success index (SI) for past three batches

Success rate = 20 × Average SI

Note: If 100% students clear without any backlog then also total marks scored will be 60 as both 4.2.1 & 4.2.2 will be applicable simultaneously.

Item	Last Year Graduate, (**LYG**)	Last Year Graduate Minus 1 Batch, (**LYGm1**)	Last Year Graduate Minus 2 Batch, (**LYGm2**)
	2020-2023	**2019 - 2022**	**2018-2021**
Total number of students (admitted through state level counseling + admitted through Institute on level quota + actually admitted through lateral entry) (N1 + N2 + N3)	42	40	9
Number of students who have passed in the stipulated period (Y)	23	26	8
Success Index [SI = Y / X]	0.55	0.65	0.89

Average SI[(SI1 + SI2 + SI3) / 3]: 0.70

Assessment [20 * Average SI] : 14

4.3 Academic Performance in First Year(25)

Academic Performance Level = 2.5 * Average API

API = ((Mean of 1st Year Grade Point Average of all successful Students on a 10 point scale) or (Mean of the percentage of marks of all successful students in First Year/ 10)) x (successful students/number of students appeared in the examination)

Successful students are those who are permitted to proceed to the second year

Academic Performance	2022-23 **(CAYm1)**	2021-22 **(CAYm2)**	2020-21 **(LYG)**
Mean of CGPA or Mean Percentage of all successful students (X)	**7.81**	**7.6**	**9.42**
Total no. of successful students (Y)	29	24	28
Total no. of students appeared in the examination (Z)	34	29	34
API = X* (Y/Z)	**6.66**	**6.29**	**7.76**
	AP1	AP2	AP3
Average API = (AP1 + AP2 + AP3)/3	**6.90**		

Average API [(AP1 + AP2 + AP3)/3] : 6.90

Assessment [2.5 * AverageAPI] : 17.25

4.4 Academic Performance in Second Year(20)

Academic Performance Level = 2.0 * Average API

API = ((Mean of 2 Year Grade Point Average of all successful Students on a 10 point scale) or (Mean of the percentage of marks of all successful students inSecond Year/ 10)) x (successful students/number of students appeared in the examination)

Successful students are those who are permitted to proceed to the final year

Academic Performance	**2021-22(CAYm2)**	**2020-21(LYG)**	**2019-20(LYGm1)**
Mean of CGPA or Mean Percentage of all successful students (X)	**7.58**	**7.56**	**8.77**
Total no. of successful students (Y)	21	23	26
Total no. of students appeared in the examination (Z)	25	30	37
API = X* (Y/Z)	**6.37**	**5.80**	**6.16**
	AP1	AP2	AP3
Average API = (AP1 + AP2 + AP3)/3	**6.11**		

Average API [(AP1 + AP2 + AP3)/3] : 6.11

Assessment [2.0 * AverageAPI] : 12.22

4.5 Academic Performance in Final Year(15)

Academic Performance Level =1.5 * Average API (Academic Performance Index)

API = (Mean of Final Year Grade Point Average of all successful Students on a 10 point scale) or (Mean of the percentage of marks of all successful students in Final Year/10) x (successful students/number of students appeared in the examination)

Successful students are those who passed in all the final year courses

Academic Performance	**2020-21 (LYG)**	**2019-20 (LYGm1)**	**2018-19 (LYGm2)**
Mean of CGPA or Mean Percentage of all successful students (X)	**8.15**	**7.94**	**8.4**
Total no. of successful students (Y)	23	26	5
Total no. of students appeared in the examination (Z)	23	26	8
API = X* (Y/Z)	**8.15**	**7.94**	**5.25**
	AP1	AP2	AP3
Average API = (AP1 + AP2 + AP3)/3	**7.11**		

Average API [(AP1 + AP2 + AP3)/3] : 7.11

Assessment [1.5 * AverageAPI] : 10.66

4.6 Placement and Higher Studies (40)

Assessment Points = 40 × (1.25X + Y + Z)/N where,

X = Number of students placed in companies or Government sector through on/off campus recruitment

Y = Number of students admitted to higher studies

Z = No. of students turned entrepreneur in the respective field of engineering/technology

N =Total number of final year students

Item	**Last Year Graduate, (LYG)**	**Last Year Graduate Minus 1 Batch, (LYGm1)**	**Last Year Graduate Minus 2 Batch, (LYGm2)**
	2020-2021	**2019-2020**	**2018-2019**
Total No. of Final Year Students (N)	**23**	**26**	**5**
No. of students placed in companies or Government Sector (X)	20	20	3
No. of students admitted to higher studies (Y)	2	6	2
No. of students turned entrepreneur in the respective field of engineering/technology (Z)	0	0	0
1.25X + Y +Z	27	31	5.75
Placement Index (P) : (1.25X + Y +Z)/N	**1.17**	**1.19**	**1.15**

Average Placement [(P1 + P2 + P3)/3] : 1.17

Assessment [40 * Average Placement] :46.88

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 and Electronics Engineering

Assessment Year : 2022-23 (CAYm1)

S. No.	Student Name	Enrolment No	Employee Name	Appointment No
1	AFNAN AHMAD	1993920001	DHOOT TRANSMISSIONS PVT LTD	GPC/EEE/2023/DTPL/03
2	AKSHAY PRAKASH	1993920003	DHOOT TRANSMISSIONS PVT LTD	GPC/EEE/2023/DTPL/04
3	ANURAG RANJAN	1993920006	Apollo Types pvt.ltd	AP/P-GPC/DET-2023/EEE-001
4	KIRAN KUMARI	1993920010	Dhana Anand Group	GPC/EEE/2023/DAIPL/01
5	NIBHA KUMARI	1993920011	Dhana Anand Group	GPC/EEE/2023/DAIPL/02
6	PRADEEP KUMAR	1993920014	MEHLE Company, Chakan	Emp Code: 40006473
7	RAHUL KUMAR	1993920017	DHOOT TRANSMISSIONS PVT LTD	GPC/EEE/2023/DTPL/01
8	SRIKANT KUMAR	1993920020	Apollo Types pvt.ltd	AP/P-GPC/DET-2023/EEE-003
9	VIKASH KUMAR	1993920022	DHOOT TRANSMISSIONS PVT LTD	GPC/EEE/2023/DTPL/05
10	ANJALI KUMARI	1993920024	Dhana Anand Group	GPC/EEE/2023/DAIPL/03
11	ASHISH KUMAR SHARMA	1993920025	Apollo Types pvt.ltd	AP/P-GPC/DET-2023/EEE-002
12	SHREEPAD KUMAR SINGH	1993920028	DHOOT TRANSMISSIONS PVT LTD	GPC/EEE/2023/DTPL/02
13	SHIVAM KUMAR	1993920030	Layam Flexi Solutions Pvt.Ltd	Emp Code: 770006
14	RITIK KUMAR	1993920031	Apollo Types pvt.ltd	AP/P-GPC/DET-2023/EEE-004
15	SMRITI KUMARI	1993920034	Dhana Anand Group	GPC/EEE/2023/DAIPL/04
16	NEERAJ KUSHWAHA	1993920038	Dhana Anand Group	GPC/EEE/2023/DAIPL/08
17	RAJIYA BEGAM	1993920039	Dhana Anand Group	GPC/EEE/2023/DAIPL/05
18	RISHIKANT YADAV	1993920041	Apollo Types pvt.ltd	AP/P-GPC/DET-2023/EEE-005
19	PRISKA KUMARI	1993920601	Dhana Anand Group	GPC/EEE/2023/DAIPL/06
20	MEHAK KUMARI	1993920602	Dhana Anand Group	GPC/EEE/2023/DAIPL/07

Assessment Year : 2021 2022(CAYm2)

S. No.	Student Name	Enrolment No	Employee Name	Appointment No
1	Ritambhara Kumari	1993919002	Dana Anand Pvt.Ltd.	1306604
2	Suchita Swati	1993919003	North Bihar Power Distribution Company Limited, Patna	EBRD088220600006
3	Aryan Kumar	1993919006	WINDCARE INDIA PVT .LTD.	WCIPL/HRMS/ZCAMPUS-NGOFF-01/22-23/01
4	Suraj Kumar	1993919007	WINDCARE INDIA PVT .LTD.	WCIPL/HRMS/ZCAMPUS-NGOFF-01/22-23/02
5	Aman Kumar	1993919012	WINDCARE INDIA PVT .LTD.	WCIPL/HRMS/ZCAMPUS-NGOFF-01/22-23/03
6	Kumari Divya Bharti	1993919018	KP Reliable Technique India	GPC/EEE/2022/KPRTI/01
7	Anjali Kumari	1993919021	KP Reliable Technique India	GPC/EEE/2022/KPRTI/02
8	Janki Kumari	1993919022	KP Reliable Technique India	GPC/EEE/2022/KPRTI/03
9	Priyanka Kumari	1993919023	KP Reliable Technique India	GPC/EEE/2022/KPRTI/04
10	Manish Kumar	1993919024	WINDCARE INDIA PVT .LTD.	WCIPL/HRMS/ZCAMPUS-NGOFF-01/22-23/04
11	Santosh Kumar	1993919025	WINDCARE INDIA PVT .LTD.	WCIPL/HRMS/ZCAMPUS-NGOFF-01/22-23/05
12	Jitendra Kumar	1993919027	KP Reliable Technique India	GPC/EEE/2022/KPRTI/05
13	Subham Kumar	1993919028	WINDCARE INDIA PVT .LTD.	WCIPL/HRMS/ZCAMPUS-NGOFF-01/22-23/06
14	Kaushal Kumar	1993919029	North Bihar Power Distribution Company Limited, Patna	EBRD088220800029
15	Amrit Kumar	1993919030	WINDCARE INDIA PVT .LTD.	WCIPL/HRMS/ZCAMPUS-NGOFF-01/22-23/07
16	Abhishek Gupta	1993919032	WINDCARE INDIA PVT .LTD.	WCIPL/HRMS/ZCAMPUS-NGOFF-01/22-23/08
17	Harish Kumar	1993919037	WINDCARE INDIA PVT .LTD.	WCIPL/HRMS/ZCAMPUS-NGOFF-01/22-23/09
18	Vikash Kumar	1993919040	WINDCARE INDIA PVT .LTD.	WCIPL/HR/GPC/CAMPUS OFFER-2022/01
19	Abhishek Kumar	1993919041	WINDCARE INDIA PVT .LTD.	WCIPL/HR/GPC/CAMPUS OFFER-2022/02
20	Babul Kumar	1993919043	KP Reliable Technique India	GPC/EEE/2022/KPRTI/06

Assessment Year : 2020-21 (CAYm3)

S. No.	Student Name	Enrolment No	Employee Name	Appointment No
1	RANJAN KUMAR	1993918003	WINDCARE INDIA PVT .LTD.	WCIPL/HRMS/ZCAMPUS-NGOFF-01/21-22 /01
2	GOLU KUMAR	1993918004	Suzlon Global Service Ltd.	GPC/EEE/2023/SGSL/01
3	PRASHUN BHARTI (LE)	1993918601	GEMS Polytechnic College	GPC/HR/2022/006

Assessment Year : 2019-20 (CAYm4)

S. No.	Student Name	Enrolment No	Employee Name	Appointment No
1	AMAN KUMAR	1993917001	The Duncan Hospital	G00230
2	SONELAL TUDU	1993917007	Suzlon Global Service Ltd.	GPC/EEE/2023/SGSL/01

4.7 Professional Activities (20)

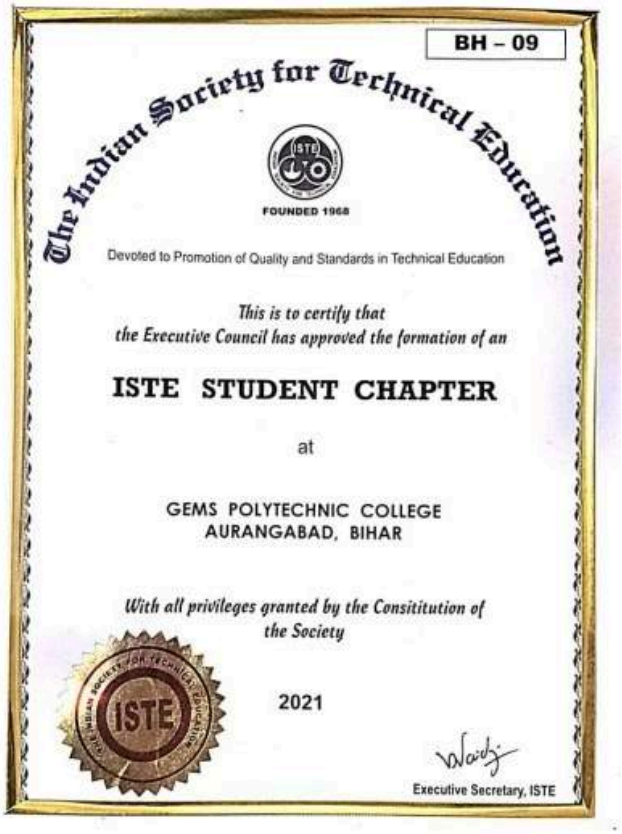
4.7.1 Professional societies/ student chapters and organizing technical events (10)

A. Availability of Professional Societies/Chapters & Relevant activities (5)

In the Department of Electrical and Electronics 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	Number of Students Registered
1.	Indian Society for Technical Education (ISTE)	IM-2867	BH-09	23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The Indian Society for Technical Education

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This is to certify that the Executive Council has approved the formation of an

ISTE STUDENT CHAPTER

at

GEMS POLYTECHNIC COLLEGE
AURANGABAD, BIHAR

With all privileges granted by the Consititution of the Society

ISTE

2021

Executive Secretary, ISTE

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: Plug-In

Relevant Activities:

Orientation Program:

At the beginning of each academic year, Plug-In 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:

Plug-In 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 and Electronics Engineering at GEMS Polytechnic College.

