



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 MECHANICAL 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

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Part A

Institutional Information

Institutional Information

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

7a. Accreditation History:

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

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

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

8. Total number of Employees:

A. Regular* Employees (Faculty and Staff):

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

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

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

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

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

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

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

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

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

Part B

Program Level Criteria

Criterion 1

Vision, Mission, Program Educational Objectives

1 Vision, Mission, Program Educational Objectives (50)

1.1 State the Vision and Mission of the Department and Institution (05)

Vision of the institute	Empowering the young minds with holistic education and futuristic skills to be a valuable resource for the State and Nation.
Mission of the institute	<ul style="list-style-type: none"> ● To provide professional education thereby producing technically competent engineers with moral and ethical values. ● To train students and provide them with leading resources to address problems faced by industry and society. ● To encourage doers to embrace learning and achieve their personal best in building their emotional, social and physical well-being.

Vision of the Department	To empower the students in the field of Mechanical engineering by providing quality education and technical skills favorable for the development of the State and Nation.	
Mission of the Department	Sl. No	Mission Statements
	M1	To deliver fundamental and skill-based education in mechanical engineering through innovative practices in teaching and learning.
	M2	To improve employability through Industrial interaction and collaboration.
	M3	To inculcate ethical practices for social upliftment and to uphold human values.

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

PEO No.	Program Educational Objectives Statements
PEO1	To develop technically competitive diploma engineers in the challenging areas of design and manufacturing and its associated industries in the domain of mechanical engineering.
PEO2	To motivate the diploma engineers to improve their academic careers by involving in higher education and continuous learning.
PEO3	To Possess a professional attitude as an individual and as a team member with consideration for society, professional ethics and environmental factors.

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

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

Publication Channels:

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

Dissemination Points:

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

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

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

Initial Input Gathering:

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

Stakeholder Involvement:

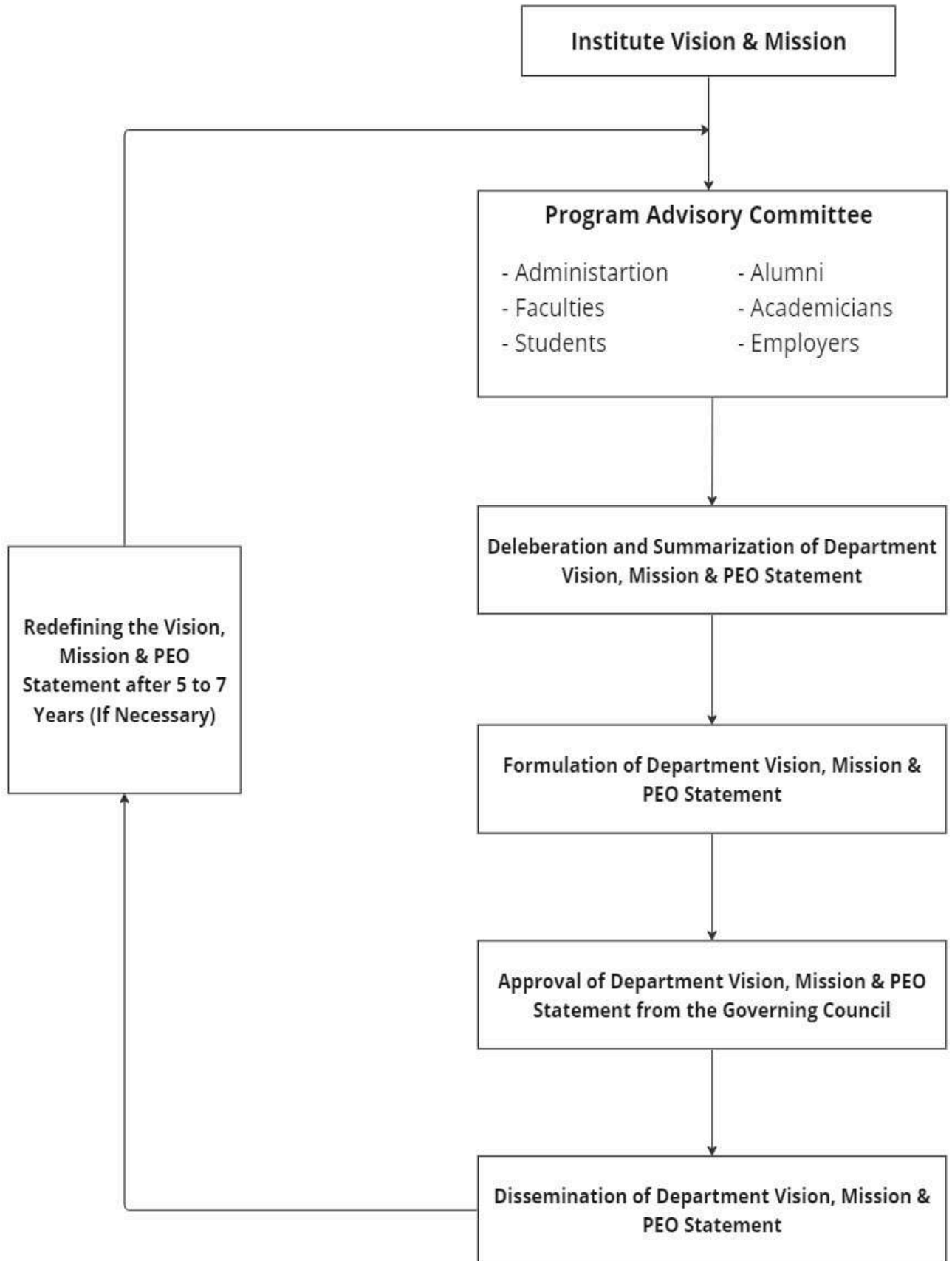
- Inputs are gathered from a range of stakeholders, both internal and external.
- This includes input from internal stakeholders such as management, faculty, and students, as well as external stakeholders like alumni, academicians, and employers.

Deliberation and Summarization:

- The next step involves careful deliberation and summarization of the departments vision, mission and 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.

Finalization, Approval and Dissemination:

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



1.5 Establish Consistency of PEOs with Mission of the Department (15)

PEO	M 1	M 2	M 3
PEO1:	<p>M1: 3- Substantial (High)</p> <p>Justification: The mission of delivering fundamental and skill-based education directly aligns with the program educational objective of developing technically competitive engineers, contributing significantly to their technical expertise.</p>	<p>M2: 2 -Moderate (Medium)</p> <p>Justification: The mission to improve employability through industrial interaction and collaboration moderately correlates with the objective of developing engineers with technical competitiveness, enhancing their readiness for the industry.</p>	<p>M3: 1 - Slight (Low)</p> <p>Justification: The mission of inculcating ethical practices for social upliftment and upholding human values has a slight correlation with the objective of technical development, as ethical practices contribute to the holistic development of engineers, albeit to a lower extent.</p>
PEO2:	<p>M1: 3 (Substantial)</p> <p>Justification: Empowering diploma engineers for higher education aligns with delivering fundamental and skill-based education</p>	<p>M2: 2 (Moderate)</p> <p>Justification: Motivating engineers for continuous learning moderately correlates with improving employability through industrial interaction.</p>	<p>M3: 3 (Substantial)</p> <p>Justification: Instilling ethical practices for social upliftment and upholding human values significantly aligns with motivating engineers for higher education.</p>
PEO3:	<p>M1: 3 (Substantial)</p> <p>Justification: The emphasis on fundamental and skill-based education aligns with the goal of possessing a professional attitude.</p>	<p>M2: 3 (Substantial)</p> <p>Justification: Enhancing employability through industrial interaction correlates substantially with cultivating a professional attitude.</p>	<p>M3: 3 (Substantial)</p> <p>Justification: Inculcating ethical practices for social upliftment aligns substantially with the aim of possessing a professional attitude.</p>

The mission of the Department - PEO Matrix:

PEO Statements	M 1	M 2	M 3
PEO1: To develop technically competitive diploma engineers in the challenging areas of design and manufacturing and its associated industries in the domain of mechanical engineering.	3	2	1
PEO2: To motivate the diploma engineers to improve their academic career by involving in doing higher education and continuous learning.	3	2	3
PEO3: To Possess a professional attitude as an individual and as a team member with consideration for society, professional ethics and environmental factors.	3	3	3

Correlations:

"1" - Slight (Low)

"2" - Moderate (Medium)

"3" - Substantial (High)

"-" -Indicates there is no relation

Criterion 2

Program Curriculum and Teaching-learning processes

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 in Annexure-I. Also mention the identified curricular gaps, if any.

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

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

Program Specific Outcome (PSOs):

The Program Specific Outcomes (PSOs) serve as a critical component of our curriculum development, shaped by the Department's Vision and Mission, Program Outcomes, Program Educational Outcomes (PEOs), and insights from Industry Representatives and Alumni.

Additionally, the PSOs are benchmarked against the outcomes and objectives of technical societies and other esteemed institutions.

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 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 (2001101)	3	21	14.69%	5	33	Y	Y	-	-	-	-	-	-	-	-
2		Mathematics-2 (2002201)	4			6		Y	Y	-	-	-	-	-	-	-	-
3		Applied Physics-I (2001102)	3			5		Y	Y	-	Y	-	-	Y	-	-	Y
4		Applied Chemistry (2001103)	3			5		Y	Y	-	-	Y	-	-	-	-	-
5		Applied Physics Lab-I (2001106)	2			2		Y	-	-	Y	-	-	Y	-	-	-
6		Applied Chemistry Lab (2001107)	2			2		Y	-	-	Y	-	-	-	-	-	-
7		Applied Physics-2 (2002202)	3			6		Y	Y	-	-	-	-	-	-	-	-
8		Applied Physics Lab-2 (2002206)	1			2		Y	Y	-	-	-	-	-	-	-	-
9	Engineering Sciences	Engineering Graphics (2001105)	2	17	11.89%	6	29	Y	Y	Y	-	Y	-	Y	Y	-	Y
10		Engg. Workshop Practice (2001109)	2			2		Y	-	-	Y	Y	-	Y	-	-	-
11		Engineering Mechanics (2002205)	3			5		Y	Y	Y	Y	Y	Y	Y	-	-	-

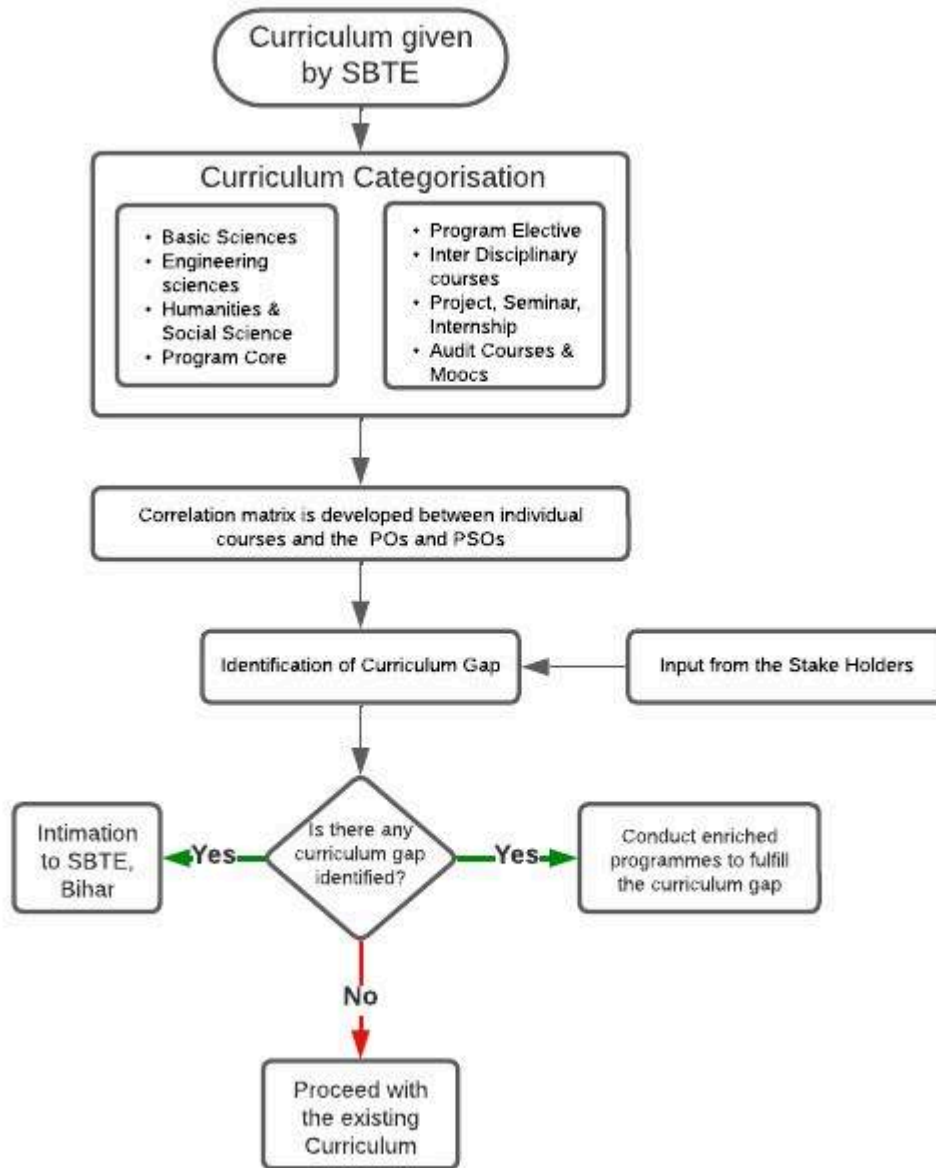
12		Engineering Mechanics Lab (2002209)	2			2		Y	Y	Y	Y	Y	Y	Y	-	-	-
13		Introduction to IT Systems (2002203)	2			5		Y	Y	-	-	-	-	-	Y	-	-
14		Introduction to IT Systems Lab (2002207)	2			2		Y	Y	-	-	-	-	-	Y	-	-
15		Fundamental of Electrical & Electronics Engineering (2002204)	3			5		Y	Y	-	-	-	-	Y	-	-	-
16		Fundamental of Electrical & Electronics Engg. Lab (2002208)	1			2		Y	-	-	Y	-	-	-	-	-	-
17	Humanities & Social Science	Communication Skills in English (2001104)	2	8	5.59%	3	7	Y	-	-	-	-	Y	Y	-	-	-
18		Communication Skills in English Lab (2001108)	2			2		-	-	-	-	-	Y	Y	-	-	-
19		Sports and Yoga (2001110)	2			1		-	-	-	-	-	-	Y	-	-	-
20		Entrepreneurship and Start-ups 2000601	2			1		-	-	-	-	Y	Y	Y	-	-	-
21	Program Core	Basic Mechanical Engineering (2025301)	3	63	44.06%	5	91	Y	Y	-	-	-	-	Y	-	-	Y
22		Material Science & Engineering (2025302)	3			5		Y	Y	Y	Y	Y	-	Y	-	-	-
23		Fluid Mechanics & Hydraulic Machinery (2025303)	3			5		Y	Y	Y	Y	Y	Y	Y	-	-	-
24		Manufacturing Engineering - I (2025304)	3			5		Y	-	Y	Y	Y	-	Y	-	-	-
25		Thermal Engineering - I (2025305)	3			2		Y	Y	Y	Y	Y	-	Y	-	-	Y

26	Manufacturing Engineering Lab-I (2025306)	1			2		Y	Y	Y	Y	-	-	Y	-	-	-
27	Fluid Mechanics & Hydraulic Machinery Lab (2025307)	1			2		Y	Y	Y	Y	Y	Y	Y	-	-	-
28	Thermal Engineering Lab-I (2025309)	1			2		Y	Y	-	Y	-	Y	Y	-	-	-
29	Measurements & Metrology (2025401)	3			5		Y	Y	Y	Y	Y	-	Y	Y	Y	Y
30	Strength of Materials (2025402)	3			2		Y	Y	Y	Y	Y	Y	Y	-	-	-
31	Thermal Engineering- II (2025403)	3			2		Y	Y	Y	-	Y	-	Y	-	-	Y
32	Theory of Machines & Mechanisms (2025404)	3			5		Y	Y	Y	-	-	-	Y	-	-	-
33	Tool Engineering (2025405)	3			5		Y	Y	Y	Y	Y	-	Y	Y	-	-
34	Measurements & Metrology Lab (2025406)	1			2		Y	Y	-	Y	-	-	Y	-	-	Y
35	Material Testing Lab (2025407)	2			2		Y	Y	Y	Y	-	Y	Y	-	-	-
36	Thermal Engineering Lab-II (2025408)	2			2		Y	Y	Y	Y	-	Y	Y	-	-	Y
37	Production & Operations Management (2025501)	3			5		Y	Y	-	-	-	Y	Y	Y	Y	Y
38	Computer Aided Design & Manufacturing (2025502)	3			5		Y	-	Y	Y	Y	Y	Y	Y	Y	Y
39	Automobile Engineering 2025503	3			6		Y	-	-	-	-	-	Y	-	-	-

40		Refrigeration & Air-conditioning (2025504A)	3			5		Y	Y	Y	Y	Y	Y	Y	-	-	-				
41		CAD/CAM Lab (2025506)	2			2		Y	Y	Y	Y	Y	-	Y	Y	Y	Y				
42		Refrigeration & Air-conditioning Lab 2025507A	1			2		Y	Y	Y	Y	Y	Y	Y	-	-	-				
43		Design of Machine Elements (2025602)	4			6		Y	Y	Y	-	-	Y	Y	Y	-	-				
44		Advanced Manufacturing Processes (2025603)	4			5		Y	Y	Y	Y	-	-	Y	-	Y	Y				
45		Advanced Manufacturing Processes Lab (2025608A)	2			2		Y	Y	Y	Y	-	-	Y	-	-	Y				
46	Project, Seminar, Internship	Minor Project 2025409	2	12	8.39%	2		Y	-	Y	Y	-	Y	Y	Y	Y	-	Y			
47		Major Project 2025510	1			4		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
48		Major Project 2025610	3			4		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
49		Seminar 2025609	2			1		-	-	-	-	Y	Y	Y	Y	Y	Y	Y	-	-	-
50		Summer Intern ship-I (4 weeks) 2025312	2			1		Y	-	-	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
51		Summer Internship-II (4 weeks) 2025509	2			1		Y	-	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
52	Program Elective	Farm Equipment & Farm Machinery (2025505B)	2	8	5.59%	5		Y	Y	Y	Y	-	-	Y	-	-	-				
53		Automobile Engineering Lab 2025508 A	3			2		Y	-	-	Y	-	-	Y	-	-	Y	-	-	-	
54		Energy Conservation & Audit (2025604A)	3			5		Y	Y	-	-	Y	-	Y	-	Y	-	-	-	Y	