Office Bearers of the Association CAY (2022-2023)			
Sl.No	**Name of the Student**	**Designation**	**Class**
1	Pankaj kumar	Student Chairman	3rd Year/EEE
2	Anurag Ranjan	Student Vice Chairman	3rd Year/EEE
3	Sonu Kumar	Student Secretary	3rd Year/EEE
4	Shivam Kumar	Joint Secretary	3rd Year/EEE
5	Nibha Kumari	Treasurer	3rd Year/EEE
6	Pradeep Kumar	Executive Member	3rd Year/EEE
7	Anjali Kumari	Executive Member	3rd Year/EEE
8	Srikant Kumar	Executive Member	3rd Year/EEE

Office Bearers of the Association CAYm1 (2021-2022)			
Sl.No	**Name of the Student**	**Designation**	**Class**
1	Kanaklata	Student Chairman	3rd Year/EEE
2	Shreepad Kumar Singh	Student Vice Chairman	2nd Year/EEE
3	MD. Alam	Student Secretary	2nd Year/EEE
4	Smriti Kumari	Joint Secretary	2nd Year/EEE
5	Sonu Kumar	Treasurer	2nd Year/EEE
6	Vikash Kumar Paswan	Executive Member	2nd Year/EEE
7	Vikash chaudhary	Executive Member	2nd Year/EEE
8	Kiran Kumari	Executive Member	2nd Year/EEE

Office Bearers of the Association CAYm2 (2020-2021)			
Sl.No	**Name of the Student**	**Designation**	**Class**
1	Sanjeev Kumar	Student Chairman	2nd Year/EEE
2	Amresh Kumar Saw	Student Vice Chairman	1st Year/EEE
3	Aman Kumar	Student Secretary	1st Year/EEE
4	Gautam Kumar Bhaskar	Joint Secretary	1st Year/EEE
5	Princy Bharti	Treasurer	1st Year/EEE
6	Rahul Kumar	Executive Member	1st Year/EEE
7	Akshay prakash	Executive Member	1st Year/EEE

B. Number, quality of engineering events (5)

Professional Excellence in Engineering:

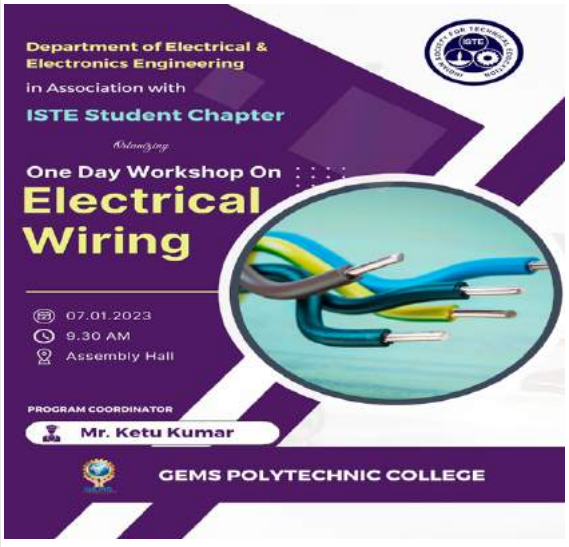
At the Department of Electrical and Electronics Engineering, GEMS Polytechnic College, we take pride in our numerous high-quality engineering events. These events, meticulously organized and executed, serve as dynamic platforms for knowledge exchange, networking, and skill development. Our commitment 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:

Sl. No	Date	Name of the Event / Activity	Name of the resource person with Designation
1	08.12.2023	Workshop on Transformer fabrication	**Mr. Ketu Kumar Sahitya,** Lecturer,GEMS Polytechnic College
2	04.09.2023	Career Guidance	**Mr. Pankaj Kumar Dubey,** HR , KP Reliable Technique India Pvt Ltd
3	08.09.2023	Career Guidance	**Mr.Sankar G,** Associate Manager - Employee Relations Apollo Tyres
4	01.09.2023	Career Guidance	**Mr. Nitish Prakash Surya,** Youth Coach and Author, Engineers Academy, Patna
5	27.07.2023	Metal Art	**Mrs.Catherine,** Lecturer ,GEMS Polytechnic college
6	12.05.2023	Light up	**Mrs.Catherine,** Lecturer ,GEMS Polytechnic college
7	28.02.2023	National Science Day - QUIZ competition, Poster presentation.	**Mr.Ragunath A,** IIC president GEMS Polytechnic College
8	30.01.2023	Guest Lecture on Coal Based Thermal Power Plant	**G.Boopathi Raja Kumar,** Deputy General Manager, (Control & Instrumentation)NTPC Nabi Nagar
9	11.01.2023	Guest Lecture - National Startup day	**Mr.Abraham Dennyson.** B.tech,MBA, PGD-PHN Senior manager-Program analyst at Project Concern International
10	07.01.2023	Electrical Wiring	**Mr.Ketu Kumar Sahitya,** Lecturer,GEMS Polytechnic College
11	30.08.2022	Career Guidance	**Dr. P. K. Rao,** Training and Placement Expert, Department of Science and Technology, Patna, Bihar
12	27.08.2022	Soldering & PCB Circuit Design	**Mr.Ketu Kumar Sahitya,** Lecturer,GEMS Polytechnic College
13	11.08.2022	Seminar on Rail Transports	**Mr.Abner Gulman,** Consultant for ASS. Manager,Mumbai

Workshop on Transformer fabrication:

Electrical Wiring:



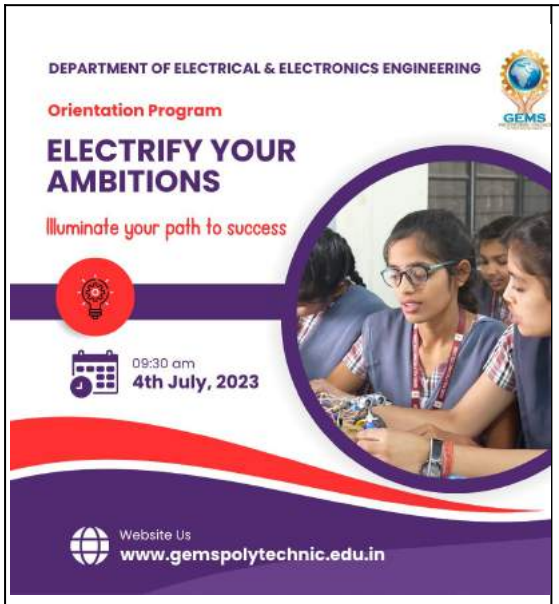
Soldering & PCB Circuit Design:

List of Event / Activities under Department Association:

Sl.No	Date	Name of the Event / Activity	Name Of The Association
1	11.01.2024	E waste Recycling Activity	Plug-In Association, Department of EEE
2	25.07.2023	Webinar on E-Waste Management	Plug-In Association, Department of EEE
3	04.07.2023	Orientation Program(2022-2025)	Plug-In Association, Department of EEE
4	16.12.2022	Orientation Program(2021-2024)	Plug-In Association, Department of EEE
5	26.05.2022	Feel Engineering Project Expo	Plug-In Association, Department of EEE
6	26.05.2022	Farewell Program (2019-2022)	Plug-In Association, Department of EEE
7	01.04.2022	Orientation Program (2020-2023)	Plug-In Association, Department of EEE
8	22.11.2021	Workshop on Robotics and Arduino Programming	Plug-In Association, Department of EEE
9	13.09.2021	Farewell Program (2018-2021)	Plug-In Association, Department of EEE
10	03.09.2021	Workshop on Circuit Simulation & Android App Development	Plug-In Association, Department of EEE
11	16.10.2020	Android App Development Training	Plug-In Association, Department of EEE
12	08.03.2019 - 09.03.2019	National Level Workshop on Embedded System & Internet of Things	Plug-In Association, Department of EEE

E-waste Recycling Activity

Orientation Program(2022-2025):



Farewell Program (2019-2022):

Workshop on Robotics and Arduino Programming:

4.7.2 Publication of technical magazines, newsletters, etc. (5)

(The Department shall list the publications mentioned earlier along with the names of the editors, publishers, etc.)

A. Quality & Relevance of the contents and Print Material (3)

Write Answer:

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

Name of the Newsletter: **Electro Vision**

Publication Period: **Half-Yearly**

Academic year	News Letter	Publication Details
2023-2024 *(Odd Semester)*	**Electro Vision** *A Half yearly Newsletter*	**Volume: 6, Issue :1 Edition: Jan-June**
2022-2023 *(Even Semester)*	**Electro Vision** *A Half yearly Newsletter*	**Volume: 5, Issue :2 Edition: July- Dec**
2022-2023 *(Odd Semester)*	**Electro Vision** *A Half yearly Newsletter*	**Volume: 4, Issue: 1 Edition: Jan- June**
2021-2022 *(Even Semester)*	**Electro Vision** *A Half yearly Newsletter*	**Volume: 3, Issue :2 Edition: July- Dec**
2021-2022 *(Odd Semester)*	**Electro Vision** *A Half yearly Newsletter*	**Volume: 2, Issue: 1 Edition: Jan- June**
2020-2021 *(Even Semester)*	**Electro Vision** *A Half yearly Newsletter*	**Volume: 1, Issue :1 Edition: July- Dec**

Quality and Relevance of Contents:

Our newsletter, Plug-In, stands as a testament to our commitment to provide valuable and relevant content to our students and faculty. Here's what sets Plug-In 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 Plug-In 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 Plug-In 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 Electrical and Electronics 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.

Plug-In is not just a newsletter; its a platform that showcases the brilliance and innovative spirit within the Department of Electrical and Electronics 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.

Volume:6

ISSUE :1 EDITION: JAN- JUNE

ELECTRO VISION

A Half yearly Newsletter

THE HOD'S MESSAGE

As we step into a fresh academic term, I extend my warmest greetings to all members of our Electrical and Electronic Engineering community. Allow me to share a concise update on the recent developments within our department.

Celebrating Outstanding Accomplishments:
We extend our sincerest congratulations to our faculty and students for their outstanding accomplishments. Their dedication and hard work continue to elevate the standards of our department, making us proud.

Anticipating Exciting Opportunities: The recent past has been marked by a flurry of engaging events, seminars, and fruitful industry collaborations. We're thrilled to have witnessed such enthusiastic participation from our community.

Nurturing Student Success: Our commitment to student success remains unwavering. We've provided support and resources to ensure our students thrive academically and professionally.

Faculty Development Program (FDP): We're pleased to announce the successful completion of the Faculty Development Program (FDP). This program aimed to enhance the skills and expertise of our faculty members, equipping them for even greater contributions to our academic community.

Looking Ahead: As we reflect on the achievements of the past, we're excited about the future possibilities. With continued dedication and collaboration, we aim to reach new heights of excellence in the field of Electrical and Electronic Engineering.

Stay tuned for more updates and opportunities to engage with our department. Together, let's continue to inspire and empower the next generation of engineers.

Warm regards,
Mrs.Pameela M,HOD

VISION

To be a forerunner in producing Electrical and Electronics graduates who will be competent in innovations among federal institutions, be a dynamite entrepreneur, and a skilled representative to complement in industry with ethical values to address the needs of the society and Nation

MISSION

- To provide academic excellence by adopting innovative teaching and learning methods to enhance lifelong learning.
- To bridge the gap between the industry and academia by undertaking collaborative projects from industry.
- To promote multidisciplinary activities by enhancing the skills of faculty and students to solve complex technological problems of the society.
- To raise entrepreneurs with a passion to contribute to the needs of the society.
- To produce responsible leaders by inculcating moral and ethical values to the faculty and the students.

THE EEE DEPARTMENT

B. Participation of Students from the program (2)

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 and Electronics Engineering. The editorial board, consisting of five members, plays a pivotal role in curating and creating these informative publications.

Editorial Role	Responsible Persons	Responsibilities
Chief Editors	**Mrs. Pameela M ,** HOD /EEE, **Mr.Robin S ,** Sr.Lecturer /EEE.	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**	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**	The student editor, typically an experienced student from the department, collaborates with faculty and students to coordinate the newsletter's 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**	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:	**Mr.Ketu Kumar Sahitya ,** Lecturer /EEE	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.

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 Electrical and Electronics 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 and Electronics Engineering at GEMS Polytechnic College.

4.7.3 Participation in inter-institute / state/national events by students of the program of study (5)

Empowering Excellence Beyond Borders:

Students in the Department of Electrical and Electronics Engineering at GEMS Polytechnic College actively engage in a wide array of inter-institute, state, and national events. These young talents enthusiastically participate in competitions, technical symposia, and innovation challenges, showcasing their skills and knowledge on regional and national platforms. Their dedication and achievements contribute significantly to the reputation of our institution, inspiring future leaders in the field of Electrical and Electronics Engineering.

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	Kumari Nandni Bharti	1993921015	District Level Sports Meet- 2023 Kabaddi	Inter-Institute	Sityog Institute of Technology in Aurangabad, Bihar	Prize Won-Winner
2	Akash Kumar	1993921006	District Level Sports Meet- 2023 Cricket	Inter-Institute	Sityog Institute of Technology in Aurangabad, Bihar	Prize Won-Winner
3	Ujjwal Kumar	1993922038	District Level Sports Meet- 2023 Kabaddi	Inter-Institute	Sityog Institute of Technology in Aurangabad, Bihar	Prize Won-Runner up
4	Nitu Kumari	1993921017	District Level Sports Meet- 2023 Kabaddi	Inter-Institute	Sityog Institute of Technology in Aurangabad, Bihar	Prize Won-Winner
5	Renu Kumari	1993921028	District Level Sports Meet- 2023 Kabaddi	Inter-Institute	Sityog Institute of Technology in Aurangabad, Bihar	Prize Won-Winner
6	Kumari Nandni Bharti	1993921015	District Level Sports Meet- 2023 Kabaddi	Inter-Institute	Sityog Institute of Technology in Aurangabad, Bihar	Prize Won-Winner

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
7	Babli Kumari	1993921002	District Level Sports Meet- 2023 Kabaddi	Inter-Institute	Sityog Institute of Technology inAurangabad, Bihar	Prize Won-Winner
8	Princy Bharti	1993920016	District Level Sports Meet- 2023 Kabaddi	Inter-Institute	Sityog Institute of Technology inAurangabad, Bihar	Prize Won-Winner
9	Umravati Kumari	1993922039	District Level Sports Meet- 2023 Kabaddi	Inter-Institute	Sityog Institute of Technology inAurangabad, Bihar	Prize Won-Winner
10	Anurag Kumar	1993922004	District Level Sports Meet- 2023 Kabaddi	Inter-Institute	Sityog Institute of Technology inAurangabad, Bihar	Prize Won-Runner up
11	Babli Kumari	1993921002	District Level Sports Meet- 2023 400m Race	Inter-Institute	Sityog Institute of Technology inAurangabad, Bihar	Participated
12	Abhijit Thakur	1993921004	District Level Sports Meet- 2023 400m Race	Inter-Institute	Sityog Institute of Technology inAurangabad, Bihar	Participated
13	Renu Kumari	1993921028	District Level Sports Meet- 2023 800m Race	Inter-Institute	Sityog Institute of Technology inAurangabad, Bihar	Participated

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
14	Renu Kumari	1993921028	District Level Sports Meet- 2023 100m Race	Inter-Institute	Sityog Institute of Technology in Aurangabad, Bihar	Participated
15	Babli Kumari	1993921002	District Level Sports Meet- 2023 Long Jump	Inter-Institute	Sityog Institute of Technology inAurangabad, Bihar	Participated
16	Abhijit Thakur	1993921004	District Level Sports Meet- 2023 Long Jump	Inter-Institute	Sityog Institute of Technology inAurangabad, Bihar	Participated
17	Babli Kumari	1993921002	District Level Sports Meet- 2023 Race-100m	Inter-Institute	Sityog Institute of Technology inAurangabad, Bihar	Participated
18	Abhijit Thakur	1993921004	District Level Sports Meet- 2023 Race-100m	Inter-Institute	Sityog Institute of Technology inAurangabad, Bihar	Participated
19	Abhijit Thakur	1993921004	District Level Sports Meet- 2023 Volleyball	Inter-Institute	Sityog Institute of Technology inAurangabad, Bihar	Participated
20	Abhijit Thakur	1993921004	District Level Sports Meet- 2023 Badminton	Inter-Institute	Sityog Institute of Technology inAurangabad, Bihar	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.	Pankaj Kumar	1993920032	National Level Science Exhibition	National	Sityog Institute of Technology in Aurangabad, Bihar	Participated
2	Rahul Kumar	1993920017	National Level Science Exhibition	National	Sityog Institute of Technology in Aurangabad, Bihar	Participated
3	Shivam Kumar	1993920030	National Level Science Exhibition	National	Sityog Institute of Technology in Aurangabad, Bihar	Participated

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	Kanaklata	1993919004	Workshop On Student's Innovation and Idea Generation	National Level	NITTTR	Participated
2	Shalvi Priya	1993919042	One Week Internship on PLC and Industrial Automation	Inter-institute Level	Sri Eshwar College of Engineering, Coimbatore.	Participated
3	Shalvi Priya	1993919042	Graphic Operation Terminal(GOT 2000)	Inter-institute Level	Sri Eshwar College of Engineering, Coimbatore.	Participated
4	Shalvi Priya	1993919042	MELSEC iQ-R PLC	Inter-institute Level	Sri Eshwar College of Engineering, Coimbatore.	Participated
5	Shalvi Priya	1993919042	Variable Frequency Drives(VFD800)	Inter-institute Level	Sri Eshwar College of Engineering, Coimbatore.	Participated
6	Shalvi Priya	1993919042	Modular iQ-r PLC	Inter-institute Level	Sri Eshwar College of Engineering, Coimbatore.	Participated
7	Shalvi Priya	1993919042	Supervisory Control and Data Acquisition(SCADA)	Inter-institute Level	Sri Eshwar College of Engineering, Coimbatore.	Participated
8.	Kanaklata	1993919004	Smart India Hackathon-2022	National Level	GEMS Polytechnic College	Participated
9	Shalvi Priya	1993919042	Smart India Hackathon-2022	National Level	GEMS Polytechnic College	Participated

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
10	Suraj Kumar	1993919007	Smart India Hackathon-2022	National Level	GEMS Polytechnic College	Participated
11	Kumari Divya Bharti	1993919018	Smart India Hackathon-2022	National Level	GEMS Polytechnic College	Participated
12	Shweta Kumari	1993919005	Smart India Hackathon-2022	National Level	GEMS Polytechnic College	Participated
13.	Suchita Kumari	1993919003	Smart India Hackathon-2022	National Level	GEMS Polytechnic College	Participated

Academic Year: 2020-2021

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	Kaushal Kumar	1993919029	Experience Learning for a Stronger Engineering Foundation	Inter-institute Level	Sri Eshwar College of Engineering, Coimbatore.	Participated
2	Kaushal Kumar	1993919029	Online Interactive Course on Design of Solar Power For Home	Inter-institute Level	Sri Eshwar College of Engineering, Coimbatore.	Participated
3	Kaushal Kumar	1993919029	Short Term Training Program(STTP) on Electronics-A Trial	Inter-institute Level	Sri Eshwar College of Engineering, Coimbatore.	Participated

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
4	Kaushal Kumar	1993919029	Digital Transformation	Inter-institute Level	Sri Eshwar College of Engineering, Coimbatore.	Participated
5	Kaushal Kumar	1993919029	Energy and Environment	Inter-institute Level	Sri Eshwar College of Engineering, Coimbatore.	Participated
6	Kaushal Kumar	1993919029	E-Mobility:Electrification of Vehicle Powertrains	Inter-institute Level	Sri Eshwar College of Engineering, Coimbatore.	Participated

Criterion 5

Faculty Information and Contributions

5. FACULTY INFORMATION AND CONTRIBUTIONS (150)

Faculty in the Department and Program										Contribution to the program (% load)		
Sl. No.	Name	Qualification	Area of Specialization	Designation	Research Paper Publication	Date of Joining	Currently Associated (Y/N)	Nature of Association (Regular / Contract / Adjunct)	Date of Leaving (In case Currently Associated is "No")	CAY 2023-24	CAYM1 2022-23	CAYM2 2021-22
1	Pameela M	M.E	Power Electronics and Drives	HoD	4	05.11.2020	Y	Regular		100	100	100
2	Ragunath A	B.E	Electrical and Electronics Engineering	Sr. Lecturer	2	14.07.2017	Y	Regular		75	50	50
3	Grace Jency	PhD	MEMS VLSI Design	Sr. Lecturer		06.07.2020	N	Regular	04.06.2022	0	0	100
4	V. David Naik	B.Tech	Electrical and Electronics Engineering	Lecturer	2	10.11.2020	Y	Regular		50	50	100
5	Ketu Kumar Sahitya	B.Tech	Electrical and Electronics Engineering	Lecturer	2	14.06.2021	Y	Regular		75	50	50
6	Velangi babu	MSc Physics	General physics	Lecturer		16.12.2021	Y	Regular		50	34	0
7	Pathmapriya	B.E	Electrical and Electronics Engineering	Lecturer	1	10.11.2022	Y	Regular		75	50	0
8	Robin S	B.Tech	Electronics and Communication Engineering	Sr. Lecturer	2	06.07.2015	Y	Regular		55	100	50
9	Sumit Kumar Singh	M.Tech	VLSI	Sr. Lecturer	2	05.07.2015	Y	Regular		50	50	50
10	Jaslin Christy	M.A	English	Lecturer		24.06.2019	N	Regular	05.08.2023	0	20	0
11	Ravi Kumar Saksenna	B.Tech	Mechanical Engineering	Sr. Lecturer		16.07.2018	Y	Regular		0	50	30

12	Sherin Rebecca Empress	MA	English	Lecturer		23.11.2020	N	Regular	28/10/2023	0	0	50
13	Catherine K	BE	Electronics and Communication Engineering	Lecturer		19.07.2021	Y	Regular		20.5	34	34
14	Rajat Kumar	M.Tech	Highway Engineering	Lecturer		03/02/2021	N	Regular	31/03/2023	0	25	0
15	Himanshu Kumar Singh	B.E	Bio-Technology	Lecturer		13.02.2017	Y	Regular		25	30	35
16	Daddanala Sanjeeva Kumar	M.Sc.	Applied Mathematics	Lecturer		12.11.2020	Y	Regular		40	20	33
17	Priya D	ME	POWER SYSTEM	Lecturer		04.02.2021	Y	Regular	10/07/2023	0	0	25
18	Bhaskar Ranjan	ME	Power Electronics and Drives	Sr. Lecturer		13.09.2016	Y	Regular		50	50	50
19	Jeganraj I	M.E	Avionics	Sr. Lecturer		06.07.2015	N	Regular	28/10/2023	0	0	34
20	Sudhir Kumar	B.Tech	Mechanical Engineering	Lecturer		04.02.2019	Y	Regular		50	0	0
21	Kanti	B.Tech	Computer Science Engineering	Lecturer		26.11.2020	N	Regular	06/02/2023	0	0	33
22	Sujin P	B.E	Civil Engineering	Lecturer		01.04.2022	Y	Regular		0	25	0
23	Vivel Kumar	M.Tech	Computer Science Engineering	Sr. Lecturer		06.05.2019	N	Regular	04/09/2023	0	33	0
24	Anugrah Ashish	BE	Electronics and Communication Engineering	Lecturer		01.12.2022	Y	Regular		40	25	0
25	Simon Antipas	B.Tech	Electrical and Electronics Engineering	Lecturer		03.09.2018	N	Regular	06/09/2023	0	50	50

26	Victor Emmnual	M.TECH	Structural Engineering	Lecturer		28.10.2021	N	Regular	30/11/2023	0	25	0
27	Ragland	B.TECH	Computer Science Engineering	Lecturer		05.10.2023	Y	Regular		30	0	0
28	James T	B.E	Computer Science Engineering	Lecturer		01.03.2023	Y	Regular		25	0	0
29	Max Mark	B.TECH	Mechanical Engineering	Lecturer		01.09.2023	Y	Regular		27.5	0	0
30	Gnaesh Babu	M.E	Power System Engineering	Lecturer		01.10.2022	Y	Regular		50	0	0
31	Ruby Kumari	B.TECH	Computer Science Engineering	Lecturer		18.10.2023	Y	Regular		50	0	0