55	Inter Disciplin ary courses	Web Technology Lab 2018308	1	2	1.40%	2	3	Y	Y	Y	Y	-	-	-	-	-	-
56		Python 2018311	1			1		Y	-	-	Y	-	-	-	-	-	-
57	Audit Courses & Moocs	Environmental Science(2002212)	0	12	8.39%	1	13	Y	Y	-	-	Y	-	Y	-	-	-
58		Essence of Indian Knowledge and Tradition(2025310)	2			1		-	-	-	-	-	-	Y	-	-	-
59		Indian Constitution (2000605A)	2			5		-	-	-	-	Y	-	Y	-	-	-
60		Course under MOOCS/SWAYAM/ETC/(2002210)	2			1		Y	-	-	-	-	-	Y	-	-	-
61		IT Essential Sem-1(2001111)	1			1		Y	-	-	Y	Y	-	Y	-	-	-
62		IT Essential Sem-2(2002211)	1			1		Y	-	-	-	Y	-	-	-	-	-
63		Course Under Moocs / Swayam / Others 2025410	2			1		Y	-	-	-	-	-	Y	-	-	-
64		Course Under Moocs /Swayam/ Others 2021511	1			1		Y	-	Y	-	-	-	Y	Y	-	Y
65		Course Under Moocs TW (2025611)	1			1		-	-	Y	-	-	-	Y	-	-	Y
TOTAL			143	143	100%	No. of Courses Mapped with POs & PSOs	58	40	31	36	29	22	53	15	9	21	

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



Curriculum with CO-PO/PSO Mapping:

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

Categorization:

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

Mapping Matrix:

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

Cumulative Evaluation:

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

Gap Identification:

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

Table: Compliance of SBTE curriculum with POs

S.NO	Program Outcomes	Number of courses Mapped with POs	Percentage
PO 1	Basic and Discipline specific Knowledge	58	89.23%
PO 2	Problem Analysis	40	61.54%
PO 3	Design / Development of solutions	31	47.69%
PO 4	Engineering Tools, Experimentation and Testing	36	55.38%
PO 5	Engineering Practices for society, Sustainability and Environment	29	44.62%
PO 6	Project Management	22	33.85%
PO 7	Life-Long Learning	53	81.54%
Average Percentage (%)			59.12%

Total No. of Courses: 65

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:

P03: Design / Development of solutions

P04: Engineering Tools, Experimentation and Testing

P05: Engineering Practices for society, Sustainability and Environment

P06: Project Management

Table: Compliance of SBTE curriculum with PSOs:

Total No. of Courses: 65

S.NO	Program Outcomes	Number of courses Mapped with PSOs	Percentage
PSO 1	Ability to develop and implement innovative ideas in the area of product development with the help of modern CAD & 3D printing tools.	15	23.08%
PSO 2	Ability to achieve excellence in the domain of Computer Numerical Control (CNC) operations.	9	13.85%
PSO 3	Ability to achieve excellence in advanced manufacturing skills for various industrial sectors.	21	32.31%
Average Percentage (%)			23.08%

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: Ability to achieve excellence in the domain of Computer Numerical Control (CNC) operations.

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:

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:

Sl.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**CAY 2023-2024****Mapping of content beyond syllabus with the POs & PSOs: 2023-2024**

Sl.No.	Gap	Action Taken	Date-Month-Year	Resource Person with Designation	Mode	No. of students present	Relevance to POs, PSOs
1	Career Guidance	Session on Problem Solving and Ideation Workshop	03-11-2023	Mrs.Sujaya Rao co-founder TEENR	online	21	POs-2,3,5,6
2	Career Guidance	Workshop on Entrepreneurship	20-12-2023	Mr.Vishal Nair Co-Founder Light salt Pvt Ltd	online	27	POs-2,3,5,6
3	Industry Readiness	Frist aid awareness program on welding	23-11-2023	Mrs.Roja Nirmala kumari Senior staff Nurse	offline	25	POs-5,7
4	Industry Readiness	Inroduction about Aerospace manufacturing	5-12-2023	Mr.Chandra Sekaran Operational Engineer Ministry of Defense Delhi	offline	92	POs-3,4,5,6,7 PSOs - 1,2,3
5.	Industry Readiness	CNC Programming	04-03-2024 to 21-03-2024	Mr. Christian, Technician Trainer Bezelel Pvt Ltd	Offline	43	POs-3,4,5,6 PSOs 2,3
6.	Industry Readiness	3D Printing	04-03-2024 to 21-03-2024	Mr. Mathiyas Technician Trainer Bezelel Pvt Ltd	Offline	32	POs-3,4,5,6 PSOs 1,3

2022-2023

Mapping of content beyond syllabus with the POs & PSOs: 2022-2023

S.No	Gap	Action Taken	Date-Month-Year	Resource Person with Designation	Mode	No. of students present	Relevance to POs, PSOs
1	Career Guidance	Career Guidance	08-09-2023	Mr, Sankar G Associate Manager - Employee Relations Apollo Tyres	Offline	23	POs-3,5,7 PSOs-3
2	Career Guidance	Career Guidance	04-09-2023	Mr. Pankaj Kumar Dubey, HR , KP Reliable Technique India Pvt Ltd	Offline	23	POs-3,5,7 PSOs-3
3	Industry Readiness	An overview of Thermal Power Plant	08-08-2023	Mr. Abhishek Kumar, Senior Engineer NTPC Nabinagar	Offline	90	POs-3,5,7 PSOs-3
4	Career Guidance	Career Guidance	01-08-2023	Mr. Nitish Prakash Surya, Youth Coach and Author, Engineers Academy, Patna	Offline	23	POs-3,5,7 PSOs-3
5	Emerging Technologies	Technical and Advance technology Paper presentation	28-06-2023	Mr. Anil Kolli, HoD ME Mrs. Pameela HoD EEE GEMS Ploytechnic college	Offline	90	POs-3,5,7 PSOs-3
6	Emerging Technologies	Metal Art	27-06-2023	Mrs. Catherine, Lecturer GEMS Polytechnic college	Offline	90	POs-3,5,7 PSOs-3
7	Emerging Technologies	Technical Quiz	27-06-2023	Mrs. Chinthiya Lecturer GEMS Ploytechnic college	Offline	90	POs-3,5,7 PSOs-3
8	Career Guidance	National Startup day	11-01-2023	Mr.Abraham Dennyson. B.tech,MBA, PGD-PHN Senior manager-Program analyst at Project Concern International.	Online	53	POs-3,5,7 PSOs-3
9	Emerging Technologies	Light Up	12-05-2023	Mrs. Catherine, Lecturer GEMS Ploytechnic college	Offline	90	POs-3,5,7 PSOs-3

10	Emerging Technologies	Lecture on Content beyond the Syllabus Total Quality Management	11-04-2023	Mr. Arun Pandian, Department of ME, GPC	Offline	33	POs-7 PSOs-3
11	Emerging Technologies	National Science Day - QUIZ competition, Poster presentation.	28-02-2023	Mr. Ragunath A. IIC president GEMS Polytechnic College	Offline	44	POs-3,5,7 PSOs-3
12	Emerging Technologies	Lecture on Content beyond the Syllabus "Homogeneous Charge Compression Ignition (HCCI) Engines"	17-02-2023	Mr. Titus.R, Senior Lecturer, Department of Mechanical Engineering, GPC.	Offline	30	POs-3,5,7 PSOs-3
13	Career Guidance	Leadership talk with AICTE Chairman	30-01-2023	Mr. Abhay Jere chief Innovation Officer, Ministry of Education. & Dr. T G Sitharam, AICTE chairman	Online	53	POs-3,5,7 PSOs-3
14	Industry Readiness	Industry Expectation from Students	30-01-2023	Mr. Vikash Kumar Singh, Customer Relation Manager, J.K. & Ravindra Automobiles, Aurangabad, Bihar.	Offline	53	POs-3,5,7 PSOs-3
15	Emerging Technologies	Lecture on Content beyond the Syllabus Leadership Basics and its Importance	17-01-2023	Mr. Vimal Raj, Department of ME, GPC	Offline	33	POs-7 PSOs-3
16	Industry Readiness	CNC Programming & Machining	14-09-2022	Mr. Jonathan Bodimer Poppelmann Germany	Offline	23	POs-3,5,7 PSOs-3
17	Emerging Technologies	Lecture on Content beyond the Syllabus Basic Steps in Boiler Design	20-05-2022	Mr. R. Titus, Department of ME, GPC	Offline	27	POs-3,4,5,7 PSOs-3
18	Emerging Technologies	Lecture on Content beyond the Syllabus Thick Cylinder Basics	18-05-2022	Mr. Eliyash Raj, Department of ME, GPC	Offline	27	POs-3,4,5,7 PSOs-3
19	Emerging Technologies	Lecture on Content beyond the Syllabus Homogeneous Charge Compression Ignition Engine	17-05-2022	Mr. Titus.R, Department of ME, GPC	Offline	30	POs-3,4,7 PSOs-3

20	Emerging Technologies	Lecture on Content beyond the Syllabus Nanocoating Its types and Benefits	15-05-2022	Mr. Johan Deva Raj, Department of ME, GPC	Offline	30	POs-3,6,7 PSOs-3
21	Emerging Technologies	Lecture on Content beyond the Syllabus Periodicity in Properties of elements	14-05-2022	Mr. Sujeet kumar Saksena, Department of ME	Offline	44	POs-1,7
22	Emerging Technologies	Lecture on Content beyond the Syllabus Explain the Newton's laws with example	12-05-2022	Mr. Anil Kolli, Department of ME	Offline	44	POs-2,5 PSOs-3
23	Emerging Technologies	Lecture on Content beyond the Syllabus Recent Industry trends in agricultural machine Adoption of Sustainable Mechanization	12-05-2022	Mr. Prabhunath Kuamr, Department of ME,GPC	Offline	23	POs-7 PSOs-3
24	Emerging Technologies	Lecture on Content beyond the Syllabus Friction Welding	11-05-2022	Mr. Prabhunath Kuamr, Department of ME,GPC	Offline	30	POs-4,5,7 PSOs-3
25	Emerging Technologies	Lecture on Content beyond the Syllabus Conversation Skill what they and why they're important	10-05-2022	Mrs. Jaslin Christy, Department of Science and Humanity, GPC	Offline	44	POs-1,7

2021-2022

Mapping of content beyond syllabus with the POs & PSOs: 2021-2022

S.No	Gap	Action Taken	Date-Month-Year	Resource Person with Designation	Mode	No. of students present	Relevance to POs, PSOs
1	Career Guidance	Career Guidance	30-08-2022	Dr. P. K. Rao, Training and Placement Expert, Department of Science and Technology, Patna, Bihar	Offline	23	POs-3,5,7 PSOs-3
2	Career Guidance	Industry Career Guidance	24-09-2022	Mr. Christian, Operation Engineer, Germany.	Offline	53	POs-3,5,7 PSOs-3
3	Emerging Technologies	CNC Programming & Machining	14-09-2022	Mr Jonathan Bodimer, Process Mechanic, Poppelmann, Germany.	Offline	23	POs-3,5,7 PSOs-3
4	Emerging Technologies	Status of E-Mobility in India	07-01-2022	Mr.Arun Pandian P, Senior Lecturer, Department of Mechanical Engineering, GPC.	Offline	30	POs-3,5,7 PSOs-3
5	Emerging Technologies	Introduction to mechanisms	27-01-2022	Mr.Arun Pandian P, Senior Lecturer, Department of Mechanical Engineering, GPC.	Offline	27	POs-3,5,7 PSOs-3
6	Emerging Technologies	Technical quiz	03-09-2022	ISTE	Offline	90	POs-3,5,7 PSOs-3
7	Emerging Technologies	Mechanical Engineering Design	01-10-2021	Mr.Alugula Manoj Babu, Design Engineer, A Smart Home Solution	Online	53	POs-3,5,7 PSOs-3

2.2 Teaching - Learning Process

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

A. Adherence to Academic Calendar

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

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

Semester Structure:

The academic calendar outlines the working days of the semester, providing a clear overview of the duration of the academic term.

This serves as a foundational framework for all academic and non-academic activities within the department.

Internal Test Schedule:

To gauge students' progress and ensure timely assessments, the calendar includes the schedule for internal tests.

This allows students and faculty members to adequately prepare and allocate their time for exam preparation and review.

Project Reviews:

For courses involving project work, the calendar specifies dates for project reviews.

This ensures students receive timely feedback on their projects and can make necessary improvements.

Industrial Visits:

Many of our programs emphasize practical learning and industry exposure.

The academic calendar incorporates planned industrial visits, providing students with opportunities to gain real-world insights into their fields of study.

Additional Activities:

Beyond regular classes and assessments, the academic calendar accommodates various other activities designed to enrich the learning experience.

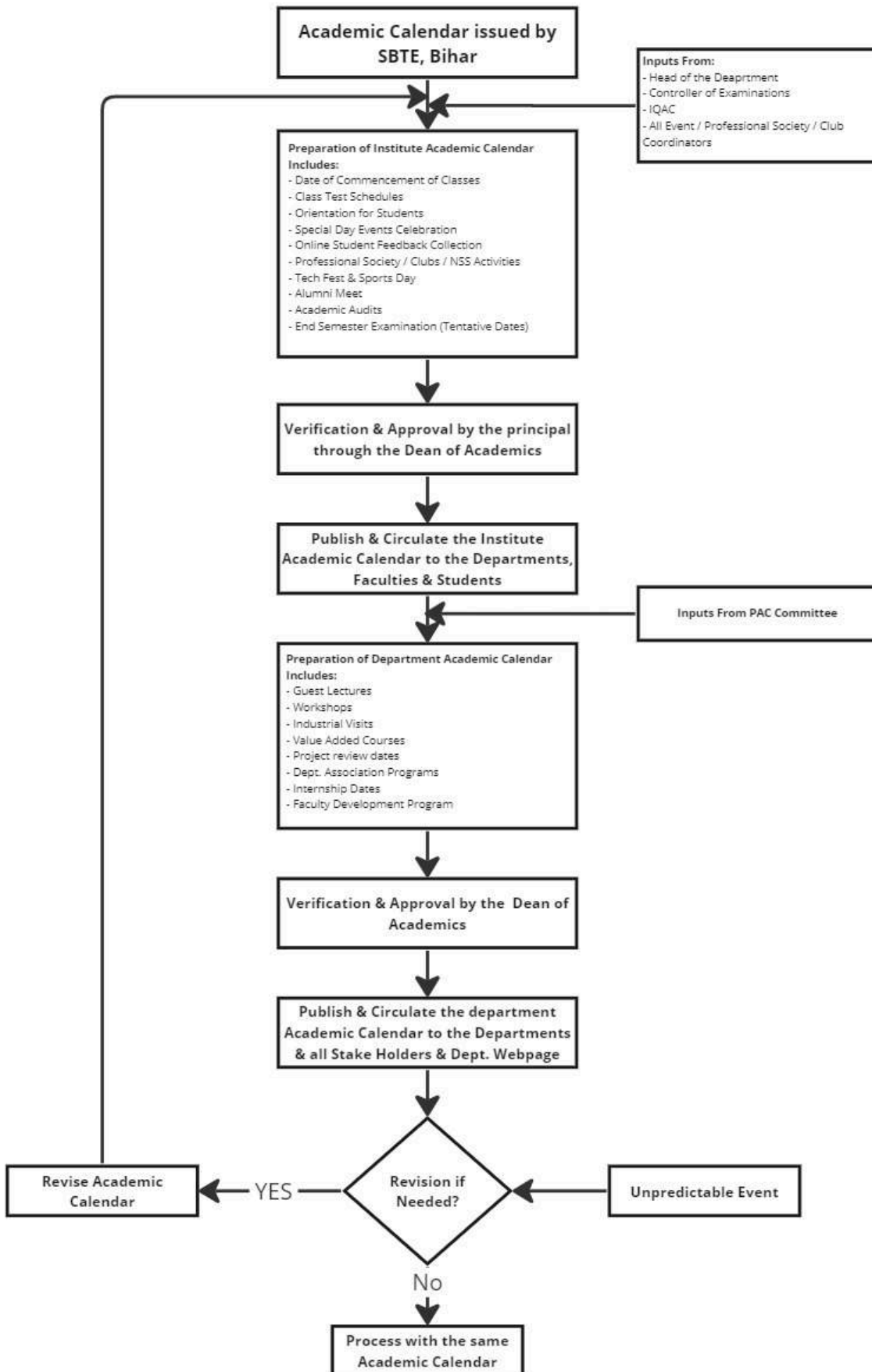
These include guest lectures by industry experts, seminars on emerging topics, workshops to enhance practical skills, and participation in professional society activities.

Communication:

The academic calendar is not a static document; it is a living guide that evolves as necessary.

It is disseminated among faculty members and students to ensure everyone is aware of the schedule and can plan their commitments accordingly.

Any updates or changes are communicated promptly to maintain transparency and adherence to the plan.



Adhering to the department's academic calendar is vital for creating a conducive learning environment where both faculty and students can maximize their potential. It fosters discipline, and time management, and ensures that all educational objectives are met systematically and organized. By following the calendar diligently, we aim to provide our students with a holistic and enriching educational experience while staying aligned with the institutions and SBTEs guidelines.

B. Use of various instructional planning and delivery methods

At our institute, 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:

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 an education that is not only comprehensive but also industry-relevant.

Tutorial Hours:

For courses demanding a deeper analytical perspective, we conduct tutorial hours.

These sessions provide students with the opportunity for in-depth discussions and a thorough understanding of course material.

Interactive Teaching:

While we embrace traditional lecture methods, we encourage active participation from students during lectures.

This engagement allows students to seek clarifications and engage in real-time discussions, fostering a deeper understanding of the subject matter.

ICT Based Learning:

Enhanced Information Delivery:

ICT-based learning plays a pivotal role in enriching the quality of education and teaching.

To this end, we leverage various ICT tools and platforms to enhance information delivery.

Tools and Platforms:

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

Seminars:

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

Collaborative Learning:

Interactive Learning:

Collaborative learning is a cornerstone of our approach, wherein groups of students collaborate to analyze and apply concepts interactively.

This fosters a deeper understanding and knowledge retention.

Involvement of Student Groups:

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

Value-Added Courses:

To further promote learning and skill development, we conduct value-added courses.

These courses provide students with opportunities for specialized training, often guided by industry experts.

Beginners/Freshers Connect Program:

Bridge Courses:

At the commencement of each academic year, we offer bridge courses for fundamental science subjects like mathematics, physics, chemistry, and engineering graphics.

These courses help incoming students recall and comprehend core theories, ensuring a strong foundation.

Faculty Orientation:

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

Bloom's Taxonomy:

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

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 student's 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.