5.1 Student-Faculty Ratio (SFR)

Year	N	F	SFR=N/F
2023-24 (CAY)	157	9.38	16.73
2022-23(CAYm1)	146	8.71	16.76
2021-22(CAYm2)	147	8.74	16.82
Average SFR	16.77		
Assessment SFR	25		

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
CAY (2023-24)	19	0
CAYm1 (2022-23)	19	0
CAYm2 (2021-22)	17	0

5.2 Faculty Qualification

5.2.1 Faculty Qualification Index

	X	Y	F	FQ = 2 x [(10X + 7Y) / F)]
2023-24	2	7	6	**23**
2022-23	2	7	6	**23**
2021-22	3	5	6	**21.67**
Average Assessment				**22.55**

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

Year	Availability of Faculty of that discipline with PhD. Qualification
CAY (2023-24)	0
CAYm1 (2022-23)	0
CAYm2 (2021-22)	1

5.3 Faculty Retention

Description	2022-23 (CAYm1)	2023-24 (CAY)
No of Faculty Retained	12	10
Total No of Faculty	19	19
% of Faculty Retained	63	52.6
Average	**57.8**	

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

Name of Faculty	Max. 5 per Faculty		
	2021 - 2022 (CAYm2)	2022-2023 (CAYm1)	2023 2024 (CAY)
Mrs. Pameela M	5	2	5
Mr. Ragunath A	4	2	5
Mr. V. David Naik	0	2	5
Mr. Ketu Kumar Sahitya	2	0	5
Mr. Velangi babu	0	0	5
Ms. Pathmapriya A	0	2	5
Mr. Robin S	0	0	2
Mr. Sumit Kumar Singh	5	5	5
Mr. Ravi Kumar Saksenna	2	0	0
Mrs. Catherine K	5	0	5

Mr. Himanshu Kumar Singh	0	0	5
Mr. Daddanala Sanjeeva Kumar	0	0	5
Mr. Karnika Vijay Bhaskar	2	0	0
Mr. Bhaskar Ranjan	5	5	5
Mr. Sudhir Kumar	0	0	5
Mr. Sujin P	0	5	0
Mr. Vivel Kumar	0	3	0
Mr. Anugrah Ashish	0	0	5
Mr. Victor Emmnual	0	3	0
Mr. Ragland	0	0	5
Mr. James T	0	0	5
Mr. Max Mark	0	0	5
Mr. Gnaesh Babu	0	0	5
Mr. Ruby Kumari	0	0	5
Sum	**30**	**29**	**92**
RF= No. of Faculty required to comply with 25:1 SFR as	**5.88**	**5.84**	**6.28**
Assessment [6*(sum/0.5RF)](Marks limited to 30)	**30**	**30**	**30**

Average Assessment over 3 years (Marks limited to 30) : 30

5.4 Organized/ Conducted FDPs and STTP by this department at State / National Level

S.NO	EVENT DATE	PROGRAM TYPE (WORKSHOP / FDP / STTP)	NAME OF THE PROGRAMME	PROGRAM LEVEL (STATE / NATIONAL/INTERNATIONAL)	RESOURCE PERSONS / INSTITUTIONS / ORGANIZATIONS
1	6/11/2023 - 10/11/2023	FDP	Arduino	NATIONAL	Spoken Tutorial (IIT Bombay)
2	02/12/2021 - 03/12/2021	FDP	FDP on Preparing Teaching Plan, Innovation in Teaching Practice	STATE	Dr. Grace Jency J, Gems Polytechnic College, Aurangabad
3	27/08/2021- 28/08/2021	Workshop	Workshop on Electric Vehicle Technology	NATIONAL	Dr.A.Alfred Kirubaraj, Assistant Professor, Karunya University.

5.5 Product development, Consultancy, Manufacturing contracts, testing contracts

S.No	Name of the Faculty Consultant	Nature of Work	Details of Manufacturing Contract	Customer Details	Start Date	End Date	Invoice number/Date
1	Mr. Dinesh Palappan	Training	Wireless & IoT Training	NK Industries	1.12.2020	15.02.2021	6,499

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 standards of education and faculty performance. To achieve this, we have established the Annual Faculty Performance Appraisal and Development System (AFPADS) for all assessment years. 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	10
	C.2	Online Certification Courses / Attended FDP, Workshop	10
	C.3	Research Paper /Books / Chapter Publications	10
	C.4	NITTT Trainings Certificate	10
	C.5	Consultancy	10
D	**Department Development Activities**		60
E	**Institute Development Activities**		50
F	**Contribution to Society**		50
G	**Annual Confidential Report (ACR)**		20
Total (Max Points 100)			**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, communication skills, and attitude.

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.

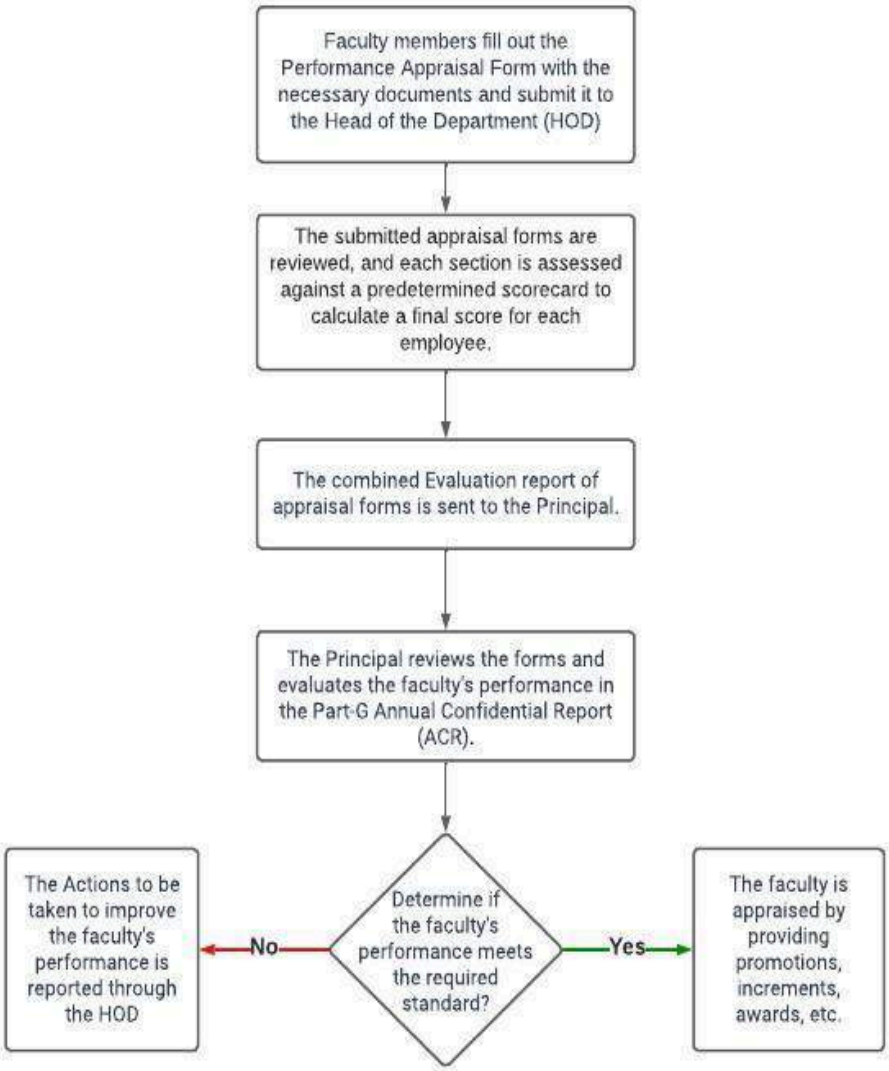
Discussion Points:
During the Appraisal Meeting, several crucial areas are discussed, including:

- Reviewing and confirming an understanding of the essential job functions, annual goals, and performance standards.
- Recognizing strengths and achievements.
- Identifying areas requiring improvement and establishing agreements on how to achieve improvement.
- 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.



The Annual Faculty Performance Appraisal and Development System (AFPADS) at GEMS Polytechnic College is a cornerstone of our commitment to academic excellence and professional growth, ensuring that our faculty members continue to excel in their roles while pursuing opportunities for advancement within 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 qualification up-gradation of our faculty, in line with the "National Initiative for Technical Teachers Training (NITTT)" 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.nittt.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)
Module8: Miscellaneous Aspects (Institutional Management & Administrative Procedures) (40 hours)

Certification:
Faculty members must successfully 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 clearing 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 the 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. Raghunath A	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. Ketu Kumar Sahitya	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.	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
4.	Mrs. Pameela M	Module 1	Completed & Certified
		Module 2	Completed & Certified
		Module 3	Completed & Certified

5.	Mr. V. David Naik	Module 1	Completed & Certified
6.	Mr. Robin S	Module 1	Completed & Certified
		Module 2	Completed & Certified
		Module 3	Completed & Certified
		Module 5	Completed & Certified

List of Teaching Faculties Completed NPTEL Courses:

S.No.	Name of the Faculty	Name of Course	Duration
1.	**Mrs. Pameela M**	Electric Vehicle	4 Weeks
		Effective Teaching Practices	4 Weeks
2.	**Mr. Ragunath**	Electric Vehicle	4 Weeks
3.	**Mr. Ketu Kumar Sahitya**	Electric Vehicle	4 Weeks
4.	**Mr.V. David Naik**	Effective Teaching Practices	4 Weeks
5.	**Mrs. Grace Jency**	Effective Teaching Practices	4 Weeks

List of Teaching Faculties ISTE Membership:

S.No.	Name of the Faculty	ISTE Life Membership Number
1.	Mrs. Pameela M	**LM - 138384**
2.	Mr. Ragunath A	**LM - 138385**

S.No.	Name of the Faculty with designation	Degree	Name of the college/University
1	Mr. Ragunath A, Senior Lecturer/EEE	M.Tech (Pursuing)	National Institute of Technical Teachers Training and Research (NITTTR), Chandigarh

Conference/Paper Publishing Details:

S.No.	Name of the Faculty with designation	Date	Degree	Name of the paper	Name of the Journal	Name of the college/University
1.	Mrs. Pameela M	17/11/2023	M.E	Emerging Innovations and Progress in Electric Vehicle Technology	Journal of Electrical Engineering & Automation	Gems Polytechnic College, Aurangabad
		21/09/2022		Detection of Cyber Attack in Electric Vehicles using ALSTM Based Machine Learning	IEEE: 2022 4th International Conference on Inventive Research in Computing Applications (ICIRCA)	Gems Polytechnic College, Aurangabad
		11/05/2023		Power Quality Concern due to Power System	Journal of Trends in Computer Science and Smart Technology	Gems Polytechnic College, Aurangabad

				Improvement with Renewable Energy Sources and its Remedies	(ISSN: 2582-4104)	
2.	Mr. Ragunath A	23/11/2023	M.TECH (Pursuing)	Net Zero Energy Building Initiative	International Research Journal on Advanced Science Hub 2582-4376 Vol. 04, Issue 11 November	Gems Polytechnic College, Aurangabad
3.	Mr. Sumit Singh	31/03/2022	M.TECH	Automatic Plant Irrigation System	Journal of Emerging Technologies and Innovative Research	Gems Polytechnic College, Aurangabad
		29/03/2022		Solar Energy Charger and Auto-focusing	Journal of Emerging Technologies and Innovative Research	Gems Polytechnic College, Aurangabad

Criterion 6

Facilities and Technical Support

Criterion - 6	Facilities and Technical Support	100

6. 1. Availability of adequate, well equipped classrooms to meet the curriculum requirements (10)

In line with AICTE norms, our Electrical and Electronics Engineering Department at GEMS Polytechnic College is equipped with ample and well-furnished classrooms. These facilities are thoughtfully designed to cater to the specific curriculum requirements of the department, ensuring a conducive learning environment for our students.

Sl.No.	Classroom	Carpet Area	Shared / Exclusive	Seating Capacity	Availability of Smart facilities	Weekly utilization
1	Room No:1103 (1st Year)	66 sqm	Exclusive	60	Blackboard,Projector, Speakers, Notice Board, Internet LAN Connection, Different Charts	6 Days
2	Room No:1106 (2nd Year)	66 sqm	Exclusive	60	Blackboard, Smart Board, Projector, Speakers, Notice Board, Different Charts	6 Days
3	Room No:1105 (3rd Year)	66 sqm	Exclusive	60	Blackboard, Projector, Speakers, Internet LAN Connection, Notice Board, Different Charts	6 Days
4	Drawing Hall	132 sqm	Shared	60	Blackboard	During Drawing class
5	Seminar Hall	448.7sqm	Shared	600	Projector, Audio System	During Seminar, Guest Lectures, Workshops, Association Events

6.2 Availability of adequate and well-equipped workshops, Laboratories and Technical manpower to meet the curriculum requirements (40)

A. Adequacy (10)

At GEMS Polytechnic College, the **Department of Electrical and Electronics 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-prescribed experiments 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	Name of the Laboratory	Lab Location	Exclusive / Shared
1	Electronics Laboratory	Room No. 1102	Shared
2	Measurements Laboratory	Room No. 1305B	Shared
3	Electrical Machines Laboratory	Room No. 1010	Shared
4	Electrical Workshop Laboratory	Room No. 1101	Shared
5	Power Electronics Laboratory	Room No. 1304	Shared
6	Microprocessor and Microcontroller Laboratory	Room No. 1104	Shared

B. Quality of Labs/workshop (20)

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.