GPC BYTES

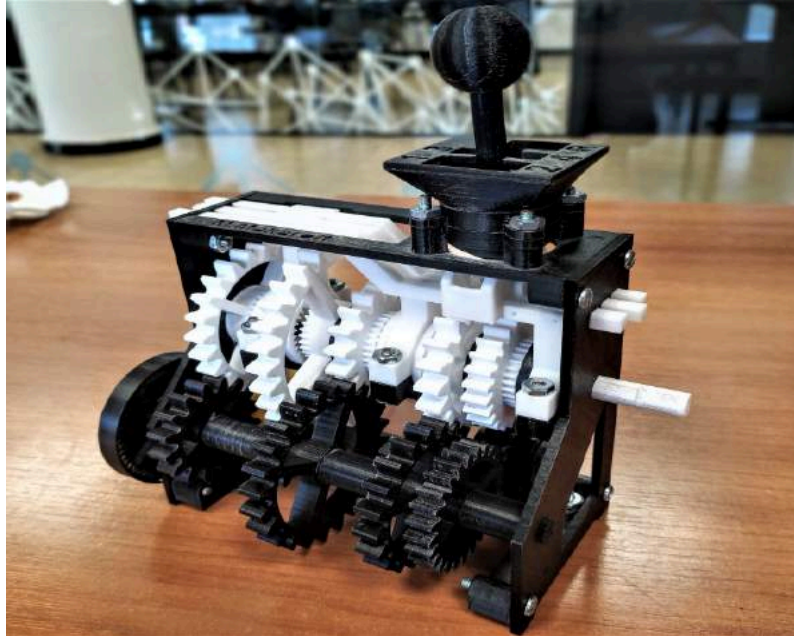
The Mechanical Department of GEMS Polytechnic College follows a fresh approach in teaching where they **assist students to create 3D models of mechanical equipments and use those 3D models as demo pieces to explain textbook concepts.**

Learning through these kind of practical sources instead of conventional theoretical ones, enable the students to create, touch and feel the equipments that they study about and it also benefits them with oodles of expertise.

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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

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.

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:**1. Remedial Classes:**

Conduct focused sessions.

Explain, give examples, and practice.

2. Retesting:

Offer retests in areas of struggle.

Ensure comfortable conditions.

3. Assignments:

Customize tasks for learning needs.

Encourage critical thinking.

4. Peer Group Support:

Pair with classmates excelling in subjects.

Peer mentors provide extra help.

Monitoring of Slow Learners:

1. Involve subject teachers:

- Update them on progress.

2. Use a monitoring format:

- Track attendance, participation, and improvement.
- Implement a mentorship program.
- Implement a mentorship program.

3. Assign mentors for guidance:

- Conduct progress meetings.

4. Involve parents:

- Regularly update them.
- Seek their input.

5. Encourage continuous feedback:

- Modify strategies as needed.

ADVANCED LEARNERS:**Identification of Advanced Learners:**

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

Motivating Participation in Technical Events:

- Keep them informed about upcoming events.
- Provide event selection guidance.

- Encourage group participation.
- Acknowledge achievements through awards.

Encouraging Online Certification Programs:

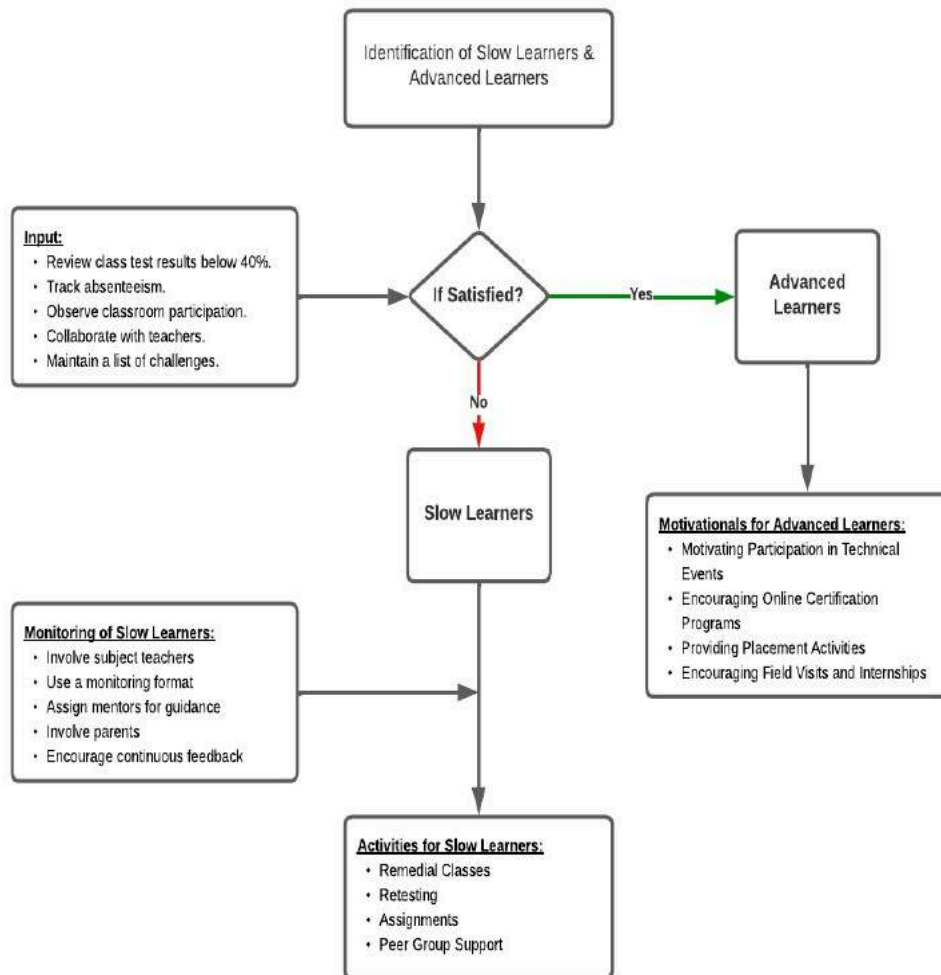
- Explore MOOC courses on platforms like NPTEL, SPOKEN TUTORIAL, CISCO, etc.
- Select courses aligning with your academic interests and career goals.
- Manage your time effectively to balance coursework and certification requirements.

Providing Placement Activities:

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

Encouraging Field Visits and Internships:

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



D. Quality of classroom teaching

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

Interactive Classroom Ambience:

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

Smart Board Integration:

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

Real-world Learning with Smart Boards:

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

Collaborative Problem Solving:

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

Administrative Observations:

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

Student Engagement:

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

Hands-on Learning:

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

Class Committee Meetings:

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

Feedback Collection:

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

E. Conduct of experiments:

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

Group Division and Lab Allocation:

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

Batch Formation:

- Each group is further divided into batches consisting of 3 to 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.

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

F. Continuous Assessment in the laboratory

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

Continuous Assessment Components:

Completion of the Experiment:

- Regular progress in conducting experiments.

Periodic Submission of Observation and Record:

- Timely submission of comprehensive observations and records.

Individual Experiment Evaluation:

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

Internal Assessment (A):

Individual Experiment Evaluation (out of 50 marks):

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

Model Examination:

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

Calculation of Internal Marks:

- Final internal marks were derived from consolidating experiment marks and model exam results, with a total of 100 marks.
- The total of 100 marks will be converted to the value of the internal marks specified in the SBTE-prescribed syllabus.

External Assessment (B):

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

Overall Laboratory Assessment:

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

G. Student feedback of teaching learning process and action taken

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

1. Purpose of Student Feedback:

Student feedback serves several critical purposes:

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

2. Feedback Collection Process:

a. Mid-Semester Feedback:

- Collected to proactively identify and address concerns early in the semester.
- Allows for prompt adjustments to enhance the teaching-learning experience.
- Provides insight into initial student experiences and perceptions.

b. End-of-Semester Feedback:

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

c. Student Feedback Questions:

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

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

Participation Rate:

- Measures the percentage of students participating in the feedback process.
- Formula: Participation Rate (%) = (Number of Students Participating / Total Number of Students 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 fall 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:

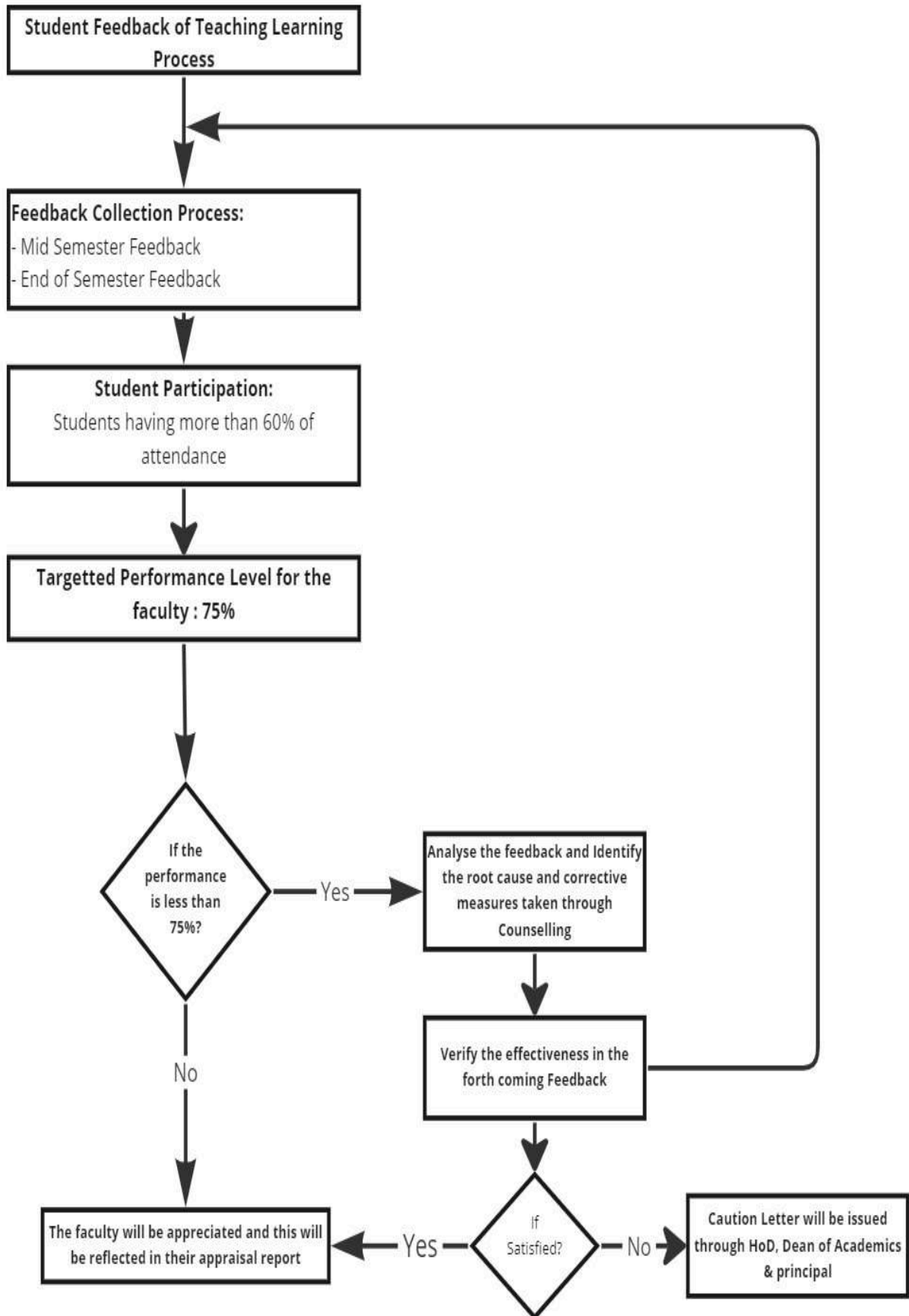
If performance remains unsatisfactory despite initial feedback, a caution letter is issued to the faculty member by the Principal through the Dean of Academics.

d. Monitoring and Evaluation:

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

4. Reporting and Communication:

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



2.2.2 Initiatives to improve the quality of semester tests and assignments

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

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

Exam Schedule Preparation:

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

Syllabus-Based Question Paper Formation:

- Question papers are meticulously designed to align with the syllabus coverage for each test:
- Class Test 1: Encompasses the initial 30% of the entire syllabus.
- Class Test 2: Covers the subsequent 35% of the entire syllabus.
- Class Test 3: Targets the remaining 35% of the entire syllabus.
- Model Exam: Encompasses 100% of the entire syllabus.

Question Paper Preparation:

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

Question Paper Format:

- Internal question papers adhere to the standards set by SBTE for end-semester question papers.
- Format for Class Test 1, 2 & 3:
- Part-A: 11 Questions x 1 Mark = 11 Marks
- Part-B: 3 Questions x 4 Marks = 12 Marks (Either/or Options)
- Part-C: 2 Questions x 6 Marks = 12 Marks (Either/or Options)
- Total: 35 Marks

Format for Model Exam:

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

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

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

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

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

Alignment with Course Outcomes (COs):

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

Inclusion of COs and Bloom Level:

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

Structured Evaluation:

- During the evaluation process, marks allocated for each question are entered question-wise on the answer 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.

Question Paper Format:

GEMS POLYTECHNIC COLLEGE
Mechanical Engineering [2022-23]
CLASS TEST 1

Subject : [2025503] Automobile Engineering 2025503 - Theory Faculty : Arun Pandian
Year : Third Year - Fifth Semester Marks : 35 Date : 24 January, 2023 Duration : 120 Minutes

Instructions for candidates
- Figures to the right indicate full marks.
- Draw neat diagram wherever necessary.
- Assume suitable data if necessary, stating it clearly.

Question	Marks	Course Outcome	Bloom's Level
SECTION - A Choose the most suitable Answer from the following options: (11 X 1 = 11)			
1. What is an IC Engine? a. the fuel is ignited and burned inside the engine b. the fuel is burned inside a combustion chamber c. the fuel is ignited inside a combustion chamber d. None of the above	1.00	CO 303.1	Apply
2. Connecting rod is attached to the piston by the _____ a. Rod cap b. Piston pin c. Cap ball d. Lower cap	1.00	CO 303.1	Apply
3. The plate which acts as a packing between cylinder block and cylinder head is _____ a. Chocket b. Liner c. Gasket d. Flange	1.00	CO 303.1	Apply
4. Piston pin is also known as _____ a. Outignon pin b. Crank pin c. Screw pin d. None of the mentioned	1.00	CO 303.1	Apply
5. Piston rings are not completely closed because _____ a. Closed rings are hard to manufacture b. Gap allows the ring to expand and fit over c. They are designed to let pass some lubricant to the combustion chamber d. None of the mentioned	1.00	CO 303.1	Apply
6. The purpose of a thermostat in an engine cooling system is to _____ a. Prevent the coolant from boiling b. Allow the engine to warm up quick c. Pressurize the system to raise the boiling point d. Indicate to the driver, the coolant temperature	1.00	CO 303.2	Understand

7. Water circulation in a radiator _____ place from _____ a. Lower tank to upper tank b. Upper to lower tank c. Engine to upper tank d. Engine to water pump	1.00	CO 303.2	Understand
8. In engine, the choke controls _____ a. Volume of fuel b. Heat of engine c. Volume of air into venturi d. Speed of engine	1.00	CO 303.2	Understand
9. _____ valve is provided to control the oil pressure of the lubricating oil. a. pressure relief b. control c. direction control d. flow control	1.00	CO 303.2	Understand
10. In a water-cooling system with a pump-circulation system, the following pump is used a. Centrifugal pump b. Reciprocating type c. Rotary vane pump d. All of the above	1.00	CO 303.2	Understand
11. The coolant to be employed in the liquid cooling system should have _____ a. low freezing temperature b. a high boiling point c. a large latent heat of vaporization d. all of the mentioned	1.00	CO 303.2	Understand

SECTION - B
Answer all the questions: (3 X 4 = 12)

12. a. Draw and explain Cylinder liners and the types of cylinder liners OR b. Draw and explain Piston rings and types of piston rings	4.00	CO 303.1	Apply
13. a. Draw and explain the working principle of Fuel filters OR b. Draw and explain the working principle of Fuel injectors	4.00	CO 303.2	Understand
14. a. Write the necessity of a lubrication system. OR b. Write the necessity of a cooling system	4.00	CO 303.2	Understand

SECTION - C
Answer all the questions: (2 X 6 = 12)

15. a. Draw and explain the working principle of Connecting rod OR b. Draw and explain the working principle of Engine valves	6.00	CO 303.1	Apply
16. a. Draw and explain the working principle of Air cooling system. OR b. Draw and explain the working principle of Multi-point fuel injection systems	6.00	CO 303.2	Understand

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H.O.D
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MECHANICAL DEPT
GEMS POLYTECHNIC COLLEGE
Ratanpura, Aurangabad

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

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

Mapping of Class Tests with Course Outcomes (COs):

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

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

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

Mapping of Assignments with Course Outcomes (COs):

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

Two Assignments with Clear Timelines:

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

CO-Based Mapping:

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

Emphasis on Skill Enhancement:

- Faculty members emphasize the significance of assignments in enhancing students technical competence, vocabulary, presentation skills, and writing proficiency.
- Assignments encompass various formats, including Class Mini Project Models, Posters, Subjective/Descriptive Questions and Answers, Multiple Choice Test Questions, Seminars/Presentations, and Reports on Industry Visits.

This approach not only facilitates comprehensive evaluation but also aids in reinforcing learning objectives and fostering skill development among our students.

2.2.3 Quality of Experiments

A. Experimental methodologies

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

A. Experimental Methodologies:

Expert Involvement:

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

-

Equipment Maintenance:

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

-

Logbook Maintenance:

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

Consumables Planning:

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

Maintenance Communication:

- Any repair or maintenance needs related to the laboratory are promptly communicated to the Principal, ensuring a safe and conducive learning environment for students.

B. Innovative experiments including industry attached practices, virtual labs

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 cataloged 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 fields.

C. Relevance to outcomes**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

A. Identification of projects and allocation methodology

- 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.

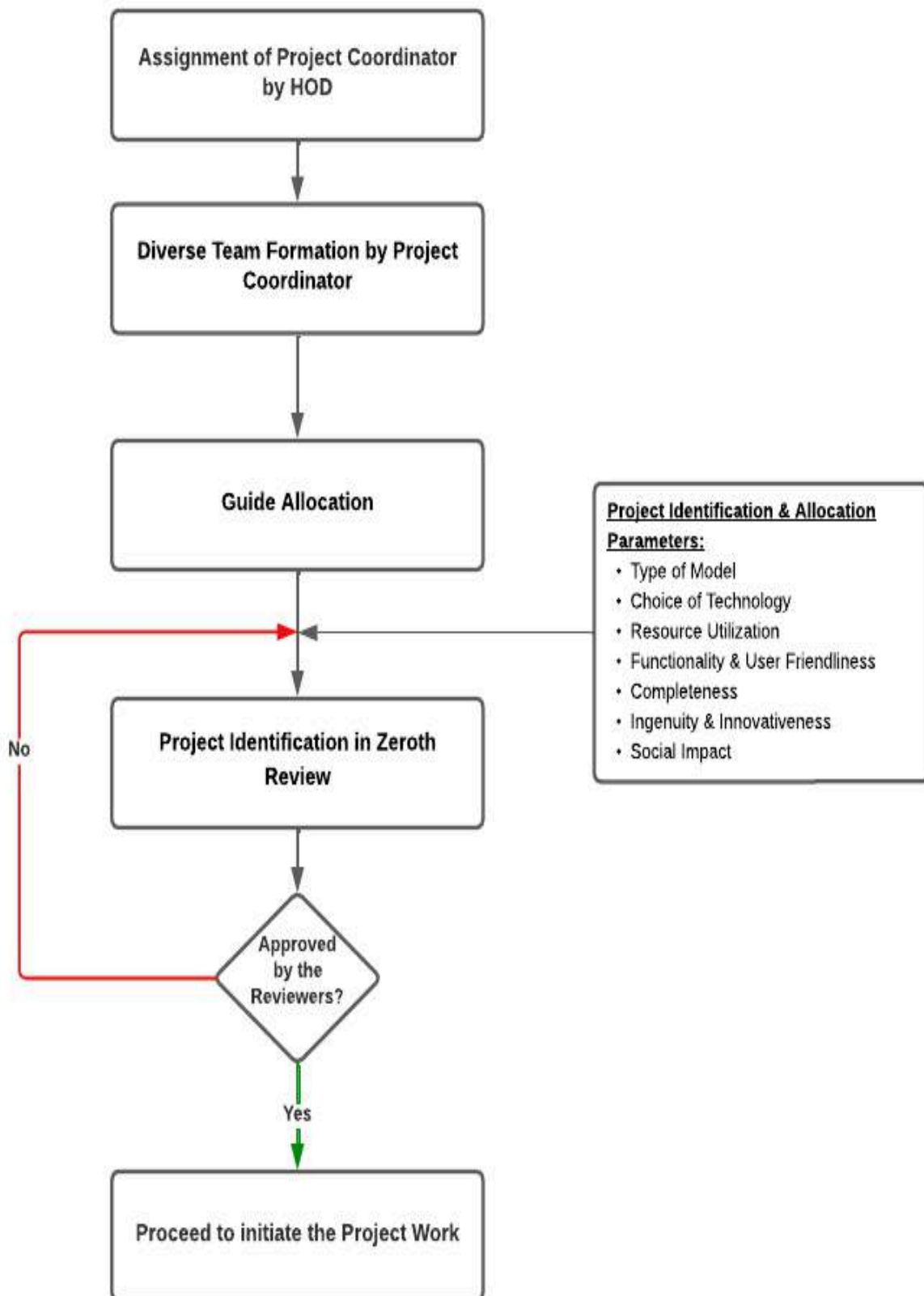
Presentation Standards:

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

Project Identification Parameters

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

1. **Type of Model:** Assessing the appropriateness and suitability of the chosen project model.
 2. **Choice of Technology:** Evaluating the selection of technology in line with project goals.
 3. **Resource Utilization:** Ensuring optimal use of available resources and materials.
 4. **Functionality & User Friendliness:** Evaluating the project's functionality and user-friendliness.
 5. **Aesthetic and Completeness:** Assessing the overall aesthetics and completeness of the project, including documentation.
 6. **Ingenuity & Innovativeness:** Recognizing creativity and innovation in project design.
 7. **Social Impact:** Analyzing the potential social impact of the project on the community or industry.
- Alignment of Project outcomes with any one of SDGs
 - 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

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

Domains in Mechanical Engineering with Relevant Projects:

1. Thermal Engineering
2. Mechanical Design and Analysis
3. Manufacturing and Production Engineering
4. Automotive Engineering
5. Robotics and Automation
6. Any other relevant Field

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

- Planning and execution as a team will involve project management, time, and resource allocation.

CO3: Apply appropriate knowledge of engineering to achieve the 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 Mechanical Engineering program.
- This ensures that students are not only acquiring technical expertise but also developing skills and competencies in line with the broader program objectives.
- Each project contributes to the program's mission of producing well-rounded and capable Mechanical 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.

SUSTAINABLE DEVELOPMENT GOALS

17 GOALS TO TRANSFORM OUR WORLD



Mapping of Projects to POs/PSOs for the Academic Year: 2022-2023:

Sl.No	Register Number	Name of the Student	Project Type	Project Title	Project Guide	Relevance of PO's / PSO's	Relevant SDGs
1	1992520021 1992520046 1992520007 1992520009 1992520025 1992520601	1. Shashi Ranjan 2. Md Amish 3. Boby Shankar Kumar 4. Hariom Kumar 5. Simran Kumari 6. Saurav Kumar	Society Oriented	Design and Fabrication of Sieving Machine	Mr. Eli Yashraj Singh	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PSO3	SDG-9, SDG-12
2	1992520012 1992520044 1992520039 1992520027 1992520032 1992520013	1. Manish Ranjan 2. Rahul Gupta 3. Maheshwar Kumar 4. Vikash Kumar Pandit 5. Vivek Kumar 6. Manisha Kumari	Society Oriented	Design and Fabrication of Portable Electric Tiller Machine for Agriculture	Mr. Arun Pandian	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PSO3	SDG-9, SDG-12
3	1992520003 1992520001 1992520037 1992520043 1992520002 1992520030	1. Satyam Kumar 2. Anurag Kumar 3. Shivshankar Singh 4. Bhanu Pratap Singh 5. Aditya Kumar 6. Gautam Kumar	Society Oriented	Design and Fabrication of Seed Sowing Machine	Mr. Johan Deva Raja M	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PSO3	SDG-9, SDG-12

4	1992520035 1992520038 1992520019 1992520006 1992520029	1. Vikash Kumar 2. Amit Kumar Sharma 3. Roshan Kumar 4. Amarjeet Kumar 5. Atul Kumar	Program Applications	Design and Fabrication of Floor Cleaning machine	Mr.Vimal Raj	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PSO3	SDG-6, SDG-9
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Mapping of Projects to POs/PSOs for the Academic Year: 2021-2022:

Sl.No	Register Number	Name of the Student	Project Type	Project Title	Project Guide	Relevance of PO's / PSO's	Relevant SDGs
1	1992519017 1992519010 1992519034 1992519035 1992519014	1. Vishal Ranjan 2. Aman Kumar 3. Sudhakar Kumar 4. Saugandh Kumar 5. Sachin Kumar	Program Applications	Design & fabrication of Mini Hacksaw using Engine Beam Mechanism	Mr.Eli Yashraj Singh	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PSO3	SDG-9, SDG-12
2	1992519001 1992519020 1992519026 1992519028	1. Rakesh Tiwary 2. Aman Kumar 3. Chitranjan Kumar Yadav 4. Ramesh Kumar	Society Oriented	Design & fabrication of Paddy Dryer Machine	Mr.Nitish Chandra	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PSO3	SDG-9, SDG-12
3	1992519036 1992519021 1992519029 1992519030 1992519031	1. Akash Kumar 2. Ranjan Kumar 3. Ravi Singh 4. Amarjeet Raj 5. Sachin Kumar Gupta	Society Oriented	Design & fabrication of Multilayer Sand Filtration Unit	Mr.Titus.R	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PSO3	SDG-9, SDG-12
4	1992519027 1992519013 1992519025 1992518011 1992519008	1. Afnan Ahmad 2. Chandan Kumar 3. Bittu Kumar 4. Ravi Ranjan 5. Ranjan Singh	Program Applications	Design & fabrication of Horizontal Axis Wind Turbine	Mr. Arun Pandian	PO1, PO2, PO3, PO4, PO5,	SDG-7, SDG-9, SDG-11

						PO6, PO7, PSO3	
5	1992518008 1992518018 1992518004 1992519032 1992519011	1. Priyanshu Kumar 2. Omprakash Kumar 3. Ranjeet Kumar 4. Golu Kumar Manjhi 5. Chandan Pratap Singh	Program Applications	Design & fabrication of Manual Floor cleaning Machine	Mr. Sudhir Kumar	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PSO3	SDG-6, SDG-9
6	1992519018 1992519006 1992519009 1992519003	1. Tinkal Singh 2. Rituraj Kumar Verma 3. Satyaprakash Kumar 4. Sidharth Kumar Vishwakarma	Society Oriented	Design & fabrication of Spray Machine for Agriculture Application	Mr. Titus	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PSO3	SDG-9,S D-G12
7	1992519002 1992519015 1992519012 1992518012 1992519033	1. Sameer Sagar 2. Rajneesh Kumar 3. Durgesh Nandan 4. Santhosh Kumar Nanda 5. Vishal Kumar	Program Applications	Design & fabrication of V8 Solenoid Engine	Mr. Vimal raj	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PSO3	SDG-9,S DG-12

Mapping of Projects to POs/PSOs for the Academic Year: 2020-2021:

Sl.No	Register Number	Name of the Student	Project Type	Project Title	Project Guide	Relevance of PO's / PSO's	Relevant SDGs
1	1992518016 1992518601 1992518013	1. Kumar Gautam 2. Piyush kumar 3. Pankaj Kumar	Society Oriented	Design and Fabrication of Semi-Automatic Sand Filter Machine	Mr. Eli Yashraj Singh	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PSO3	SDG-9,S DG-12
2	1992518009 1992518015 1992518014	1. Rajnish Kumar 2. Sumit	Program Applications	Design and Fabrication of Manual Lawn	1. Mr. B. Vimal Raj	PO1, PO2, PO3, PO4, PO5, PO6,	SDG-9,S DG-12

		Chauhan 3. Tushar Kapoor		Mover	2. Mr.Sudhir Kumar	PO7, PSO3	
3	1992518019 1992518010 1992518002 1992518001	1. Ayush Raj 2. Sagar 3. Safi Ahmad 4. Shresth kumar	Program Applications	Design and fabrication of Hybrid vertical Axis wind turbine and Solar Panel for highway Application	1. Mr.Titus.R 2. Mr.Arun Pandian	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PSO3	SDG7, SDG-9,S DG11

In conclusion, projects in Mechanical 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 Mechanical Engineers.

C. Process for monitoring and evaluation

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:

a. Review Schedule Establishment:

- As per the Academic Calendar 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.

b. Project Work Timetable:

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

c. 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.

d. 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.

e. 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.

f. 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:

a. 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.

b. Assessment Criteria:

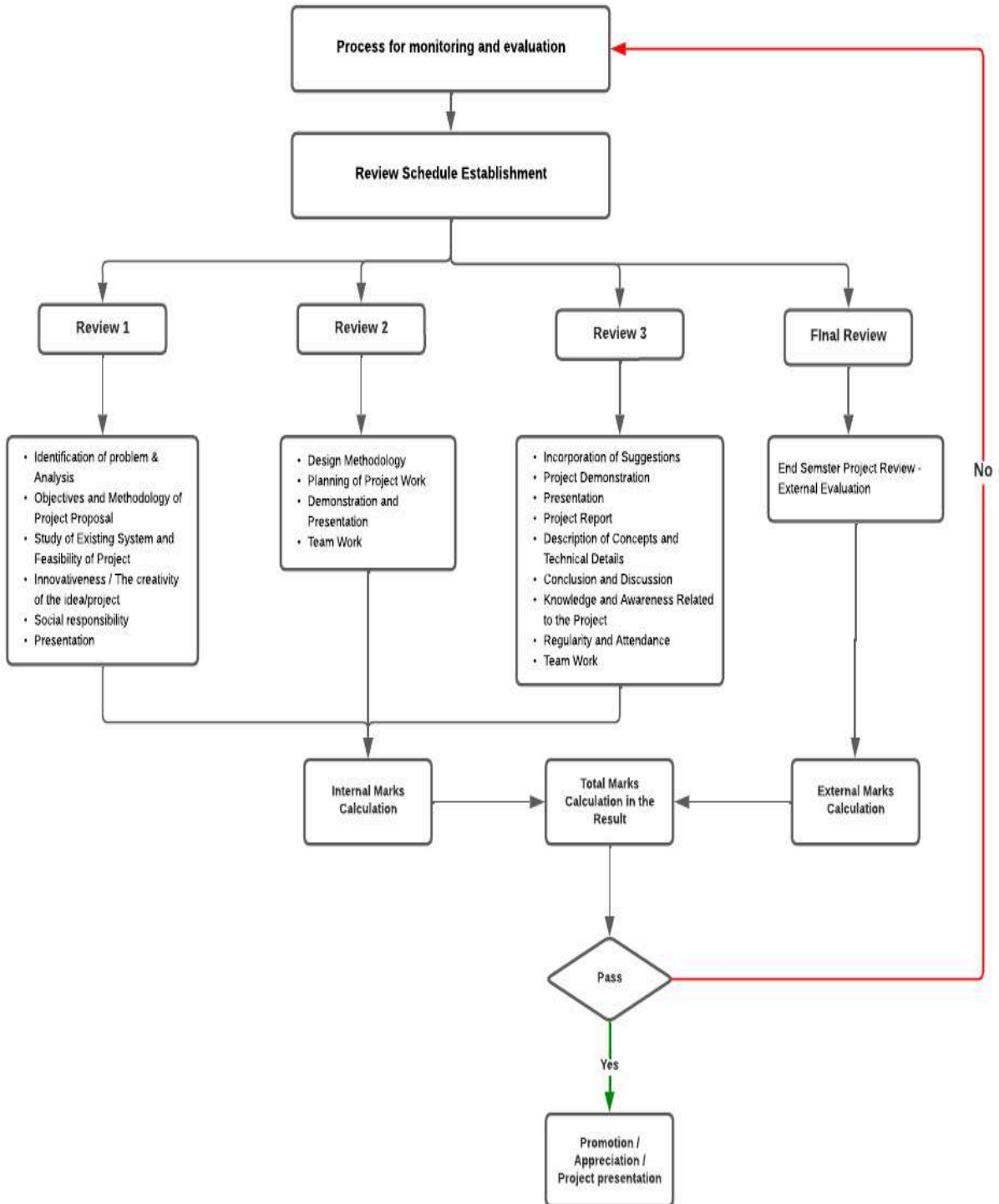
- Students are assessed based on the presentation and the progression of their work.
- Several rubrics are used to evaluate different aspects of the project at various stages.

c. Evaluation of Reviews:

Review #	Review Agenda	Rubrics parameter	Review Assessment Max.Marks
Review 1	Project Synopsis /Proposal Evaluation	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Design Methodology • Planning of Project Work • Demonstration and Presentation • Team Work 	20 Marks

Review 3	End Semester Internal Project Evaluation	<ul style="list-style-type: none"> ● Incorporation of Suggestions ● Project Demonstration ● Presentation 	15 Marks
	Project Report Evaluation	<ul style="list-style-type: none"> ● Project Report ● Description of Concepts and Technical Details ● Conclusion and Discussion 	15 Marks
	Evaluation by Guide	<ul style="list-style-type: none"> ● 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

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

Three Internal Reviews:

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

Final External SBTE Examinations (Viva Voce):

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

The total marks evaluated for each student's project are the sum of the internal and external marks, amounting to a total of 100 marks.

This thorough assessment process ensures that students' individual and team performances are consistently monitored, helping them grow and achieve academic excellence.

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

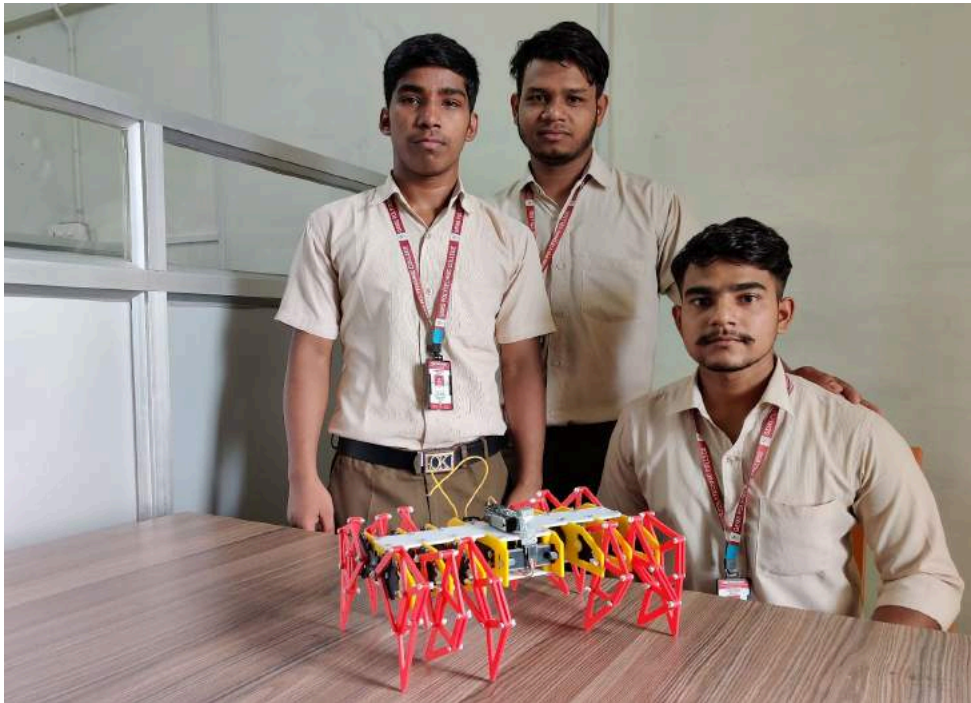
Category	Marks
Internal Evaluation	30
External Evaluation	70
Total Marks	100

E. Quality of deliverable, working prototypes

- 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.