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 (10)

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 knowledge- rich environment for our students.

At GEMS Polytechnic College, we are committed to providing students in the Department of Electrical & Electronics 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
01	Electronics Laboratory	Mr. Prashun Bharti	Lab. Assistant	DEEE
02	Measurements Laboratory	Mr. Ankit Kumar	Lab. Assistant	DEE
03	Electrical Machines Laboratory	Mr. Ajeet Kumar	Lab. Assistant	DEE
04	Electrical Workshop Laboratory	Mr. Ajeet Kumar	Lab. Assistant	DEE
05	Power Electronics Laboratory	Mr. Ankit Kumar	Lab. Assistant	DEE
06	Electrical Simulation & Microprocessor and Microcontroller Laboratory	Mr. Ravi Kumar Choudhary	Lab. Assistant	DEE

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 Choudhary	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 (20)

A. Facilities (10)

- 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.

Sr. No	Facility Name	Percentage of Utilization
1	Prototype of Electrical Components Models	100% of utilization in Academics.
2	Smart Class Room	100% of utilization in Academics.
3	Internet & Wifi Facility	100% of utilization in Academics.
4	English Language Laboratory	20% of utilization in Academics.
5	Digital Library	25% of utilization in academics
6	Department Library	100% of utilization in Academics.
7	Manual and Records Facilities	100% of utilization in Academics.
8	Virtual Labs	20% of utilization in Academics.
9	NPTEL Video Lectures	25% of utilization in academics
10	Previous Semester Projects Models and Reports	100% of utilization in Academics.
11	Spoken Tutorial-IIT Bombay	20% of utilization in Academics.
12	Display Charts	100% of utilization in Academics

C. Relevance to POs/PSOs (5)

- 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	The Prototype of Electrical models consists of various scaled-down physical models representing Electrical systems, components, and mechanisms.	This facility has been established to provide students with tangible examples of complex mechanical systems and to facilitate hands-on learning.	Students can use these models to better understand the operation of various mechanical systems, identify key components, and observe how different elements work together.	This facility enhances students' understanding of mechanical concepts, component interactions, and the application of theoretical knowledge to real-world systems.	PO1, PSO1, PSO3
2	Smart Class Room	The Department is equipped with 3D printers for additive manufacturing, allowing students to create three-dimensional objects from computer-aided design (CAD) files.	3D printers are essential for prototyping and manufacturing in modern engineering. This facility enables students to gain practical experience with additive manufacturing.	Students can design and 3D print prototypes, parts, and models. They can explore the entire 3D printing process, from CAD design to final product.	Students will enhance their skills in product design, additive manufacturing, and understanding the possibilities and limitations of 3D printing.	PO1, PO3, PO4, PSO1, PSO3
3	Internet & Wi-fi Facility	The Virtual Lab is a computer-based platform that simulates various mechanical engineering experiments and processes.	The Virtual Lab has been established to provide students with a safe and accessible environment for conducting experiments,	Students can access and interact with a wide range of virtual experiments, allowing them to practice and learn in a risk-free,	This facility enhances students' problem-solving skills, understanding of complex mechanical systems, and their ability to analyze	PO1, PO2, PO4, PSO3

			simulations, and enhancing understanding of theoretical concepts.	controlled environment.	and interpret experimental results.	
4	English Language Laboratory	The Magnetic Particle Testing Machine is used for non-destructive testing of ferrous materials to detect surface and near-surface defects.	This facility is crucial for educating students in non-destructive testing techniques, which are essential for quality control and safety in various industries.	Students can practice setting up and conducting magnetic particle testing on test specimens to identify defects, understand the principles of magnetization, and interpret test results.	This facility enhances students' knowledge of material testing, inspection techniques, and their ability to evaluate and document defects in materials.	PO1, PO4, PSO3
5	Digital Library	The Dry Penetration Testing Instrument is used to assess the surface integrity of materials and detect surface defects.	This facility is essential for teaching students the principles of material testing and quality assessment, particularly in cases where liquid penetrant testing is not feasible.	Students can perform dry penetration testing on various materials and components, gaining experience in identifying and evaluating surface defects.	This facility enhances students' understanding of material quality assessment, surface integrity, and non-destructive testing methods.	PO1, PO4, PSO3
6	Department Library	The Profile Projector is an optical measurement instrument used for accurate measurement and inspection of 2D profiles and features on various workpieces.	This facility has been established to provide students with the ability to perform precise dimensional measurements and inspect the profiles and features of mechanical components.	Students can use the Profile Projector to measure and inspect workpieces, assess geometric tolerances, and perform quality control on machined parts.	This facility enhances students' skills in precision measurement, geometric dimensioning and tolerancing (GD&T), and quality control techniques.	PO1, PO4, PSO3

7	Manuel and Records Facilities	The Digital Vernier Caliper is a handheld instrument used for making accurate and precise measurements of length, thickness, and inside/outside diameters.	This facility is essential for teaching students how to perform accurate measurements, a fundamental skill in engineering and manufacturing.	Students can use the Digital Vernier Caliper to measure workpiece dimensions with high precision, ensuring compliance with design specifications.	This facility enhances students' knowledge and skills in dimensional metrology, accuracy in measurements, and quality assurance.	PO1, PO4, PSO3
8	Virtual Labs	The Carbon Residue Testing Instrument is used to determine the carbon residue of fuels and oils, which is crucial for assessing their quality.	This facility is important for educating students on the evaluation of fuel and lubricant quality, which is essential in the automotive and energy industries.	Students can use the Carbon Residue Testing Instrument to perform tests on various fuel and lubricant samples, gaining hands-on experience in assessing their quality.	This facility enhances students' knowledge of fuel and oil quality assessment, compliance with industry standards, and understanding the impact of impurities on performance.	PO1, PO4, PSO3
9	NPTEL Video Lectures	The CNC Lathe is a computer-controlled machine tool designed for precision turning and shaping of workpieces, including metal, plastic, and other materials.	The CNC Lathe is a fundamental tool in modern manufacturing. It has been established to provide students with practical experience in CNC machining, which is essential for a career in advanced manufacturing.	Students can use the CNC Lathe to set up and operate the machine, create parts, and understand the principles of CNC programming, tool selection, and material removal processes.	This facility enhances students' skills in CNC machining, computer-aided manufacturing (CAM), and understanding advanced manufacturing processes.	PO1, PO3, PO4, PSO2, PSO3
10	Previous Semester Projects Models and Reports	The 4 Wheeler Chassis Model which represents an automobile chassis, including components such as the frame,	This facility is designed to provide students with a hands-on understanding of automotive engineering and	Students can study and analyze the 4 Wheeler Chassis Model, examining the design, components, and	This facility enhances students' knowledge of automotive engineering, chassis design, and the	PO1, PO3, PSO5, PO7

		suspension, and steering systems.	chassis design, helping them grasp the complexities of vehicle structures.	structural features, which are vital in vehicle engineering.	application of mechanical principles in the automotive sector.	
11	Spoken Tutorial-IIT Bombay	The 2 Wheeler Chassis Model which represents a motorcycle or scooter chassis, showcasing key components and systems.	This facility is established to give students an in-depth understanding of two-wheeled vehicle chassis design and engineering.	Students can examine and analyze the 2 Wheeler Chassis Model, learning about the structural elements, suspension, and mechanical systems found in two-wheeled vehicles.	This facility enhances students' knowledge of motorcycle and scooter chassis design, vehicle dynamics, and the application of mechanical principles in the two-wheeler industry.	PO1, PO3, PSO5, PO7
12	Display Charts	This facility comprises physical models and comprehensive project reports from previous semesters in the Department of Mechanical Engineering. Models and reports cover a range of mechanical systems and innovative projects undertaken by students in earlier semesters.	To provide valuable reference and learning resources for current students. To encourage knowledge sharing and showcase successful projects. To deepen the understanding of project design, execution, and documentation.	Students can study physical models to gain hands-on insight into engineering concepts. Project reports serve as detailed guides for project development and analysis. Learning from the experiences and outcomes of past projects.	Improved project development and documentation skills. Enhanced problem-solving and critical thinking abilities. Deeper understanding of mechanical engineering concepts and practical applications.	PO1, PO2, PO3, PSO1, PSO2, PSO3

6.4 Laboratories: Maintenance and overall ambiance (10)

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 (10)

Sr. 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	AutoCAD CREO 3Ds Max Revit Architecture 2024 Fusion 360 (education License)	Shared	Local Area Network using star topology - Big Data	No
3	10 (Microprocessor & Microcontroller Lab	1:5	----------	Shared	-	-

6.6 Language lab (10)

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 Second 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 Head Phones	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 labs 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:

Orell Talk

Installation Certificate

This is to certify that M/s. Gems Polytechnic College, Pirlampur, Bihar has installed OréllTalk, the world's most recognised Language Lab Software to learn any language in the most sophisticated way and the license of the software will remain active until the validated expiry.

Online / Offline Version (Specify URL) : Orell Talk Smart Version (1+30 Consoles)

Installed on : 05/07/2021 License Mode / Expiry Date : Lifetime Perpetual

Authorized Signatory

Orell

Orell Technosystems (India) Pvt Ltd.

Reg. office : 1st Floor, BCG Tower, Opp CSEZ, Seaport- Airport Road, Kakkanad, Cochin - 682037, Kerala , India

Criterion 7

Continuous Improvements

7 CONTINUOUS IMPROVEMENT (75)

7.1 Actions taken based on the results of evaluation of each of the POs and PSOs (25)

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**
2.58	**2.29**

Observations:

Observed from Attainment Value a performance below the target in basic and discipline-specific knowledge, indicating a need for improvement in understanding and applying fundamental concepts.

Action Taken:

Action 1

Enhance Curriculum Alignment:

- Review and align the curriculum with the specific learning outcomes of PO 1.
- Identify and fill gaps in content to ensure comprehensive coverage of basic and discipline-specific knowledge.

Action 2

Integrate Practical Applications:

- Infuse real-world examples and applications into the teaching approach.
- Emphasize hands-on activities or case studies to deepen students' practical understanding of basic and discipline-specific knowledge.

PO2	**Problem Analysis:** Identify and analyze well defined Engineering problems using codified standard methods.
Target Level	**Attainment Level**
1.79	**1.62**

Observations:

Demonstrates a performance slightly below the target in problem analysis, suggesting the opportunity for improvement in analytical skills.

Action Taken:

Action1 Remedial Classes:

- Organize targeted remedial classes focused on the application of codified standard methods in problem-solving.
- Address specific areas where students demonstrated deficiencies in their initial assessments.

Action 2 Retesting Opportunities:

- Offer retesting sessions to allow students to apply the learned concepts and improve their problem analysis abilities.
- Ensure the retesting format includes varied problems that challenge students to apply codified standard methods.
- Provide constructive feedback based on the retest performance to guide further improvement.

Action 3 Monitoring and Feedback:

- Regularly assess the participation and progress of students attending remedial classes.
- Collect feedback on the effectiveness of the remedial sessions to make necessary adjustments.

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**
1.85	**1.63**

Observations:

Indicates a performance slightly below the target in the design and development of solutions, suggesting the opportunity for improvement in practical application skills.

Action Taken:

Action1

- Encouraged students to propose innovative ideas and projects for societal welfare, fostering creativity and real-world problem-solving skills.

Action 2

- Emphasized the completion of mini and major projects to enhance students' design skills, providing practical experience in tackling engineering problems and developing solutions.

PO4	**EngineeringTools, Experimentation and Testing:** Apply modern Engineering tools and appropriate techniques to conduct standard tests and measurements.
Target Level	**Attainment Level**
1.91	**1.74**

Observations:

Indicates a performance below the target in utilizing engineering tools, experimentation, and testing, highlighting the need for improvement in practical application skills.

Action Taken:

Action1

- Facilitated peer-to-peer learning and support groups where students can collaborate and learn from each other in the context of engineering tools and experimentation.

Action 2

- Encouraged subject teachers to provide extra assistance, clarify doubts, and offer guidance to students, especially those struggling with the use of modern engineering tools and 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**
1.61	**1.49**

Observations:

Indicates a performance below the target in applying engineering practices for society, sustainability, and the environment, highlighting the need for improvement in these aspects.

Action Taken:

Action1

- Strengthening the connection with industry by organizing more frequent field visits, internships, and in-plant training opportunities for students to gain practical experience in real-world settings.