WORKING TYPE PROJECTS:

S.No	Name of the First Authors	Name of the Co-Authors(Students)	Title of the Article	Academic Year
1	Mr. Arun Pandian, Mr. Anil Kolli	1. Manish Ranjan 2. Rahul Gupta 3. Maheshwar Kumar 4. Vikash Kumar Pandit 5. Vivek Kumar 6. Manisha Kumari	Innovative Approach to the Design and Fabrication of a Portable Electric Tiller Machine for Agricultural Applications	2022-2023
2	Mr. Johan Deva Raja M, Mr. Ravi Kumar Saksena	1. Satyam Kumar 2. Anurag Kumar 3. Shivshankar Singh 4. Bhanu Pratap Singh 5. Aditya Kumar 6. Gautam Kumar	Engineering Insights into the Design and Fabrication of a Seed Sowing Machine: An Experimental Study	2022-2023
3	Mr. Vimal Raj, Mr. Prabhunath	1. Vikash Kumar 2. Amit Kumar Sharma 3. Roshan Kumar 4. Amarjeet Kumar 5. Atul Kumar	Scientific Analysis of the Design and Fabrication of a Floor Cleaning Machine: Experimental Basis for Technical Journals	2022-2023
4	Mr. Nitish Chandra, Mr. Ravi Kumar Saksena	1. Rakesh Tiwary 2. Aman Kumar 3. Chitranjan Kumar Yadav 4. Ramesh Kumar	Advancements in the Design and Fabrication of a Paddy Dryer Machine: Experimental Findings	2021-2022
5	Mr. Titus. R, Mr. Sudhir Kumar	1. Akash Kumar 2. Ranjan Kumar 3. Ravi Singh 4. Amarjeet Raj 5. Sachin Kumar Gupta	Comprehensive Study on the Design and Fabrication of a Multilayer Sand Filtration Unit for Technical Journal Publication	2021-2022
6	Mr. B. Vimal Raj Mr. Sudhir Kumar	1. Rajnish Kumar 2. Sumit Chauhan 3. Tushar Kapoor	Design and Fabrication of rover using Theo Jansen Mechanism	2020-2021



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

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

National-Level Project Competitions:

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

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





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.

BCST-SPP LIST OF STUDENT PROJECT PROPOSALS SUBMITTED FOR 2021-2022:

S.No	Project Title	Student Members	Project Guide(s)
1	Design & fabrication of Mini Abrasive Vertical Belt Grinding Machine	1. Vishal Ranjan 2. Sidharth Kumar Vishwakarma 3. Sudhakar Kumar 4. Azam Hussain	Mr.Eli Yashraj Singh
2	Design & fabrication of Paddy Dryer Machine	1. Rakesh Tiwary 2. Aman Kumar 3. Chitranjan Kumar Yadav 4. Ramesh Kumar	Mr.Nitish Chandra
3	Design & fabrication of Electric Hybrid Vehicle	1. Akash Kumar 2. Ranjan Kumar 3. Ravi Singh 4. Amarjeet Raj	Mr.Titus.R
4	Design & fabrication of V8 Solenoid Engine	1. Sameer Sagar 2. Rajneesh Kumar 3. Durgesh Nandan 4. Santhosh Kumar Nanda	Mr.Vimal raj

BCST-SPP LIST OF STUDENT PROJECT PROPOSALS SUBMITTED FOR 2020-2021:

S.No	Project Title	Student Members	Project Guide(s)
1	DESIGN AND FABRICATION OF COMBINED SAVANIOUS WIND TURBINE SOLAR PHOTOVOLTAIC PANEL	1. KANHAIYA KUMAR PATEL 2. DEEPAK KUMAR 3. HIMANSHU KUMAR 4. ASHISH KUMAR	Mr. TITUS.R

PAPER PUBLICATION OF PROJECT WORKS:

S.No	Name of the First Authors	Name of the Co-Authors (Students)	Title of the Article	Academic Year	Journal Publication Details
1	Mr. Arun Pandian, Mr. Anil Kolli	1. Manish Ranjan 2. Rahul Gupta 3. Maheshwar Kumar 4. Vikash Kumar Pandit 5. Vivek Kumar 6. Manisha Kumari	Innovative Approach to the Design and Fabrication of a Portable Electric Tiller Machine For Agricultural Applications	2022-2023	INTERNATIONAL JOURNAL OF COMMUNICATION SYSTEM & NETWORK TECHNOLOGIES, VOL UME 11, ISSUE 2, ISSN : 2053-6283
2	Mr. Johan Deva Raja M, Mr. Ravi Kumar Saksena	1. Satyam Kumar 2. Anurag Kumar 3. Shivshankar Singh 4. Bhanu Pratap Singh 5. Aditya Kumar 6. Gautam Kumar	Engineering Insights into the Design and Fabrication of a Seed Sowing Machine: An Experimental Study	2022-2023	INTERNATIONAL JOURNAL OF COMMUNICATION SYSTEM & NETWORK TECHNOLOGIES, VOL UME 11, ISSUE 2, ISSN : 2053-6283
3	Mr. Vimal Raj, Mr. Prabhunath	1. Vikash Kumar 2. Amit Kumar Sharma 3. Roshan Kumar 4. Amarjeet Kumar 5. Atul Kumar	Scientific Analysis of the Design and Fabrication of a Floor Cleaning Machine: Experimental Basis for Technical Journals	2022-2023	INTERNATIONAL JOURNAL OF COMMUNICATION SYSTEM & NETWORK TECHNOLOGIES, VOL UME 10, ISSUE 2, ISSN : 2053-6283

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

2.2.5 Industry Interaction and Industry Internship/Training

A. Industry-supported Labs

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

Memorandum of Understanding (MoU) with Companies:

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

List of MOUs

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

3D Printing Lab:

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



Automobile Lab:



B. Delivery of appropriate Course work 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:

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



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.

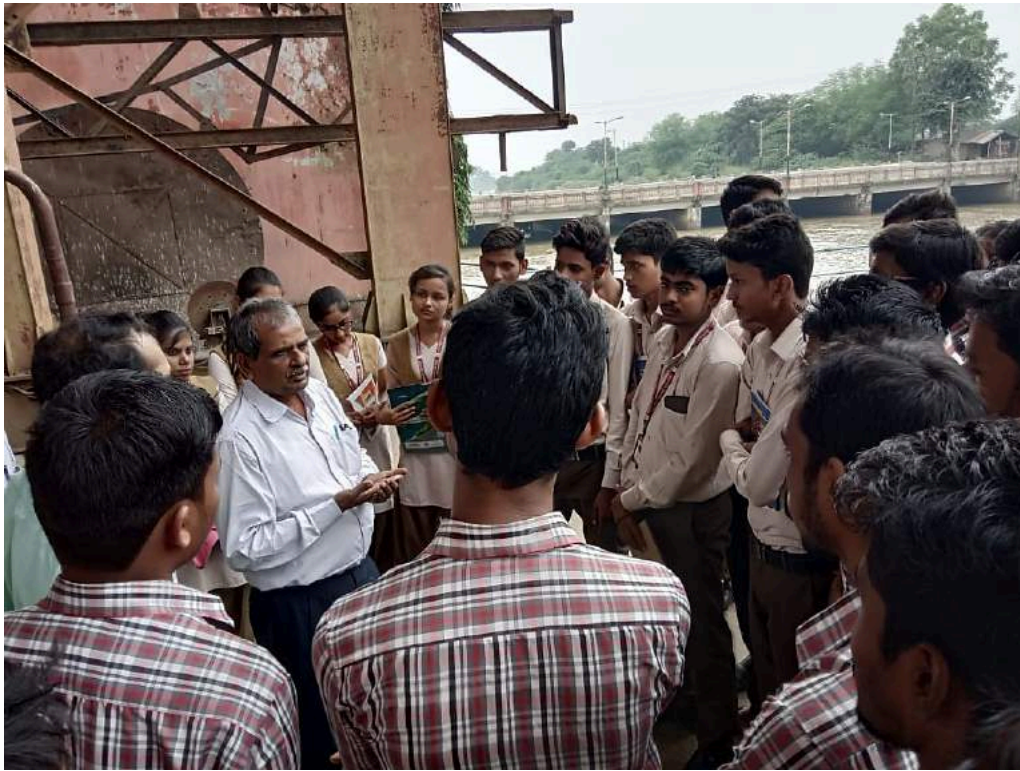
Academic Year-wise Visits:

A comprehensive list of industry visits is organized on an annual basis.

Sl.No.	Academic Year	Semester	Batch/Session	Industry Name & Location	No.of Students	Relevance to POs&PSOs
1	2023-2024	5th	2021-2024	Voltas Service Center(RAC Repairing Workshop), Dehri onSone	24	PO(1,2,5,6,7) PSO3
2	2022-2023	5th	2020-2023	J K Ravindra Motors Pvt Ltd	23	PO(1,2,5,6,7) & PSO3
3	2022-2023	4th	2020-2023	SONE WESTERN LINK CANAL H.E. PROJECT(BHPC), DEHRI ON SONE	10	PO(1,2,5,6,7) & PSO3
4	2021-2022	5th	2018-2021	SONE WESTERN LINK CANAL H.E. PROJECT(BHPC), DEHRI ON SONE	10	PO(1,2,5,6,7) & PSO3
5	2021-2022	4th	2019-2022	SONE WESTERN LINK CANAL H.E. PROJECT(BHPC), DEHRI ON SONE	27	PO(1,2,5,6,7) & PSO3
6	2020-202	6th	2017-2022	Voltas Service Center(RAC Repairing Workshop), Dehri onSone	15	PO(1,2,5,6,7) & 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.

Sl.No	Academic Year	Company Name/Location	No. of Students Attended	No.of Days
1	2023-24	JK Ravindra Automobiles/Aurangabad	3	30
2	2023-24	Maa Ambe Automobiles/Aurangabad	15	30
3	2023-24	KRN Automobiles	17	30
4	2023-24	Auto Engineering/Chandigarh	1	30
5	2023-24	Ananya Auto Agency Pvt. Ltd	8	30
6	2023-24	Rk Ravindra Automobile	6	30
7	2023-24	Rs Motors	5	30
8	2023-24	bhagwan bhaskar Tractos	1	30
9	2023-24	bhim enterprises	1	30
10	2023-24	KRN Automobiles	2	30
11	2023-24	Maa Rara Chandi Motors	1	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:

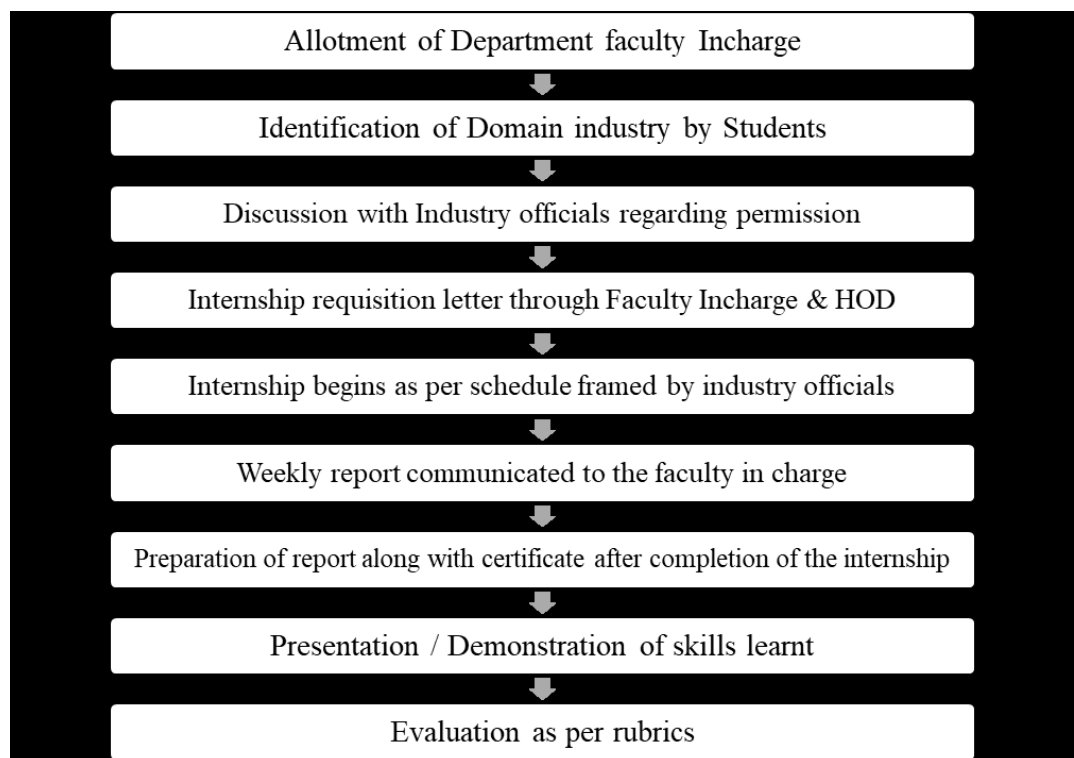
Students are required to submit their in-plant training reports and certificates from the respective companies.

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 Mechanical 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.

Empowering Education Through 3D Printing Outreach:

Our dedicated faculty members recently conducted engaging 3D printing demonstrations for nearby government schools, introducing innovative concepts and technologies to foster a hands-on learning experience for students in the community.



2.2.6 Information Access Facilities and Student Centric Learning Initiatives

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

In today's dynamic educational landscape, access to information and the implementation of student-centric learning initiatives are paramount. Here, we explore the facilities available for 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, SPOKED tutorial, IIT Bombay, and Cisco.
- Through these platforms, students receive comprehensive training, evaluations, and certifications, expanding their skill set and knowledge base.

Empowering Self-Learning Through 3D Printing:

- In our cutting-edge 3D printing lab, we empower students to create educational demo kits for Engineering Graphics, Automobile Engineering, and Design subjects.

- This hands-on approach fosters self-learning, enabling students to design and print these kits independently.

B. Student Centric Learning Initiatives & Effective Implementation

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

A. Employability skill enhancement Initiatives and effective implementation

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

Institution's Innovation Council (IIC):

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

Career Guidance & Higher Education Cell:

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

Training & Placement Cell:

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

Para Academic Department:

- Our Para Academic Department complements the academic curriculum by offering skill-focused courses and workshops.

- These courses are designed to enhance practical skills, making students job-ready upon graduation.

B. Personality development related Initiatives & effective implementation

We understand that academic excellence is just one aspect of a student's holistic development. Personality development is equally important.

To foster well-rounded individuals, we have initiated several personality development programs:

Communication Skills Workshops:

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

Leadership and Team Building:

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

Cultural and Artistic Pursuits:

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

Mindfulness and Stress Management:

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

Ethics and Values Education:

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

Industry Interaction:

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

Mentorship Programs:

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

In conclusion, GEMS Polytechnic College is committed to preparing students not only for academic success but also for a successful and fulfilling professional life. Our initiatives in employability skill enhancement and personality development reflect

our dedication to nurturing well-rounded individuals who are ready to excel in their chosen careers and contribute positively to society.

2.2.8 Co-curricular & Extra Curricular Activities

At GEMS Polytechnic College, we believe in nurturing well-rounded individuals, and our commitment to this holistic development is reflected in the diverse co-curricular and 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.
- 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.

NSS (National Service Scheme):

The NSS unit at GEMS Polytechnic College actively engages in community service and social responsibility. Each academic year, NSS student and faculty volunteers participate in a range of 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.

भारत सरकार
 युवा कल्याण एवं खेल मंत्रालय
 राष्ट्रीय सेवा योजना, क्षेत्रीय निदेशकालय
 C विंग, 7th फ्लोर,
 कार्पोरी थ्रैकर सदन, सीजी कॉम्प्लेक्स
 आशियान - डिग्हा रोड, पाटना - 800 025
 फोन : 0612-2952934
 ई-मेल : nssrpatna@gmail.com
 patna-nss@nic.in



Government of India
 Ministry of Youth Affairs & Sports
 Regional Directorate of NSS
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 patna-nss@nic.in

F.No. 52/ NSSRD/PAT/2021/ 33,99 - 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,

(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 Bhawan, 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

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*)

Course Name: C105

Course Year: 2022-2023

Course Outcomes	Statements
CO 105.1	Apply the fundamental knowledge of engineering graphics and demonstrate effectively.
CO 105.2	Construct multi-view orthographic projections of objects by visualizing them in different positions
CO 105.3	Construct pictorial drawings using the principles of isometric and perspective projections to visualize objects in three dimensions.
CO 105.4	Show freehand sketching to aid in the visualization process and to efficiently communicate ideas graphically
CO 105.5	Make use of basic AUTOCAD commands tools for how to draw modify and edit basic shapes(2D)

Course Name: C116

Course Year: 2022-2023

Course Outcomes	Statements
CO116.1	Identify the force systems for given conditions by applying the basics of mechanics.
CO116.2	Determine unknown force(s) of different engineering systems.
CO116.3	Explain the principles of friction in various conditions for useful purposes.
CO116.4	Find the centroid and Centre of gravity of various components in engineering systems.
CO116.5	Select the relevant simple lifting machine(s) for given purposes.

Course Name: C203

Course Year: 2022-2023

Course Outcomes	Statements
CO203.1	Calculate various properties such as pressure, velocity, flow rate using various instruments.
CO203.2	Explain types of fluid flow & Losses in pipes.
CO203.3	Understand the Impact of jets on Fixed & Moving Plates.
CO203.4	Explain types of Turbines & Hydraulic Power Plant.
CO203.5	Explain Construction and Working of Cetrifugal pump & Reciprocating pump.

Course Name: C215

Course Year: 2022-2023

Course Outcomes	Statements
CO215.1	Explain the working cycle of gas turbines, and the working of Jet and Rocket Engines apart from identifying the fuels used for Jet and Rocket propulsion.
CO215.2	Compute the work done, enthalpy, internal energy and entropy of steam at given conditions using steam tables and Mollier chart.
CO215.3	Distinguish between water tube and fire-tube boilers and explain the function all the mountings and accessories
CO215.4	Calculate the Velocity of steam at the exit of the nozzle in terms of heat drop analytically and by using the Mollier chart.
CO215.5	State the necessity of governing and compounding of a turbine.
CO215.6	Explain the principle of working of a steam turbine and distinguish between the impulse turbines and reaction turbines.

Course Name: C302**Course Year: 2022-2023**

Course Outcomes	Statements
CO 302.1	Explain the Fundamentals of CAD/CAM
CO 302.2	Explain the geometric modelling, surface modelling and solid modelling.
CO 302.3	Explain CNC programs for manufacture industrial components.
CO 302.4	Describe Group technology and computer aided process planning
CO 302.5	Explain Flexible manufacturing system and describe automated inspection

Course Name: C314**Course Year: 2022-2023**

Course Outcomes	Statements
CO314.1	Know the Operation and control of different advanced machine tools and equipments.
CO314.2	Produce jobs as per specified requirements by selecting the specific machining process
CO314.3	Develop the mind set for modern trends in manufacturing and automation.
CO314.4	Identify the different fabrication methods viz., sheet forming, blow moulding, laminating and reinforcing of plastics
CO314.5	Know different non-traditional machining processes, CNC milling machines, special purpose machines

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)

Course Name: C105

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PS01	PS02	PS03
CO 105.1	3	1	1	-	-	-	1	1	-	2
CO 105.2	3	-	3	-	-	-	1	1	-	2
CO 105.3	3	-	3	-	-	-	1	1	-	2
CO 105.4	3	-	2	-	-	-	1	1	-	2
CO 105.5	3	-	3	-	2	-	1	3	-	2

Course Name: C116

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PS01	PS02	PS03
CO116.1	3	1	1	-	-	-	2	-	-	-
CO116.2	3	1	1	-	-	-	2	-	-	-
CO116.3	3	2	1	2	1	1	2	-	-	-
CO116.4	3	2	2	2	2	1	3	-	-	-
CO116.5	3	2	3	2	2	2	3	-	-	-

Course Name: C203

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PS01	PS02	PS03
CO203.1	3	-	1	2	2	-	3	-	-	-
CO203.2	3	-	1	1	2	1	2	-	-	-
CO203.3	3	-	3	-	-	-	1	-	-	-
CO203.4	2	1	2	1	2	2	2	-	-	-
CO203.5	3	1	1	2	1	1	2	-	-	-

Course Name: C215

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PS01	PS02	PS03
CO215.1	3	-	-	-	-	-	1	-	-	1
CO215.2	3	3	2	-	-	-	1	-	-	1
CO215.3	3	-	-	-	-	-	1	-	-	1
CO215.4	3	3	2	-	-	-	1	-	-	1
CO215.5	3	-	-	-	1	-	1	-	-	1
CO215.6	3	-	-	-	-	-	1	-	-	1

Course Name: C302

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
CO 302.1	2	-	-	-	1	-	1	3	1	3
CO 302.2	2	1	1	2	1	-	1	3	1	3
CO 302.3	2	1	1	2	1	-	1	3	3	3
CO 302.4	2	1	-	-	1	2	1	3	3	3
CO 302.5	2	1	1	2	1	2	1	3	3	2

Course Name: C314

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
C0314.1	3	-	-	2	-	-	1	-	2	3
C0314.2	3	-	2	3	-	-	2	-	2	3
C0314.3	3	-	2	3	-	-	1	-	3	2
C0314.4	3	-	-	1	-	-	1	-	-	2
C0314.5	3	2	-	-	-	-	-	-	3	2

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

Course Index	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PS01	PS02	PS03
C101	3	1	-	-	-	-	-	-	-	-
C102	2.83	1.33	-	1.33	-	-	1	-	-	1
C103	2.2	1.6	-	-	1.5	-	-	-	-	-
C104	1.75	-	-	-	-	1	1	-	-	-
C105	3	1	2.4	-	2	-	1	1.4	-	2
C106	3	-	-	2.8	-	-	1	-	-	-
C107	3	-	-	1.8	-	-	-	-	-	-
C108	-	-	-	-	-	1	1	-	-	-
C109	3	-	-	2.25	2	-	2.33	-	-	3
C110	-	-	-	-	-	-	2	-	-	-
C111	3	-	-	1	1	-	1	-	-	-
C112	3	1.4	-	-	-	-	-	-	-	-
C113	3	1	-	-	-	-	-	-	-	-
C114	2	1	-	-	-	-	-	1	-	-
C115	3	1.33	-	-	-	-	1	-	-	-
C116	3	1.6	1.6	2	1.67	1.33	2.4	-	-	-
C117	3	2	-	-	-	-	-	-	-	-
C118	2	1	-	-	-	-	-	1	-	-
C119	2	-	-	1.17	-	-	-	-	-	-
C120	3	2	1	1	1	1	1	-	-	-

C121	1.25	-	-	-	-	-	3	-	-	-
C122	3	-	-	-	1	-	-	-	-	-
C123	3	2	-	-	1	-	2	-	-	-
C201	3	2	-	-	-	-	1	-	-	1
C202	3	1.5	1	2.5	3	-	1	-	-	-
C203	2.8	1	1.6	1.5	1.75	1.33	2	-	-	-
C204	2.6	-	1.4	1.4	1.67	-	2	-	-	-
C205	3	2	2	1	1	-	1	-	-	1
C206	2	2	2.2	2	-	-	1.2	-	-	-
C207	3	1.4	1.6	1.8	1.8	2.2	2.6	-	-	-
C208	2	1	1.67	2	-	-	-	-	-	-
C209	3	1	-	2.6	-	1.17	1.67	-	-	-
C210	-	-	-	-	-	-	3	-	-	-
C211	3	-	-	1	-	-	-	-	-	-
C212	2.25	-	-	2	1.5	1	1	1	2	1.5
C213	3	1	1	1.6	2	-	1	1	1	1
C214	1.8	2	1.4	1	1	1	1	-	-	-
C215	3	3	2	-	1	-	1	-	-	1
C216	3	1.8	1	-	-	-	2.8	-	-	-
C217	2	1	1	1	2	-	1	2	-	-
C218	3	1	-	2.67	-	-	1	-	-	1
C219	1	1.3	1	1.8	-	2	1	-	-	-
C220	3	1.25	1.25	2	-	1	2	-	-	2

C221	3	-	2.6	1.6	-	2.8	2.6	3	-	3
C222	1.25	-	-	-	-	-	3	-	-	-
C301	3	1	-	-	-	1.4	1	1	1	1
C302	2	-	1	2	1	2	1	1.33	2	1.4
C303	3	-	-	-	-	-	3	-	-	-
C304	2.8	1.25	2	2.2	2.2	1	2.2	-	-	-
C305	2	2	2	1	-	-	1.2	-	-	-
C306	2	1.25	3	2	1	-	1	2.8	1.75	1
C307	3	1	2	2	3	2.75	3	-	-	-
C308	3	-	-	2	-	-	2.2	-	-	-
C309	3	-	1	2	1	1	3	1	1	2
C310	2	2.25	2	1.5	2.25	2.5	3	1.75	1.25	3
C311	3	-	2.25	-	-	-	1.75	2.75	-	2.75
C312	-	-	-	-	1	3	2	-	-	-
C313	3	1.8	1.8	-	-	1	1	1	-	-
C314	3	2	2	2.25	-	-	1.25	-	2.5	2.4
C315	3	1	-	-	2	-	2	-	-	2
C316	-	-	-	-	2	-	3	-	-	-
C317	2.5	2	2	2.25	-	-	2	-	-	2.25
C318	-	-	-	-	2	3	3	-	-	-
C319	2	2.25	2	1.5	2.25	2.5	3	1.75	1.25	3
C320	3	-	3	-	-	-	2.5	-	-	1.5
Average	2.63	1.51	1.73	1.76	1.64	1.68	1.79	1.59	1.53	1.81

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:

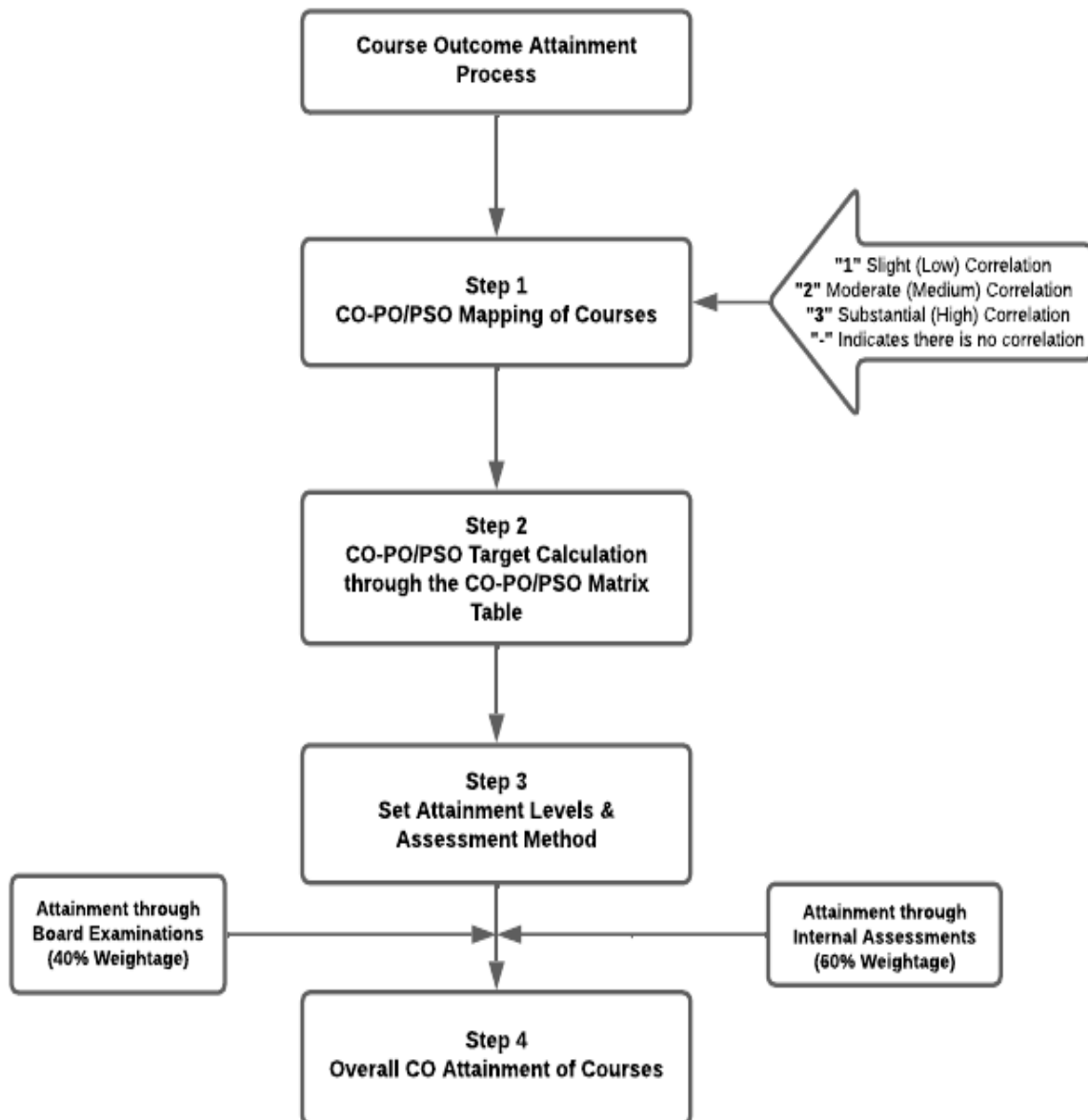
Course-End Survey:

- 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

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:	<ul style="list-style-type: none"> • 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:	<ul style="list-style-type: none"> • 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:	<ul style="list-style-type: none"> • 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:	<ul style="list-style-type: none"> • 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:	<ul style="list-style-type: none"> • 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:	<ul style="list-style-type: none"> • If 60% or more students score more than the set target average percentage in the final examination, the attainment level is considered to be: 3 • This reflects an excellent level of achievement of course outcomes.

Step 4: CO Attainment of Courses:**Overall Course Outcome Attainment:**

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

Direct COs Attainment Assessments:**Internal Examination Assessment (Weightage: 60%)**

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

Board Examination Assessment (Weightage: 40%)

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

Direct COs Attainment Assessments:

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

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

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

Course Code	Course Name	Attainment through Internal Assessment	Attainment through Board Examination	Overall CO Attainment
C101	Mathematics - I	1.20	1.80	3.00
C102	Applied Physics - I	0.77	1.20	1.97
C103	Applied Chemistry - I	1.36	1.20	2.56
C104	Communication Skills in English	1.20	1.20	2.40
C105	Engineering Graphics	1.80	1.20	3.00
C106	Applied Physics Lab - I	1.80	1.20	3.00
C107	Applied Chemistry Lab	1.80	1.20	3.00
C108	Communication Skills in English Lab	1.80	1.20	3.00
C109	Engg. Workshop Practice	1.80	1.20	3.00
C110	Sports & Yoga	1.80	1.20	3.00
C111	KYP/IT Essential/ Python/ Others	1.80	1.20	3.00
C112	Mathematics - II	0.52	1.80	2.32
C113	Applied Physics - II	1.30	1.20	2.50
C114	Introduction to IT Systems	1.28	1.20	2.48
C115	Fundamental of Electrical & Electronics. Engg	1.19	1.20	2.39
C116	Engineering Mechanics	1.73	1.20	2.93
C117	Applied Physics - II Lab	1.80	1.20	3.00
C118	Introduction to IT Systems Lab	1.80	1.20	3.00
C119	Fundamental of Electrical & Electronics. Engg Lab	1.80	1.20	3.00

C120	Engineering Mechanics Lab	1.80	1.20	3.00
C121	MOOCS	1.80	1.20	3.00
C122	IT Essential	1.80	1.20	3.00
C123	Environmental Science	1.80	1.20	3.00
C201	Basic Mechanical Engineering	1.80	1.20	3.00
C202	Material Science & Engineering	1.23	1.20	2.43
C203	Fluid Mechanics & Hydraulic Machinery	1.73	1.20	2.93
C204	Manufacturing Engineering- I	1.00	1.20	2.20
C205	Thermal Engineering - I	1.48	1.20	2.68
C206	Manufacturing Engineering Lab	1.80	1.20	3.00
C207	Fluid Mechanics & Hydraulic Machinery Lab	1.80	1.20	3.00
C208	Web Technology Lab	1.80	1.20	3.00
C209	Thermal Engineering Lab-I	1.80	1.20	3.00
C210	The essence of Indian Knowledge and Tradition	1.80	1.20	3.00
C211	Python	1.80	1.20	3.00
C212	Summer Internship-I (4 weeks)	1.80	1.20	3.00
C213	Measurements & Metrology	1.80	1.20	3.00
C214	Strength of Materials	1.06	1.20	2.26
C215	Thermal Engineering- II	1.26	1.20	2.46
C216	Theory of Machines & Mechanisms	1.70	1.20	2.90
C217	Tool Engineering	1.30	1.20	2.50
C218	Measurements & Metrology Lab	1.80	1.20	3.00
C219	Material Testing Lab	1.80	1.20	3.00

C220	Thermal Engineering Lab-II	1.80	1.20	3.00
C221	Minor Project	1.80	1.20	3.00
C222	Course Under Moocs / Swayam / Others	1.80	1.20	3.00
C301	Production & Operations Management	1.80	1.20	3.00
C302	Computer-Aided Design & Manufacturing	1.80	1.20	3.00
C303	Automobile Engineering	1.80	1.20	3.00
C304	Refrigeration & Air-conditioning	1.78	1.20	2.98
C305	Farm Equipment & Farm Machinery	1.80	1.20	3.00
C306	CAD/CAM Lab	1.80	1.20	3.00
C307	Refrigeration & Air-conditioning Lab	1.80	1.20	3.00
C308	Automobile Engineering Lab	1.80	1.20	3.00
C309	Summer Intern- ship-II (4 weeks)	1.80	1.20	3.00
C310	Major Project	1.80	1.20	3.00
C311	Course Under Moocs /Swayam/ Others	1.80	1.20	3.00
C312	Entrepreneurship and Start-ups	1.75	1.20	2.95
C313	Design of Machine Elements	1.75	1.20	2.95
C314	Advanced Manufacturing Processes	1.80	1.20	3.00
C315	Energy Conservation & Audit)	1.76	1.20	2.96
C316	Indian Constitution	1.49	1.20	2.69
C317	Advanced Manufacturing Processes Lab	1.80	1.20	3.00
C318	Seminar	1.80	1.20	3.00
C319	Major Project	1.80	1.20	3.00
C320	Course Under Moocs TW	1.80	1.20	3.00

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.
- Class Tests carry different weightage, with Class Test I covering 30% of the syllabus and its associated COs, Class Test II covering 35%, Class Test III covering 35%, and the Model Exam addressing CO1 to CO5.
- Assessment of students performance in these examinations is conducted by the course faculty in charge.

Board Examination Assessment:

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

Assignment:

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

Seminar:

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

Laboratory Experiments:

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

Student Projects:

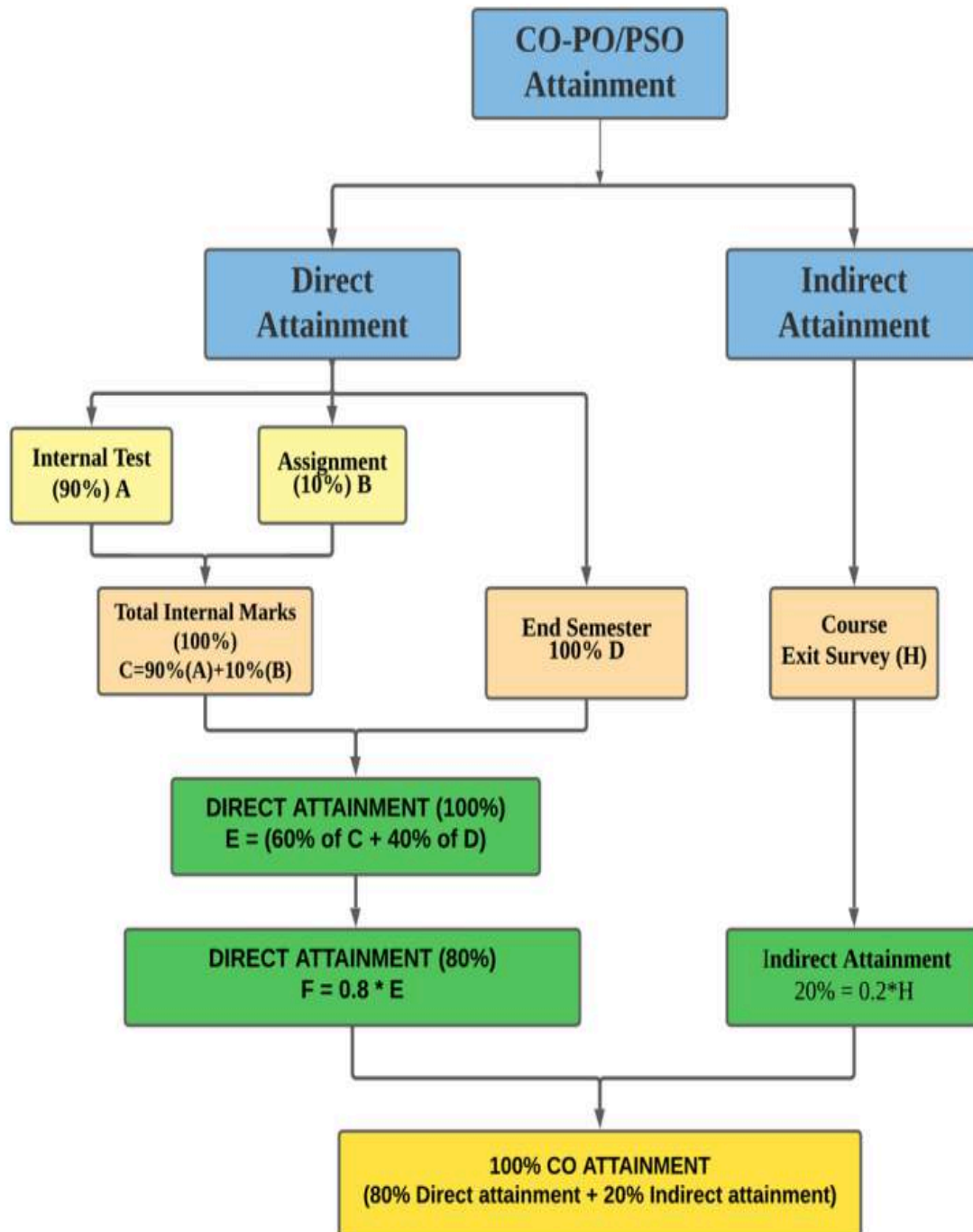
- Student projects, including minor projects in the second year and major projects in the final year, are comprehensively assessed through a combination of internal and external evaluations.
- Three internal reviews assess project progress, and a final external examination (Viva Voce) evaluates students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