Action 2

- Encouraging students to collaborate on and execute projects that directly address societal needs, environmental concerns, and sustainability challenges, with a focus on innovations that benefit the community.

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.
Target Level	**Attainment Level**
2.07	**1.77**

Observations:

Demonstrates a performance slightly below the target in project management, signaling the potential for improvement in project-related skills.

Action Taken:

Action1

- Encouraged student participation in project contests and technical events to develop leadership skills and project management abilities.

Action 2

- Implemented a mentorship program where experienced faculty members guide students in managing engineering projects effectively.

PO7	**Life - Long Learning:** Ability to analyze individual needs and engage in updating in the context of technological changes.
Target Level	**Attainment Level**
1.55	**1.46**

Observations:

Indicates a performance below the target in fostering life-long learning, suggesting an opportunity for enhancement in cultivating continuous learning habits.

Action Taken:

Action1

- Provide students with online courses from institutions like Spoken tutorial, IIT Bombay, and CISCO for self-paced learning and staying updated with technology.

Action 2

- Encourage students to take part in external technical competitions, conferences, and events to promote lifelong learning beyond the classroom.

PSO1	**Provide a strong foundation in mathematical, science, Electrical and Electronics engineering to solve electrical and electronics problems.**
Target Level	**Attainment Level**
1.81	**1.69**

Observations:

Indicates a performance slightly below the target in providing a strong foundation in mathematical, science, electrical, and electronics engineering, indicating the opportunity for improvement in delivering essential knowledge.

Action Taken:

Action1

Action 1 Interactive Workshops:

- Conduct interactive workshops or problem-solving sessions to reinforce foundational concepts.
- Encourage student participation and collaborative problem-solving to enhance understanding and application skills.

PSO2	**Understand, analyze, simulate and design electrical machines, modern electrical drives, latest electronic systems, Embedded Systems, IOT and automation of systems and to determine their performance through testing.**
Target Level	**Attainment Level**
1.54	**1.51**

Observations:

Indicates a performance slightly below the target in providing a strong foundation in mathematical, science, electrical, and electronics engineering, indicating the opportunity for improvement in delivering essential knowledge

Action Taken:

Action1

Specialized Workshops:

- Organize specialized workshops focused on understanding, analyzing, and designing electrical machines, electronic systems, Embedded Systems, IoT, and automation.

Action 2

Industry Collaboration:

- Establish partnerships with industry professionals to provide insights into the latest technologies and real-world applications.
- Facilitate guest lectures or industry visits to expose students to current trends and challenges in the field.

PSO3	**Develop and implement electrical and electronics allied interdisciplinary projects to meet the demands of industry and to provide solutions for energy conservation and sustainability.**
Target Level	**Attainment Level**
1.69	**1.54**

Observations:

Indicates a performance slightly below the target in developing and implementing electrical and electronics allied interdisciplinary projects for industry demands and energy conservation.

Action Taken:

Action1

Interdisciplinary Project Showcases:

- Organize showcases for interdisciplinary projects, allowing students to present their solutions to industry-related challenges.
- Encourage creativity and innovation in project development to align with industry demands.

Action 2

Sustainability Integration:

- Integrate sustainability principles into project requirements, encouraging students to develop solutions that prioritize energy conservation and environmental sustainability.
- Provide guidance on incorporating sustainable practices in project implementation.

7.2 Improvement in Success Index of Students without the backlog (10):

Items	Latest passed out Batch (2020-21)	Latest Passed out Batch minus 1 (2019-20)	Latest Passed out Batch minus2 (2018-19)
Success Index (from 4.2.1)	0.24	0.05	0.22

7.3 Improvement in Placement and Higher Studies (10):

Items	Latest passed out Batch (2020-21)	Latest Passed out Batch minus 1 (2019-20)	Latest Passed out Batch minus2 (2018-19)
Placement Index (from 4.6)	1.17	1.19	1.15

7.4 Improvement in Academic Performance in Final year (10):

Items	Latest passed out Batch (2020-21)	Latest Passed out Batch minus 1 (2019-20)	Latest Passed out Batch minus2 (2018-19)
Academic Performance Index(from 4.3)	8.15	7.94	5.25

7.5 Internal Academic Audits to Review Complete Academics & to Implement Corrective Actions on Continuous Basis (10):

Items	2022-23(CAYm1)	2022-21(CAYm2)	2020-21(CAYm3)
Internal Academic Audits	3	4	3

7.6 New Facility created in the Program (10):

Items	2022-23(CAYm1)	2022-21(CAYm2)	2020-21(CAYm3)
New Facility Created	Microprocessor & Microcontroller Lab	Smart Board in Class Rooms	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.

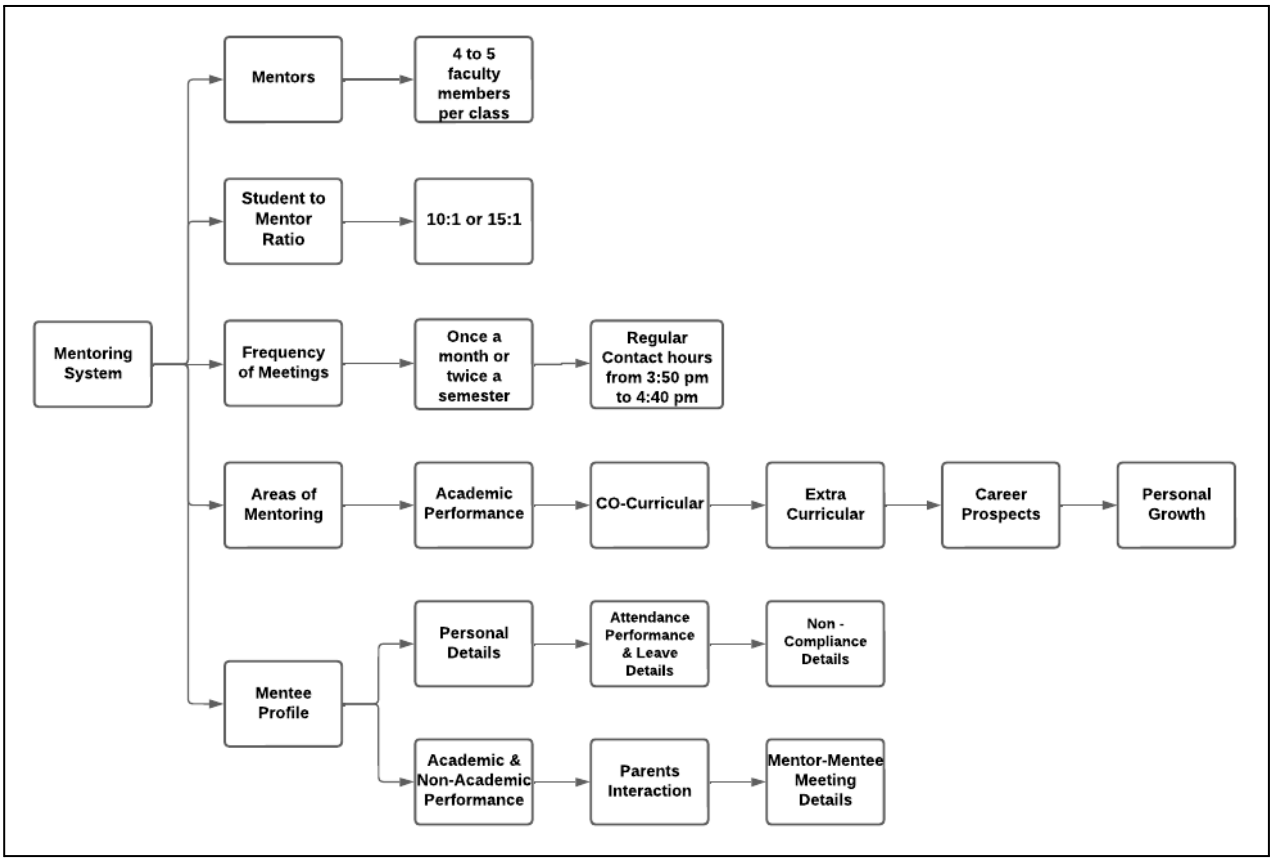
Retention and Satisfaction:

- 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 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 includes 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 CMS:

- Feedback forms are seamlessly assigned to students through the campus management 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 campus management 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:	● The internet speed has been enhanced to 90 Mbps to facilitate better connectivity for academic and research purposes.
Wi-Fi Connectivity:	● Wi-Fi connectivity has been extended to both the college and hostel areas, allowing students greater access to online resources.
Enhanced Library Resources:	● Additional books have been added to our library to expand the range of academic resources available to students.
Dedicated Computer Lab:	● A separate computer center has been established to ensure maximum student utilization and accessibility.
Transport Facilities:	● Bus facilities have been provided for students traveling to SBTE end-semester examination centers, making transportation more convenient
Improved Training and Placement Cell:	● Our Training and Placement Cell has been well-equipped and strengthened based on student feedback, enhancing career development opportunities.
Water Facility in Hostel:	● 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 Co-ordinator	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 Naik Vadithe	Lecturer/ EEE
11		Mr. Kumar S	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

WINDCARE INDIA Private Limited	GLOBAL COMPOSITE UAE	Apollo Tyres Pvt Ltd	Dhoot Transmission Pvt Ltd
Qcon - Qatar Engineering & Construction Company W.L.L	ANAND GROUP	SHREE CEMENT LIMITED	
KP Reliable technique India Pvt Ltd	JK RAVINDRA & TATA MOTORS	SHREE CEMENT	
DHARMARAJ & SONS ENGINEERING & CONSTRUCTION	Nobel Hygiene		

Placement Details

Academic Year	Department	No. of Final Year Students	Total No. of Final Year Students	No. of students placed in companies/ Government Sector	No. of students admitted to higher studies	No. of students turned entrepreneur	Total Number of Students	Overall %
2020 - 2023 (LYG)	CIVIL	42	137	42	0	0	134	98%
	CSE	26		24	2	0		
	EE	23		23	0	0		
	EEE	23		20	2	0		
	MECH	23		21	0	0		
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%
	CSE	14		6	3	0		
	EE	15		7	5	1		
	EEE	5		2	1	0		
	MECH	15		9	3	0		

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.

IIC Student Council Explores Entrepreneurship at IIT Patna Summit

Twenty-six members of the IIC Student Council, accompanied by Mr. Johan and Mrs. Catharine, attended the 11th Entrepreneurship Summit organized by IIT Patna. Dignitaries from the Bihar Entrepreneurship Association graced the event, where successful entrepreneurs shared their stories and challenges. Women entrepreneurs' successes provided diverse insights. The summit, featuring prototypes and products from budding entrepreneurs, ran from 10:00 am to 4:00 pm, offering students a unique opportunity to engage with real-world entrepreneurship.

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. 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, 3rd 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, Lightnsalt 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.Ragunath
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 & innoivation, 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, behaviour	**Mr.Kumar S** Mr. Bhaskar Ranjan
A.7	Organise an Inter/Intra Institutional Innovation Competition/Challenge/Hack athon 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 chage 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.

Advanced Level Training (IIC Calendar Year 2021-2022):

Bhaskar Ranjan, a dedicated member of GEMS Polytechnic College, Bihar, furthered his expertise by completing the Innovation Ambassador training at the Advanced Level. This advanced training comprised 15 sessions totalling 30 contact hours and was conducted online by MoE's Innovation Cell & AICTE during the IIC Calendar year 2021-2022. Ranjan's proactive engagement underscores his dedication to advancing innovation within the educational landscape.

The Institution's Innovation Council at Gems Polytechnic College is a beacon of innovation, entrepreneurship, and creativity. It empowers students to not only pursue their dreams but also create transformative solutions for societal challenges. With its well-managed resources and a range of effective initiatives, the IIC plays a pivotal role in encouraging students to embark on the entrepreneurial journey, making a meaningful impact in the world of innovation and startups.