Indirect Assessment:

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

Course-End Survey:

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



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

3.3.2 Provide results of evaluation of each PO & PSO(30)

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
C101	2.99	1	-	-	-	-	-	-	-	-
C102	1.86	0.88	-	0.88	-	-	0.66	-	-	0.66
C103	1.88	1.37	-	-	1.28	-	-	-	-	-
C104	1.4	-	-	-	-	0.8	0.8	-	-	-
C105	3	1	2.4	-	2	-	1	1.4	-	2
C106	3	-	-	2.8	-	-	1	-	-	-
C107	3	-	-	1.8	-	-	-	-	-	-
C108	-	-	-	-	-	1	1	-	-	-
C109	3	-	-	2.25	2	-	2.33	-	-	3
C110	-	-	-	-	-	-	2	-	-	-
C111	3	-	-	1	1	-	1	-	-	-
C112	2.2	1.02	-	-	-	-	-	-	-	-
C113	2.5	0.83	-	-	-	-	-	-	-	-
C114	1.66	0.83	-	-	-	-	-	0.83	-	-
C115	2.39	1.06	-	-	-	-	0.8	-	-	-
C116	2.93	1.56	1.56	1.95	1.63	1.3	2.34	-	-	-
C117	3	1	-	-	-	-	-	-	-	-
C118	2	1	-	-	-	-	-	1	-	-
C119	2	-	-	1.17	-	-	-	-	-	-
C120	3	2	1	1	1	1	1	-	-	-
C121	1.25	-	-	-	-	-	3	-	-	-
C122	3	-	-	-	1	-	-	-	-	-
C123	3	2	-	-	1	-	2	-	-	-
C201	3	2	-	-	-	-	1	-	-	1
C202	1.62	1.21	0.81	2.02	2.43	-	0.81	-	-	-
C203	2.74	0.98	1.56	1.47	1.71	1.3	1.96	-	-	-
C204	1.91	-	1.03	1.03	1.23	-	1.47	-	-	-

C205	2.68	1.79	1.79	0.89	0.89	-	0.89	-	-	0.89
C206	2	2	2.2	2	-	-	1.2	-	-	-
C207	3	1.4	1.6	1.8	1.8	2.2	2.6	-	-	-
C208	2	1	1.67	2	-	-	-	-	-	-
C209	3	1	-	2.6	-	1.17	1.67	-	-	-
C210	-	-	-	-	-	-	3	-	-	-
C211	3	-	-	1	-	-	-	-	-	-
C212	2.25	-	-	2	1.5	1	1	1	2	1.5
C213	2.79	0.93	0.93	1.49	1.86	-	0.93	0.93	0.93	0.93
C214	1.35	1.5	1.05	0.75	0.75	0.75	0.75	-	-	-
C215	2.46	2.46	1.64	-	0.82	-	0.82	-	-	0.82
C216	2.65	1.94	1.94	1.94	1.59	0.88	2.48	2.65	0.88	2.65
C217	1.95	-	0.98	0.98	1.95	-	0.98	-	-	-
C218	3	1	-	2.67	-	-	1	-	-	1
C219	1	1.33	1	1.8	-	2	1	-	-	-
C220	3	1.25	1.25	2	-	1	2	-	-	2
C221	3	-	2.6	1.6	-	2.8	2.6	3	-	3
C222	1.25	-	-	-	-	-	3	-	-	-
C301	3	1	-	-	-	1.4	1	1	1	1
C302	2	-	1	2	1	2	1	1.33	2	1.4
C303	3	-	-	-	-	-	3	-	-	-
C304	2.78	1.24	1.98	2.18	2.18	0.99	2.18	-	-	-
C305	1.75	2	2	1	-	-	1.33	-	-	-
C306	2	1.25	3	2	1	-	1	2.8	1.75	1
C307	3	1	2	2	3	2.75	3	-	-	-
C308	3	-	-	2	-	-	2.2	-	-	-
C309	3	-	1	2	1	1	3	1	1	2
C310	2	2.25	2	1.5	2.25	2.5	3	1.75	1.25	3
C311	3	-	2.25	-	-	-	1.75	2.75	-	2.75
C312	-	-	-	-	-	2.95	1.97	-	-	-

C313	2.95	1.77	1.77	-	-	0.98	0.98	0.98	-	-
C314	3	2	2	2.5	-	-	1.25	-	2.5	2.4
C315	2.96	0.99	1.58	0.99	1.97	1.97	1.97	0.99	0.99	2.96
C316	-	-	-	-	1.79	-	2.69	-	-	-
C317	2.5	2	2	2.25	-	-	2	-	-	2.25
C318	-	-	-	-	2	3	3	-	-	-
C319	2	2.25	2	1.5	2.25	2.5	3	1.75	1.25	3
C320	3	-	3	-	-	-	2.5	-	-	1.5
Direct Attainment Average outcome	2.49	1.41	1.71	1.71	1.58	1.64	1.73	1.57	1.41	1.86
80% of Direct Attainment	1.99	1.13	1.36	1.36	1.27	1.31	1.39	1.26	1.13	1.49
Indirect Attainment Average outcome	2.20	1.25	1.22	1.34	1.35	1.11	1.36	1.21	1.21	1.16
20% of Indirect Attainment	0.44	0.25	0.24	0.27	0.27	0.22	0.27	0.24	0.24	0.23
Overall Attainment	2.43	1.38	1.61	1.63	1.54	1.53	1.66	1.50	1.37	1.72

Criterion 4

Student's Performance

Students 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)
	2023-2024	2022-2023	2021-2022	2020-2021	2019-2020
Sanctioned intake strength of the program (N)	60	48	48	48	48
Total number of students, admitted through state level counseling(N1)	36	44	47	43	35
Number of students, admitted through Institute level quota (N2)	0	0	0	0	0
Number of students, admitted through lateral entry (N3)	-	2	4	4	2
Total number of students admitted in the Program (N1 + N2 + N3)	36	46	51	47	37
Enrolment Ratio = (N1+N2)/N	60%	92%	98%	90%	73%

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	36	-	-	-
2022-2023	44	19	-	-
2021-2022	49	4	5	-
2020-2021 LYG	47	9	6	6
2019-2020 LYG m1	37	1	1	1
2018-2019 LYG m2	19	7	3	3

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	36	0	0	0
2022-2023	44	37	0	0
2021-2022	49	35	26	0
2020-2021 LYG	47	26	24	23
2019-2020 LYG m1	37	32	30	28
2018-2019 LYG m2	19	15	10	10

4.1 Enrollment Ratio

	N (From Table 4.1)	N1 + N2 (From Table 4.1)	Enrollment Ratio [(N1 + N2 / N)*100]
2023-2024	60	36	60
2022-2023	48	44	91.67
2021-2022	48	47	97.92

Average [(ER1 + ER2 + ER3) / 3] : 83.095

4.2 Success Rate in the stipulated period of the program

Item	LYG (2020-23)	LYG m1(2019-22)	LYG m2(2018-21)
Total Number of students (X) (admitted through state level counseling + admitted through Institute on Level quota + admitted through Lateral entry) (N1 + N2 + N3)	47	37	19
Number of students who have graduated without backlogs in the stipulated period (Y)	6	1	3
Success Index [SI = Y / X]	0.128	0.027	0.158

Average SI [(SI1 + SI2 + SI3) / 3] : 0.104

Assessment [40 * Average SI] : 4.16

4.2.2 Success rate in stipulated period

Item	LYG (2020-23)	LYG m1(2019-22)	LYG m2(2018-21)
Total Number of students (X) (admitted through state level counseling + admitted through Institute on Level quota + admitted through Lateral entry) (N1 + N2 + N3)	47	37	19
Number of students who have graduated without backlogs in the stipulated period (Y)	23	28	10
Success Index [SI = Y / X]	0.489	0.757	0.526

Average SI [(SI1 + SI2 + SI3) / 3] : 0.591

Assessment [20 * Average SI] : 11.82

4.3 Academic Performance in First Year

Academic Performance	2022-23 (CAYm1)	2021-22 (CAYm2)	2020-21 (LYG)
Mean of CGPA or mean percentage of all successful students(X)	7.8	7.5	10
Total number of successful students(Y)	37	35	26
Total number of students appeared in the examination(Z)	37	36	31
API [X*(Y/Z)]:	7.80	7.29	8.39

Average API [(AP1 + AP2 + AP3)/3] : 7.83

Assessment [2.5 * AverageAPI] : 19.575

4.4 Academic Performance in Second Year

Academic Performance	2022-23 (CAYm1)	2021-22 (CAYm2)	2020-21 (LYG)
Mean of CGPA or mean percentage of all successful students(X)	7.7	7.94	8.66
Total number of successful students(Y)	26	24	30
Total number of students appeared in the examination(Z)	30	31	36
API [X*(Y/Z)]:	6.67	6.15	7.22

Average API [(AP1 + AP2 + AP3)/3] : 6.68

Assessment [2.0 * AverageAPI] : 13.36

4.5 Academic Performance in Final Year

Academic Performance	2022-23 (CAYm1)	2021-22 (CAYm2)	2020-21 (LYG)
Mean of CGPA or mean percentage of all successful students(X)	8.44	8.13	8.39
Total number of successful students(Y)	23	28	10
Total number of students appeared in the examination(Z)	23	33	10
API [X*(Y/Z)]:	8.44	6.90	8.39

Average API [(AP1 + AP2 + AP3)/3] : 7.91

Assessment [1.5 * AverageAPI] : 11.865

4.6 Placement and Higher Studies

Item	2020-21 (Last Year Graduate,LYG)	2019-20 (Last Year Graduate Minus 1 Batch,LYGm1)	20118-19 (Last Year Graduate Minus 2 Batch,LYGm2)
Total No of Final Year Students(N)	23	30	10
No of students placed in the companies or goverment sector(X)	21	16	4
No of students admitted to higher studies (Y)	0	11	5
No. of students turned entrepreneur in the respective field of engineering/technology (Z)	0	0	0
Placement Index $[\frac{((1.25 * X) + Y + Z)}{N}] :$	1.14	1.03	1.00

Batch Year: 2020-2023					
S.n o.	SBTE Register No.	Name of the student	Name of the Employer / Institution	Appointment No	Category (X / Y / Z)
1	1992520001	ANURAG KUMAR	DHOOT Transmission Power Ltd		X
2	1992520002	ADITYA KUMAR			
3	1992520003	SATYAM KUMAR	Saatvik green energy pvt. limited	41009100364	X
4	1992520006	AMARJEET KUMAR	DHOOT Transmission Power Ltd		X
5	1992520007	BOBY SHANKAR KUMAR	DHOOT Transmission Power Ltd		X
6	1992520009	HARI OM KUMAR PANDEY	DHOOT Transmission Power Ltd		X
7	1992520012	MANISH RANJAN	DHOOT Transmission Power Ltd		X
8	1992520013	MANISHA KUMARI	DAIPL - Jodalli	14807434	X
9	1992520019	ROSHAN KUMAR	MAHLE ANAND THERMAL SYSTEM	40006467	X
10	1992520021	SHASHI RANJAN	INALFA GABRIEL ROOF SYSTEMS PVT LTD	INT1041	X
11	1992520025	SIMRAN KUMARI	MAHLE, Pune	40006462	X
12	1992520027	VIKASH KUMAR PANDIT	Anand Mando E-Mobility Pvt. Ltd	AMEM0413	X
13	1992520029	ATUL KUMAR	DHOOT Transmission Power Ltd		X
14	1992520030	GAUTAM KUMAR	CIEL HR Services Private Limited	CN012426594	X
15	1992520032	VIVEK KUMAR	MAHLE, Pune	40006483	X
16	1992520035	VIKASH KUMAR	MAHLE, Pune	40006557	X
17	1992520037	SHIVSHANKAR SINGH			
18	1992520038	AMIT KUMAR SHARMA	In Alfa Gabriel sunroof system pvt.ltd	Int 1052	X

19	1992520039	MAHESHWAR KUMAR	Saatvik Green Energy Pvt.Ltd	9100469754	X
20	1992520043	BHANU PRATAP SINGH	INALFA GABRIEL ROOF SYSTEMS PVT LTD	INT1040	X
21	1992520044	RAHUL GUPTA	TCE	117404	X
22	1992520046	MD AMISH	INALFA GABRIEL ROOF SYSTEMS PVT LTD	INT1035	X
23	1992520603	SAURAV KUMAR	TCE	117410	X
Total number of Students					23
No. of students placed in companies or Government Sector (X)					21
No. of students admitted to higher studies (Y)					0
No. of students turned entrepreneur in the respective field of engineering/technology (Z)					0

Batch Year: 2019-2022					
S.no	Name of the student	SBTE Register No.	Name of the Employer / Institution	Appointment No	Category (X / Y / Z)
1	Rakesh tiwari	1992519001	ELECTRO OPTICAL SYSTEM	A3D1-030	X
2	Sameer Sagar	1992519002	Wind care Pravite ltd	WCIPL/HR/GPC/CAMPUS OFFER-2022	X
3	Sidharth kumar vishwakarma	1992519003			
4	Rituraj kumar verma	1992519006	Higher Studies	Medicaps university, Indore	Y
5	Ranjan Singh	1992519008			
6	Satyaprakash kumar	1992519009	Higher Studies	COLLR/1005	Y
7	Aman kumar	1992519010	HIGHER STUDY	22102148910	Y
8	Durgesh Nandan	1992519012	INDIAN OIL CORPORATION LIMITED.	Emp. ID. : 9823259	X
9	Chandan Kumar	1992519013	Higher Studies	160ME223D08	Y
10	Sachin kumar	1992519014	Wind care Pravite ltd	WCIPL/HR/GPC/CAMPUS OFFER-2022	X
11	Rajneesh Kumar	1992519015	Gabriel hosur, Tamilnadu	90004972	X
12	Vishal Ranjan	1992519017	HIGHER STUDY	22-LE-M-01	Y
13	Tinkal Singh	1992519018	Higher Studies	0132ME223D33	Y
14	Aman kumar	1992519020	Gabriel hosur, Tamilnadu	90005372	Y
15	Ranjan kumar	1992519021	Higher Studies	23-LME-01	Y
16	Bittu Kumar	1992519025	Wind care Pravite ltd	WCIPL/HR/GPC/CAMPUS OFFER-2022	X
17	Chitranjan kumar yadav	1992519026	Higher Studies	22102148909	Y
18	Afnan Ahmad	1992519027	ELECTRO OPTICAL SYSTEM	A3D1-031	X
19	Ramesh Kumar	1992519028	Wind care Pravite ltd	WCIPL/HR/GPC/CAMPUS	X

				OFFER-2022	
20	Ravi Singh	1992519029	Wind care Pravite ltd	WCIPL/HR/GPC/CAMPUS OFFER-2022	X
21	Amarjeet raj	1992519030			
22	Sachin Kumar Gupta	1992519031	Higher Studies		Y
23	Golu Kumar Manjhi	1992519032	Wind care Pravite ltd	WCIPL/HR/GPC/CAMPUS OFFER-2022	X
24	Vishal kumar	1992519033	Wind care Pravite ltd	WCIPL/HR/GPC/CAMPUS OFFER-2023	X
25	Sudhakar Kumar	1992519034	Gabriel India Pvt Ltd	90005147	X
26	Saugandh Kumar	1992519035	Mahindra CIE Automotive Ltd	NAPSFD1587	X
27	Akash kumar	1992519036	Higher Studies		Y
28	Priyanshu Kumar	1992518008	Wind care Pravite ltd	WCIPL/HR/GPC/CAMPUS OFFER-2022	X
29	Santosh Kumar	1992518012	Wind care Pravite ltd	WCIPL/HR/GPC/CAMPUS OFFER-2022	X
30	Omprakash Kumar	1992518018	Adani Power(Jharkhand) Ltd	GODDA82696	X
31	Mosharaff (Lateral Entry)		Mechweld Infracon Pvt Ltd	11040951	X
Total number of Students					30
No. of students placed in companies or Government Sector (X)					16
No. of students admitted to higher studies (Y)					11
No. of students turned entrepreneur in the respective field of engineering/technology (Z)					0

Batch Year: 2018-2021					
S.no.	Name of the student	SBTE Register No.	Name of the Employer / Institution	Appointment No	Category (X / Y / Z)
1	SHRESTH KUMAR	1992518001	Higher studies		
2	SAFI AHMAD	1992518002	Higher studies	RE/23/LCSE/002	Y
3	RAJNISH KUMAR	1992518009	GEMS Polytechnic College	GPC/HR/2023/014	X
4	SAGAR	1992518010	Higher studies	2241019676	Y
5	PANKAJ KUMAR	1992518013	MAHLE ANAND Filter System Private Ltd	8174	X
6	TUSHAR KAPOOR	1992518014	Higher studies	21102148907	Y
7	SUMIT CHAUHAN	1992518015	Wind Care, Gujarat	WCIPL/HRMS/ZCAMPUS-NGO FF-01/21-22	X
8	KUMAR GAUTAM	1992518016	Higher studies	21102148911	Y
9	AYUSH RAJ	1992518019	Higher studies	2251018004	Y
10	Piyush Kumar	1992518601	Wind Care, Gujarat	WCIPL/HRMS/ZCAMPUS-NGO FF-01/21-22	X
No. of students placed in companies or Government Sector (X)					4
No. of students admitted to higher studies (Y)					5
No. of students turned entrepreneur in the respective field of engineering/technology (Z)					0

4.7 Professional Activities

A. Availability of Professional Societies/Chapters & Relevant activities

In the Department of Mechanical 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	44

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: Gear-Up****Relevant Activities:****Orientation Program:**

At the beginning of each academic year, Gear-Up 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:**

Gear-Up 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 Mechanical Engineering at GEMS Polytechnic College.