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 devises 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:

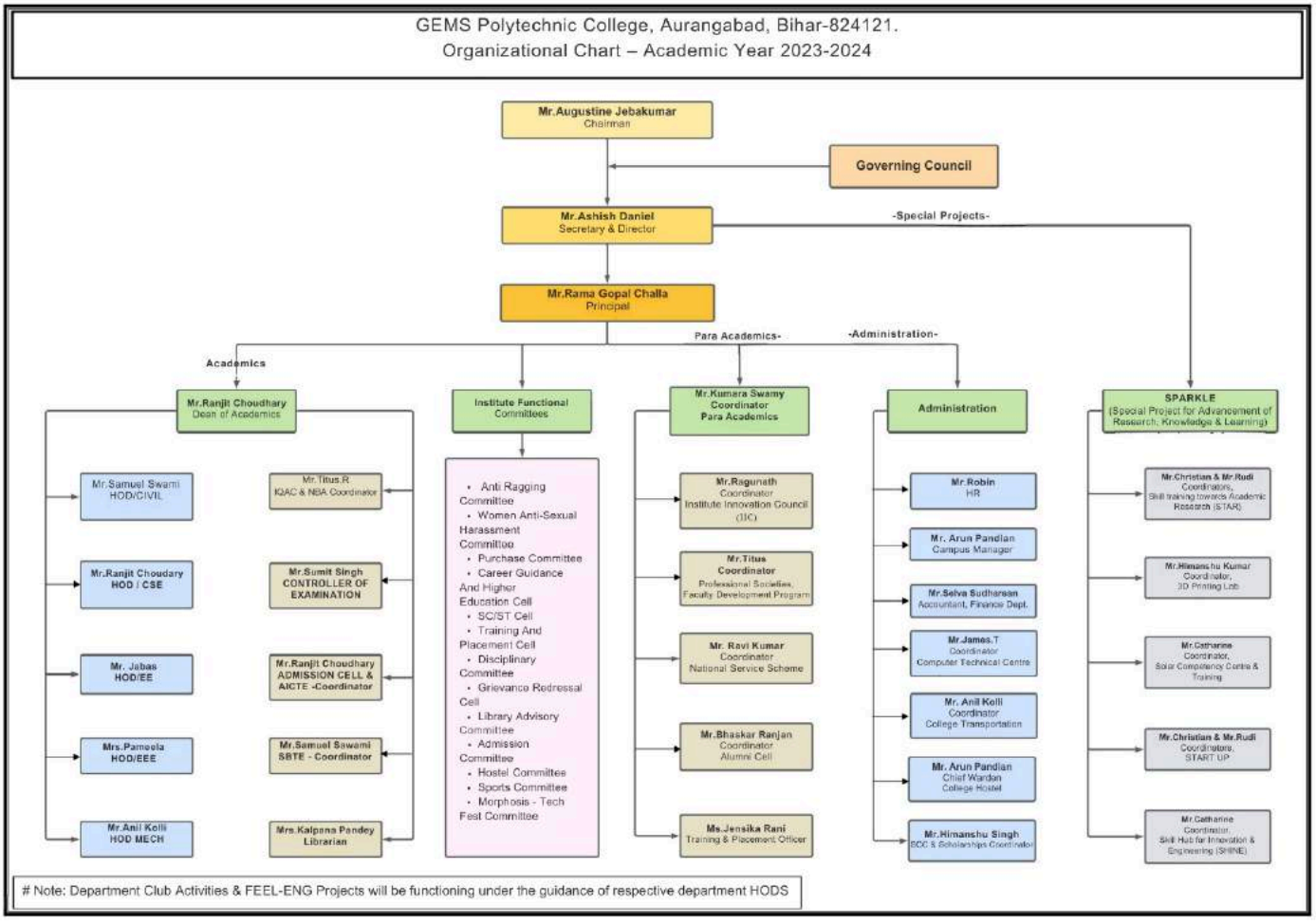
Sl.No	Name	Affiliation	Position
Members nominated by the Trust/Management :			
1.	**Mr.Augustine Jebakumar**	General Secretary, GEMS	Chairman
2.	**Mr.Ashish Daniel**	Secretary, GPC	Member
Educationist / Industrialist to be nominated by the Management :			
3.	**Dr. B. Priestly Shan**	Pro Vice Chancellor, 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
			Mrs. 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,** JKRavindra-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 the 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.	**Mrs. Pameela M**	Head of the Department	Convenor	pameela@gemspolytechnic.edu.in 7449225668
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.Robin S**	Dept. Senior Faculty Representative	Member	robin@gemspolytechnic.edu.in 9976031663
5.	**Mr. Ragunath A**	Dept. Senior Faculty Representative	Member	ragunath@gemspolytechnic.edu.in 9003328207
6.	**Mr.Arunjay Kumar**	Industry Representative	Member	aks@jkraautomobiles.com & 9631936666
7.	**Mr.Raman Kumar**	Academia Representative	Member	ramankr.eee@gmail.com & +91 99585 35618
8.	**Mr.Anurag Ranjan**	Alumni Representative	Member	anurag22eee11@gemspolytechnic.edu.in 8084011340
9.	**Mr.Ujjwal Kumar**	2nd Year Student Representative	Member	ujjwal22eee17@gemspolytechnic.edu.in 9142400906
10.	**Mr.Prem Kumar**	3rd Year Student Representative	Member	prem21019eee@gemspolytechnic.edu.in 8083544789

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 (Campus Management 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 campus management software 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 *(SBTE, AICTE, DRCC etc.)*
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.

			(Please support such applications with the invitation and your contribution to such events)
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.
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 1500 km.
Annual Leave (AL)	30	Principal & Director	The employees who have 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).

			(Ex. 3-5 LC/EG =1CL, *6-8 LC/EG = 2CL, 9-11 LC/EG = 3CL)*

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 *(SBTE, AICTE, DRCC etc.)*
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). *(Ex. 3-5 LC/EG =1CL,* *6-8 LC/EG = 2CL, 9-11 LC/EG = 3CL)*

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 *(SBTE, AICTE, DRCC etc.)*
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)	15	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	2per 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). *(Ex. 3-5 LC/EG =1CL, 6-8 LC/EG = 2CL, 9-11 LC/EG = 3CL)*

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:

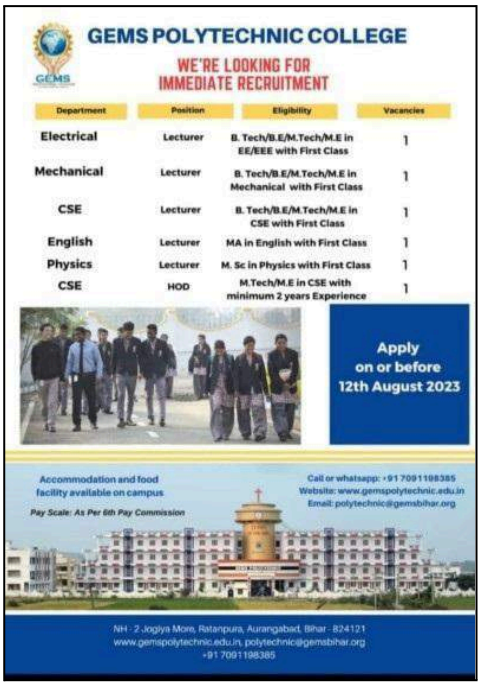
- The Head of the Departments (HODs) plays a pivotal role in estimating the manpower requirements, both for teaching and non-teaching positions.
- HODs are required to submit a detailed report outlining the anticipated staffing needs at least three months before the start of each semester. This report is forwarded to the Human Resource Officer (HRO).

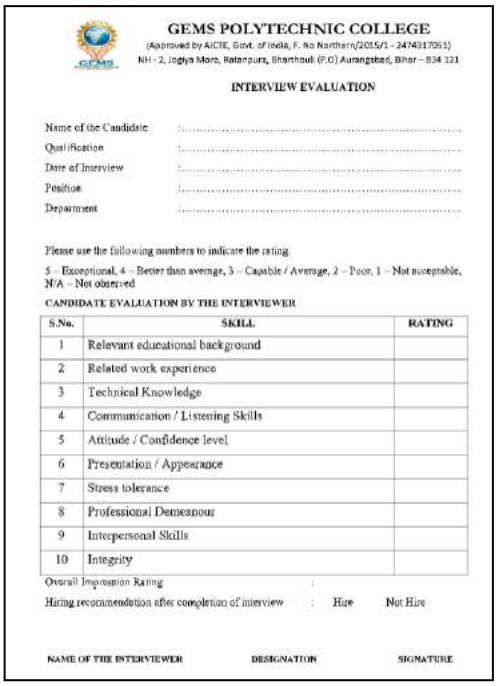
HRO Review and Vacancy Sorting:

- 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.





Faculty Recruitment Poster **Interview Evaluation sheet**

Profile Screening:

- 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.Ganesh Babu 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	**Ms.Jensika Rani,** Sr.Lecturer/Civil	a. Provide students with information and guidance on career opportunities and

	Higher Education Cell		higher education options. b. Organize workshops, seminars, and counseling sessions to help students make informed career and education choices.
5	SC/ST Cell	**Mr. V. 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,**	a. Oversee the admission process for new students.

		Dean of Academics	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.Ganesh Babu** 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**	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.Kalpana 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 academi Development activities.	**Below Rs.1 Lakh**
2	**HoDs**	Procurement of laboratory Consumable 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/ Anyother, 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/Anyother, 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/Anyother, 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/Anyother, 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.

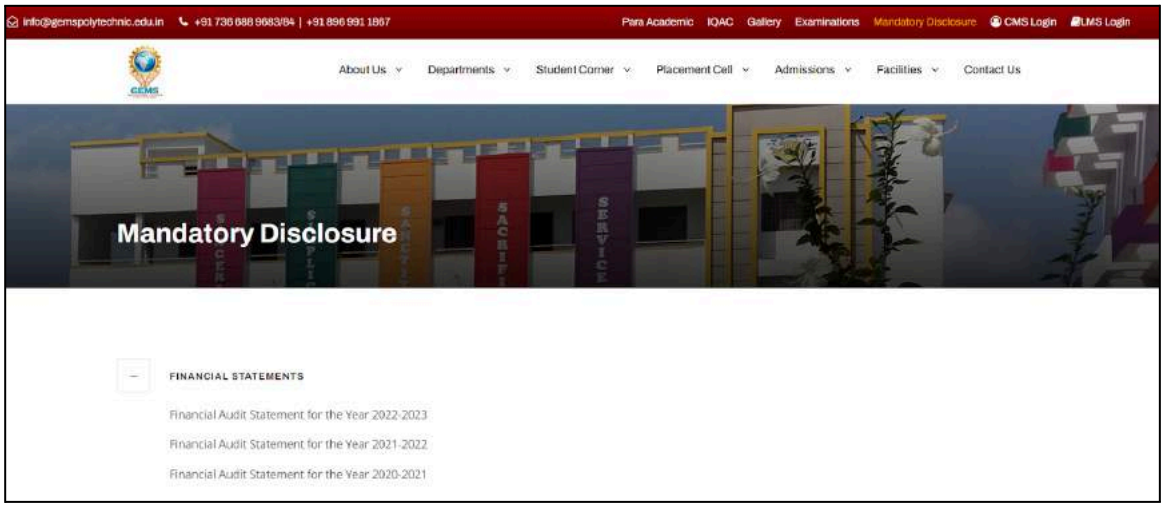
By implementing these comprehensive measures, we strive to ensure that allocated funds are utilized efficiently and effectively, aligning with the institution's goals and objectives. Our commitment to responsible financial management and accountability is unwavering, as we continuously work to enhance 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	₹4,200.00	Non Recurring	₹1,400.00
Recurring	₹99,004.00	Recurring	₹82,807.00
Total Budget	₹1,03,204.00	Total Expenditure	₹84,207.00

Table 2 - CFYm2 2021-22			
Budget		**Actual expenditure**	
Non Recurring	₹86,598.00	Non Recurring	₹82,773.00
Recurring	₹99,559.00	Recurring	₹53,108.00
Total Budget	₹1,86,157.00	Total Expenditure	₹1,35,881.00

Table 3 - CFYm3 2020-21			
Budget		**Actual expenditure**	
Non Recurring	₹2,000.00	Non Recurring	₹1,000.00
Recurring	₹1,17,870.00	Recurring	₹67,770.00
Total Budget	₹1,19,8700.00	Total Expenditure	₹68,770.00

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 and Electronics 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 Electrical and Electronics 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 Electrical and Electronics 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.

Table: Utilization of budget

Financial Year	Budget Proposed in Rs.	Budget Sanctioned In Rs.	Actual Expenditure in Rs.	Percentage of Utilization
2022-2023	₹1,03,204.00	₹90,000.00	₹84,207.00	93.56%
2021-2022	₹1,86,157.00	₹1,40,000.00	₹1,35,881.76	97.06%
2020-2021	₹1,19,870.00	₹70,000.00	₹68,770.00	98.24%
2019-2020	₹3,88,475.00	₹3,60,000.00	₹3,44,930.00	95.81%

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:

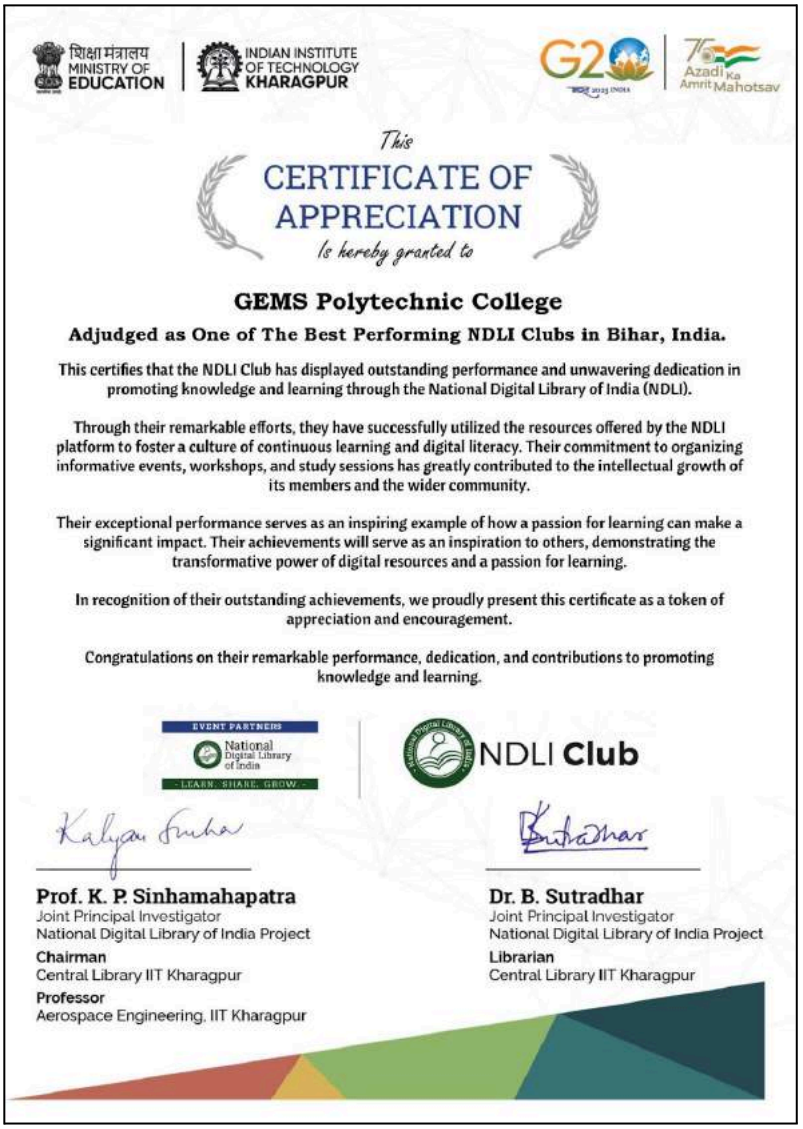
- We offer a comprehensive collection of books specifically tailored to assist students in their program-wise competitive examinations and civil service exam preparation.

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.



शिक्षा मंत्रालय MINISTRY OF EDUCATION | INDIAN INSTITUTE OF TECHNOLOGY KHARAGPUR | G20 | Azadi Ka Amrit Mahotsav

This

CERTIFICATE OF APPRECIATION

Is hereby granted to

GEMS Polytechnic College

Adjudged as One of The Best Performing NDLI Clubs in Bihar, India.

This certifies that the NDLI Club has displayed outstanding performance and unwavering dedication in promoting knowledge and learning through the National Digital Library of India (NDLI).

Through their remarkable efforts, they have successfully utilized the resources offered by the NDLI platform to foster a culture of continuous learning and digital literacy. Their commitment to organizing informative events, workshops, and study sessions has greatly contributed to the intellectual growth of its members and the wider community.

Their exceptional performance serves as an inspiring example of how a passion for learning can make a significant impact. Their achievements will serve as an inspiration to others, demonstrating the transformative power of digital resources and a passion for learning.

In recognition of their outstanding achievements, we proudly present this certificate as a token of appreciation and encouragement.

Congratulations on their remarkable performance, dedication, and contributions to promoting knowledge and learning.

EVENT PARTNERS National Digital Library of India - LEARN. SHARE. GROW. - | NDLI Club

Prof. K. P. Sinhamahapatra
Joint Principal Investigator
National Digital Library of India Project
Chairman
Central Library IIT Kharagpur
Professor
Aerospace Engineering, IIT Kharagpur

Dr. B. Sutradhar
Joint Principal Investigator
National Digital Library of India Project
Librarian
Central Library IIT Kharagpur

9.4.2 Internet (10):

Name of the Internet provider	• **ISHAN (Primary),** • **BIG-DATA (Secondary)**
Available bandwidth	• **50Mbps (Primary),** • **40Mbps (Secondary)**
WiFi availability	• **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	• **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	• **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 memebers Staff- 17 members	140

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

GEMS POLYTECHNIC COLLEGE

DEPARTMENT OF CIVIL ENGINEERING

NOTABLE ALUMNI

NARGIS PARWEEN
Batch: 2015-2018
Designation: Special Survey Amin
Company Name: Govt. of Bihar

BASANT KUMAR MEHTA
Batch: 2015-2018
Designation: Project Engineer
Company Name: Dasai Construction Pvt.LTD

VIVEK KUMAR
Batch: 2015-2018
Designation: Highway Engineer
Company Name: BRGIL LLP

ADITYA RANJAN
Batch: 2015-2018
Designation : Technical Supervisor
Company Name: BLOOM Companies, LLC(NHAI)

RAHUL RAJ
Batch: 2016-2019
Designation: Special Survey Amin
Company Name: Govt. of Bihar

PAPPU KUMAR
Batch: 2016-2019
Designation: Special Survey Amin
Company Name: Govt. of Bihar

NEHA KUMARI
Batch: 2016-2019
Designation: Special Survey Amin
Company Name: Govt. of Bihar

RAVI RANJAN KUMAR
Batch: 2017-2020
Designation: Technical Assistant
Company Name: GEMS Polytechnic College

AATHISH KUMAR
Batch: 2017-2020
Designation: Site Engineer
Company Name: JICA 3rd Party under L&T Construction

SHIVA NISHANT
Batch: 2017-2020
Designation: Special Survey Amin
Company Name: Govt. of Bihar

UPKAR CHANDRA
Batch: 2018-2021
Designation: Special Survey Amin
Company Name: Govt. of Bihar

SAKSHI SINGH
Batch: 2018-2021
Designation: Special Survey Amin
Company Name: Govt. of Bihar

ANJALI KUMARI
Batch: 2018-2021
Designation: Special Survey Amin
Company Name: Govt. of Bihar

HIMANSHU KUMAR
Batch: 2019-2022
Designation: Special Survey Amin
Company Name: Govt. of Bihar

ANISH KUMAR SINGH
Batch: 2019-2022
Designation: Special Survey Amin
Company Name: Govt. of Bihar

KANAK PRIYA
Batch: 2019-2022
Designation: Special Survey Amin
Company Name: Govt. of Bihar

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 Rathaur
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

Vikash 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- Piramal 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 KUMAR
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

GEMS POLYTECHNIC COLLEGE

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

NOTABLE ALUMNI

Daniel V. Richardson
2017-2020
Software Developer
Shloklabs, Coimbatore, TN

Priyanka Kumari
2017-2020
Lecturer
GEMS Polytechnic College

Ruby Kumari
2017-2020
Lecturer
GEMS Polytechnic College

Rishu John
2017-2020
Junior Software Developer
PIE Info Comm Pvt. Ltd.

James Marandi
2017-2020
CTC/Lab Assistant
GEMS Polytechnic College

Bishal Sonar
2017-2020
Office/Lab Assistant
GEMS Polytechnic College

Piyush Kumar
2017-2020
Junior Software Developer
PIE Info Comm Pvt. Ltd.

Anup Sahani
2018-2021
Trainer
GIFT - GEMS Institute of
Future Technology, Bihar

Manisha Kumari
2018-2021
Operator Engineer
Gabriel India Ltd. Gurgaon,
Haryana

Leiyapem Awungshi
2019-2022
Asst. Executive C.S.
Ienergizer-Noida

Prasanjeet Kumar
2019-2022
Software Engineer
DATAMATRIX, Ghaziabad,
UP

Vikash Uraon
2019-2022
Operator Engineer
Yazaki India Pvt. Ltd.

Aryaman Kumar
2019-2022
Software Developer
Cognigent

Ani Kumari
2019-2022
Software Developer
Cognigent

Pujya Shree
2019-2022
Operator Engineer
Joyson Anand Abhishek
Safety Systems Pvt. Ltd.

Jyoti Kumari
2019-2022
Operator Engineer
K P Reliable

GEMS POLYTECHNIC COLLEGE

DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

NOTABLE ALUMNI

Pratigya Verma
2015 - 2018
Business Analyst
Accenture

Geeta Kumari
2016 - 2019
Teacher
GEMS English School

Aman Kumar
2017 - 2020
Electrician
The Duncan Hospital

Golu Kumar
2018 - 2021
Junior Engineer
Suzlon Global Service

Prashun Bharti
2018 - 2021
Lab Assistant
GEMS Polytechnic College

Ritambhara Kumari
2019 - 2022
Diploma Trainees
Dhana Anand India Pvt.Ltd

Sanjeev Kumar
2019 - 2022
Operating Engineer Trainee
Mahle Anand Filter System Pvt.Ltd

Janki Kumari
2019 - 2022
Diploma Trainees
Dhana Anand India Pvt.Ltd

Shivam Kumar
2020 - 2023
Diploma Trainees
Layam Flexi Solutions Pvt.Ltd

Pradeep Kumar
2020 - 2023
Diploma Trainees
Mahle Anand Pvt.Ltd

Anurag Ranjan
2020 - 2023
Junior Engineer
Apollo Tyres Pvt. Ltd

Neeraj kushwaha
2020 - 2023
Operating Engineer
Mahel Anand Thermal System Pvt. Ltd

Anjali Kumari
2020 - 2023
Testing Quality Engineer
Apollo Tyres Pvt.Ltd

Nibha Kumari
2020 - 2023
Diploma Trainee
Dhana Anand India Pvt. Ltd

Priska Kumari
2020 - 2023
Diploma Trainee
Dhana Anand India Pvt. Ltd

Kiran Kumari
2020 -2023
Diploma Trainee
Dhana Anand India Pvt. Ltd

GEMS POLYTECHNIC COLLEGE

DEPARTMENT OF MECHANICAL ENGINEERING

NOTABLE ALUMNI

Raju Kumar
2015-2018
TECHNICIAN
Qatar Engg and Construction
Qatar

Mrityunjay Kumar
2015-2018
NDT INSPECTOR
Industrial X-ray and
Allied NDT Pvt Limited,Mumbai

Pratyush
2016-2019
Marine Engineer
Mediterranean Shipping
Company,Mumbai

Adil Raza
2016-2019
Quality Engineer
NAPCO National, UAE

Chandan Kumar
2016-2019
Final Quality inspector
Flash Viven Machining
Technology Pvt Ltd/
Pune Maharashtra

Seshnath
2016-2019
Quality Inspector
Bhawani industries Pvt Ltd,
Pune Maharashtra

Devnath
2016-2019
Final Quality Inspector
Yapp India automotive Pvt
Ltd/Pune Maharashtra

Deepak Kumar
2017-2020
Technical Instructor
GEMS ITI, Amra Talab
Sasaram Bihar.

RAVI RANJAN KUMAR
2017-2020
Machine Operator
GAIL India Ltd

Sumit Chauhan
2018-2021
Technician
Hero Corp Ltd, Pune

Afnan Ahmad
2019-2022
Trainer
Additive 3D, Bihar

Durgesh Nandan
2019-2022
Operator
INDIAN OIL
CORPORATION LTD, Patna

Md Amish
2020-2023
Technician
Inalfa Gabriel Roof
Systems Pvt Ltd, Chennai

Satyam Kumar
2020-2023
Operator
Saatvik Green Energy Pvt.
Limited, Hariyana

Manisha Kumari
2020-2023
Technician
DAIPL - Jodalli, Andra
Pradesh

Simran Kumari
2020-2023
Operator
MAHLE, Maharashtra

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.

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 OBJECTIVES (PSOs)

PSO 1: Provide a strong foundation in mathematical, science, electrical and electronics engineering to solve electrical and electronics problems.

PSO 2: Understand, analyze, simulate and design electrical machines, modern electrical drives, latest electronic systems, Embedded Systems, IOT and automation of systems and to determine their performance through testing.

PSO 3: Develop and implement electrical and electronics allied interdisciplinary projects to meet the demands of industry and to provide solutions for energy conservation and sustainability.

Part C

Declaration by the Institution

GEMS POLYTECHNIC COLLEGE

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

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 hall 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 : Ramgopal 19/04/2024

PRINCIPAL
GEMS Polytechnic College
Ratanpura, Aurangabad
Bihar-824121

Seal of the Institution : GEMS Polytechnic College Date 19/04/24 Ratanpura, Aurangabad, Bihar-824121

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Website: www.gemspolytechnic.edu.in E-mail: polytechnic@gemsbihar.org
07070066877, 7366889683, 7366889684

GEMS
POLYTECHNIC COLLEGE

Empowering to Excel

Contact:

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Department of Electrical and Electronics Engineering,
GEMS Polytechnic College,
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