Office Bearers of the Association CAY (2023-2024)			
Sl.No	Name of the Student	Designation	Class
1.	Jay Kumar Lakra	Student Chairman	3rd yr/Mech
2.	Manoj Kumar Marandi	Student Vice Chairman	3rd yr/Mech
3.	Kundan Kumar	Student Secretary	3rd yr/Mech
4.	Pradeshi Kumar	Joint Secretary	3rd yr/Mech
5.	Irshad Alam	Treasurer	2nd yr/Mech
6.	Vivek Ranjan	Executive Member	3rd yr/Mech
7.	Prince Pal	Executive Member	2nd yr/Mech
8.	Rohit Kumar Singh	Executive Member	2nd yr/Mech

Office Bearers of the Association CAY (2022-2023)			
Sl.No	Name of the Student	Designation	Class
1.	Md Amish	Student Chairman	3rd yr/Mech
2.	Satyam Kumar	Student Vice Chairman	3rd yr/Mech
3.	Vikash Kumar	Student Secretary	3rd yr/Mech
4.	Shashi Ranjan	Joint Secretary	3rd yr/Mech
5.	Rohit Kumar	Treasurer	2nd yr/Mech
6.	Anurag KUMar	Executive Member	3rd yr/Mech
7.	Jay Kumar Lakra	Executive Member	2nd yr/Mech
8.	Manoj Kumar Marandi	Executive Member	2nd yr/Mech

Office Bearers of the Association CAYm1 (2021-2022)			
Sl.No	Name of the Student	Designation	Class
1.	Vishal Ranjan	Student Chairman	3rd yr/Mech
2.	Afnan Ahmad	Student Vice Chairman	3rd yr/Mech
3.	Rajneesh Kumar	Student Secretary	3rd yr/Mech
4.	Md Amish	Joint Secretary	2nd yr/Mech
5.	Sameer Sagar	Treasurer	3rd yr/Mech
6.	Satyam Kumar	Executive Member	2nd yr/Mech
7.	Vikash Kumar	Executive Member	2nd yr/Mech
8.	Shashi Ranjan	Executive Member	2nd yr/Mech

B. Number, quality of engineering events

Professional Excellence in Engineering:

At the Department of Mechanical 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.	22-11-2023	Career Guidance	Mr. Chandrasekaran Ministry of Defence Delhi
2.	08-09-2023	Career Guidance	Mr, Sankar G Associate Manager - Employee Relations Apollo Tyres
3.	04-09-2023	Career Guidance	Mr. Pankaj Kumar Dubey, HR , KP Reliable Technique India Pvt Ltd
4.	08-08-2023	Guest Lecture - An overview of Thermal Power Plant	Mr. Abhishek Kumar, Senior Engineer NTPC Nabinagar
5.	01-08-2023	Career Guidance	Mr. Nitish Prakash Surya, Youth Coach and Author, Engineers Academy, Patna
6.	28-06-2023	Paper presentation	Mr. Anil Kolli, HoD ME Mrs. Pameela HoD EEE GEMS Ploytechnic college
7.	27-06-2023	Technical Quiz	Mrs. Chinthiya Lecturer GEMS Ploytechnic college
8.	27-06-2023	Metal Art	Mrs. Catherine, Lecturer GEMS Polytechnic college

9.	12-05-2023	Light Up	Mrs. Catherine, Lecturer GEMS Ploytechnic college
10.	28-02-2023	National Science Day - QUIZ competition, Poster presentation.	Mr.Ragunath A. IIC president GEMS Polytechnic College
11.	30-01-2023	Guest Lecture - Industry Expectations from Students	Mr.Vikash Kumar Singh, Customer Relation Manager, J.K. & Ravindra Automobiles, Aurangabad, Bihar.
12.	30-01-2023	Leadership talk with AICTE Chairman	Mr.Abhay Jere chief Innovation Officer, Ministry of Education. & Dr. T G Sitharam, AICTE chairman
13.	11-01-2023	Guest Lecture - National Startup day	Mr.Abraham Dennyson. B.tech,MBA, PGD-PHN Senior manager-Program analyst at Project Concern International.
14.	24-09-2022	Guest Lecture - Industry Career Guidance	Mr. Christian, Operation Engineer, Germany.
15.	14-09-2022	CNC Programming & Machining	Mr Jonathan Bodimer, Process Mechanic Poppelmann, Germany.
16.	03-09-2022	Technical quiz	ISTE Student Chapter
17.	30-08-2022	Career Guidance	Dr. P. K. Rao, Training and Placement Expert, Department of Science and Technology, Patna, Bihar
18.	01-10-2021	Guest Lecture - Mechanical Engineering Design	Mr.Alugula Manoj Babu, Design Engineer, A Smart Home Solution
19.	18-11-2019	Guest Lecture - Industrial Pumps and Mechanical Seals	Mr.Bernard, Visible Engineering, Malaysia
20.	19-09-2019	CNC Programming & Machining	Mr Willi Gorr, Germany

List of Events / Activities under the Department Association:

Sl.No	Date	Name of the Event / Activity	Name of the resource person with Designation
1.	11-03-2024	Orientation Program	Gear Up Association Dept.of Mech Engg.
2.	10-11-2023	Orientation Program	Gear Up Association Dept.of Mech Engg.
3.	08-09-2023	Farewell for 2020-20223 Batch	Gear Up Association Dept.of Mech Engg.
4.	09-05-2023	Orientation Program	Gear Up Association Dept.of Mech Engg.
5.	15-12-2022	Orientation Program	Gear Up Association Dept.of Mech Engg.
6.	24-09-2022	Orientation Program	Gear Up Association Dept.of Mech Engg.
7.	27-06-2022	Farewell for 2019-2022 Batch	Gear Up Association Dept.of Mech Engg.
8.	15-09-2021	Farewell for 2018-2021 Batch	Gear Up Association Dept.of Mech Engg.
9.	08-08-2019	Orientation Program	Gear Up Association Dept.of Mech Engg.

4.7.2 Publication of technical magazines, newsletters, etc.

(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

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

Name of the Newsletter: **Gear-Up**

Publication Period: **Half-Yearly**

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

Quality and Relevance of Contents:

Our newsletter, Gear-Up, stands as a testament to our commitment to provide valuable and relevant content to our students and faculty. Here's what sets Gear-Up 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 Gear-Up 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 Gear-Up are carefully curated to cater to the diverse interests and informational needs of our readers.

Our newsletter typically features:

Technical Articles:

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

Student Spotlights:

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

Faculty Contributions:

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

Alumni Stories:

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

Upcoming Events:

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

Student and Faculty Achievements:

Recognizing and celebrating the accomplishments of our talented individuals.

Gear-Up is not just a newsletter; it's a platform that showcases the brilliance and innovative spirit within the Department of Mechanical 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.

B. Participation of Students from the program

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

Editorial Board Composition:

Editorial Role	Responsible Persons	Responsibilities
Chief Editors	Mr.Anil Kolli, Head of the Department / Mech. Mr.Arun Pandian, Sr.Lecturer / Mech	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	Students 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.MaxMark, Lecturer / Mech	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 mechanical engineering, including their research findings, project updates, or personal experiences. These contributions are invaluable for sharing knowledge and fostering a sense of camaraderie.

Editorial Team Roles:

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

Peer Review:

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

Department Events Coverage:

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

Highlighting Excellence:

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



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

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

Empowering Excellence Beyond Borders:

Students in the Department of Mechanical 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 mechanical engineering

S.No.	Academic Year	Event Description	Number of Students Participated	Event Level (Inter-institute / State/National)	Name of the Participating Institute / Organisation	Participated / Prize Won
1	2022-2023	CHANDRAYAN 3 MAHAQUIZ	8	National Level	NITI AAYOG AND MYGOV CONGRATULATE	Participated
2	2022-2023	ROBOTICS AND AUTOMATION Quiz	17	National Level	KARPAGAM ENGINEERING COLLEGE, Coimbatore, Tamil Nadu	Participated
3	2022-2023	Swachh Bharat Mission Grameen Phase-11 Quiz	3	National Level	Department of Drinking Water and Sanitation & MyGov congratulate	Participated
4	2022-2023	Quiz on Shunya-Zero-Pollution Mobility Campaign	1	National Level	NITI Aayog and MyGov congratulate	Participated
5	2022-2023	Swarj Quiz-Episode:61	1	National Level	MyGov and Prasar Bharati Congratulate	Participated
6	2022-2023	P20 Youth Connect Quiz	1	National Level	Shri Om Birla	Participated
7	2022-2023	Khadi Mahatosav Quiz	1	National Level	Khadi and Village Industries Commission	Participated
8	2022-2023	Shree Anna Quiz	1	National Level	MyGov Portal	Participated
9	2022-2023	One Health for all Quiz	2	National Level	MyGov and Ministry of Health and family Welfare	Participated
10	2022-2023	Quiz on PM vishwakarma Yojana	3	National Level	MyGov and MSDE	Participated

11	2022-2023	International Day of Sign Languages	2	National Level	MyGov Portal	Participated
12	2022-2023	Quiz on Cyclones	2	National Level	MyGov and India Meteorological Department Congratulate	Participated
13	2022-2023	Heritage Quiz	1	National Level	MyGov and Archaeological Survey of India Congratulate	Participated
14	2022-2023	Lifestyle for Environment	1	National Level	MyGov and Ministry of Education congratulate	Participated

S.no	Academic Year	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	2022-2023	MD. AMISH	1992520046	National Level Senior Secondary Science Exhibition	INSTITUTE LEVEL	Sityog Institute of Technology, Aurangabad, Bihar	First Prize
2	2022-2023	SATYAM KUMAR	1992520003	National Level Senior Secondary Science Exhibition	INSTITUTE LEVEL	Sityog Institute of Technology, Aurangabad, Bihar	First Prize
3	2020-2021	KUMAR GAUTAM	1992518016	National Science Day	INSTITUTE LEVEL	JANSONS INSTITUTE OF TECHNOLOGY, Tamil Nadu	Participated
5	2020-2021	KUMAR GAUTAM	1992518016	Online Internship On HVAC System	INSTITUTE LEVEL	NSDC Skill India	Completion
6	2020-2021	RAKESH TIWARI	1992519001	3D EXTRAVAGANZA	INSTITUTE LEVEL	Karunya Institute of Technology, Tamil Nadu	Participated
7	2020-2021	SAMEER SAGAR	1992519002	Galileo Science Club	INSTITUTE LEVEL	JANSONS INSTITUTE OF TECHNOLOGY, Tamil Nadu	Participated
8	2020-2021	KUMAR GAUTAM	1992518016	3D EXTRAVAGANZA	INSTITUTE LEVEL	Karunya Institute of Technology, Coimbatore, Tamil Nadu	Participated
9	2020-2021	DURGESH NANDAN	1992519012	Maths in Paper	INSTITUTE LEVEL	JANSONS INSTITUTE OF TECHNOLOGY, Tamil Nadu	Participated

10	2020-2021	SAMEER SAGAR	1992519002	The Fundamental of Digital Marketing	INSTITUTE LEVEL	Google Digital Unlocked	Completion
11	2020-2021	SANGAM SADHWI	1992519019	TECHNICAL QUIZ	INSTITUTE LEVEL	Sri Eshwar College, Coimbatore, TN	Participated
12	2020-2021	DURGESH NANDAN	1992519012	Research on Metal Processing And Characterization	INSTITUTE LEVEL	JANSONS INSTITUTE OF TECHNOLOGY, Tamil Nadu	Participated

Criterion 5

Faculty Information and Contributions

5 FACULTY INFORMATION AND CONTRIBUTIONS (150)

FACULTY INFORMATION AND CONTRIBUTIONS for the Academic Year 2023-2024

Sl.No	Name	PAN No.	Qualification	Area of Specialization	Designation	Date of Joining	Distribution of teaching load (%)			Currently Associated (Y/N)	Nature of Association (Regular / Contract / Adjunct)	Date of Leaving (In case Currently Associated is "No")
							<i>a</i>	<i>b</i>	<i>c</i>			
1	Anil kolli	AVZPA5201B	B.Tech	Mechanical Engineering	HOD	09.05.2016	100	0	0	Y	Regular	-
2	Arun Pandian P	BKBPA1915L	B.E	Mechanical Engineering	Sr.Lecturer	22.07.2019	60	0	40	Y	Regular	-
3	Himanshu Kumar singh	DWRPS3116P	M.Sc	Chemistry	Sr. Lecturer	13.02.2017	29	0	71	Y	Regular	-
4	Johan Deva Raja M	BTTPJ5286J	B.Tech	Mechanical Engineering	Lecturer	01.09.2022	94.5	0	5.5	Y	Regular	-
5	Prabhu Nath	DOFPP3639E	B.Tech	Mechanical Engineering	Lecturer	28.12.2022	94.5	0	5.5	Y	Regular	-
6	Ravi Kumar Saksena	LLSPS6297R	B.Tech	Mechanical Engineering	Lecturer	16.07.2018	0	0	100	Y	Regular	-
7	Sudhir Kumar	HLLPK7969H	B.Tech	Mechanical Engineering	Sr. Lecturer	04.02.2019	75	0	25	Y	Regular	-
8	Kumara Swamy	BHDPP775L	Ph.D	Mechanical Engineering	Sr. Lecturer	14.11.2023	100	0	0	Y	Regular	-
9	Sujeet Kumar	NPYPS8598B	B.Tech	Mechanical Engineering	Lecturer	16.07.2018	90	0	10	Y	Regular	-

10	Titus R	ANLPT88998G	M.E	Heat Power Engineering	Sr.Lecturer	01.07.2019	100	0	0	Y	Regular	-
11	MaxMark	AMMPH1613G	B-Tech	Mechanical Engineering	Lecturer	01.09.2023	94	0	6	Y	Regular	-
12	Robeert Broose	AZZPN3681J	MA.MEd	Mechanical Engineering	Lecturer	18.10.2023	0	75	25	N	Regular	11.03.2024
13	Ragaland	CGAPR8190N	B.Tech	Mechanical Engineering	Lecturer	17.09.2020	0	25	75	Y	Regular	-
14	Kukkamalla Velangi Babu	GRGPK7052H	MSc Physics	Mechanical Engineering	Lecturer	16.12.2021	0	25	75	Y	Regular	-
15	Daddanala Sanjeeva Kumar	JBRPK8953D	M.Sc.	Mathematics	Lecturer	12.11.2020	0	40	60	Y	Regular	-
16	Robin S	BHHPR4235F	B.TECH	Electronics and Communication Engineering	Sr.Lecturer	05.07.2015	0	25	75	Y	Regular	-
17	Kumar S	IOGPK5636L	B.Tech	Computer Science and Engineering	Lecturer	22.06.2023	0	25	75	Y	Regular	-
TOTAL							837	215	648			
Total Value of F for the Academic Year F= a+b							10.52					

FACULTY INFORMATION AND CONTRIBUTIONS for the Academic Year 2022-2023

Sl.No	Name	PAN No.	Qualification	Area of Specialization	Designation	Date of Joining	Distribution of teaching load (%)			Currently Associated (Y/N)	Nature of Association (Regular / Contract / Adjunct)	Date of Leaving (In case Currently Associated is "No")
							a	b	c			
1	Anil kolli	AVZPA5201B	B.Tech	Mechanical Engineering	HOD	09.05.2016	50	0	50	Y	Regular	
2	Arun Pandian P	BKBPA1915L	B.E	Mechanical Engineering	Sr.Lecturer	22.07.2019	75	0	25	Y	Regular	
3	Eli Yashraj Singh	KJKPS3224P	M.Tech	Advanced Manufacturing Technology	Lecturer	15.12.2020	100	0	0	N	Regular	30.08.2023
4	Himanshu Kumar singh	DWRPS3116P	M.Sc	Chemistry	Sr. Lecturer	13.02.2017	0	30	70	Y	Regular	
5	Jeganraj I	AFEPI3782A	M.E	Avionics	Sr.Lecturer	06.07.2015	0	0	100	Y	Regular	30.10.2023
6	Johan Deva Raja M	BTTPJ5286J	B.Tech	Mechanical Engineering	Lecturer	01.09.2022	100	0	0	Y	Regular	
7	Prabhu Nath	DOFPP3639E	B.Tech	Mechanical Engineering	Lecturer	28.12.2022	70	0	30	Y	Regular	
8	Ravi Kumar Saksena	LLSPS6297R	B.Tech	Mechanical Engineering	Lecturer	16.07.2018	0	0	100	Y	Regular	
9	Sudhir Kumar	HLLPK7969H	B.Tech	Mechanical Engineering	Lecturer	04.02.2019	100	0	0	Y	Regular	
10	Titus R	ANLPT88998G	M.E	Heat Power Engineering	Sr.Lecturer	01.07.2019	100	0	0	Y	Regular	
11	Vimal Raj.B	AQGPV9728A	B.Tech	Mechanical Engineering	Lecturer	24.06.2019	100	0	0	N	Regular	05.08.2023

12	Ketu Kumar Sahitya	GQEPS6172M	B.Tech	Electrical and Electronics Engineering	Lecturer	14.06.2021	0	25	75	Y	Regular	
13	Jaslin Christy S	BAHPJ0976Q	M.A.	English	Lecturer	24.06.2019	0	20	80	N	Regular	05.08.2023
14	Daddanala Sanjeeva Kumar	JBRPK8953D	M.Sc.	Mathematics	Lecturer	12.11.2020	0	20	80	Y	Regular	
TOTAL							695	95	610			
Total Value of F for the Academic Year F= a+b							7.90					

FACULTY INFORMATION AND CONTRIBUTIONS for the Academic Year 2021-2022

Sl.No.	Name	PAN No.	Qualification	Area of Specialization	Designation	Date of Joining	Distribution of teaching load (%)			Currently Associated (Y/N)	Nature of Association (Regular / Contract / Adjunct)	Date of Leaving (In case Currently Associated is "No")
							a	b	c			
1	Anil kolli	AVZPA5201B	B.Tech	Mechanical Engineering	HOD	09.05.2016	100	0	0	Y	Regular	
2	Arun Pandian P	BKBPA1915L	B.E	Mechanical Engineering	Sr.Lecturer	22.07.2019	100	0	0	Y	Regular	
3	Eli Yashraj Singh	KJKPS3224P	M.Tech	Advanced Manufacturing Technology	Lecturer	15.12.2020	100	0	0	N	Regular	30.08.2023
4	Himanshu Kumar singh	DWRPS3116P	M.Sc	Chemistry	Sr.Lecturer	13.02.2017	0	25	75	Y	Regular	
5	Jeganraj I	AFEPI3782A	M.E	Avionics	Sr.Lecturer	06.07.2015	0	0	100	Y	Regular	30.10.2023
6	Nitish Chandra	AOTPC9650H	B.Tech	Mechanical & Production Engineering	Sr.Lecturer	16.01.2020	60	0	40	N	Regular	05.07.2022
7	Kukkamalla Velangi Babu	GRGPK7052H	MSc Physics	Physics	Lecturer	16.12. 2021	0	50	50	Y	Regular	
7	Ravi Kumar Saksena	LLSPS6297R	B.Tech	Mechanical Engineering	Lecturer	16.07.2018	0	0	100	Y	Regular	
8	Sudhir Kumar	HLLPK7969H	B.Tech	Mechanical Engineering	Lecturer	04.02.2019	75	0	25	Y	Regular	
9	Titus R	ANLPT88998G	M.E	Heat Power Engineering	Sr.Lecturer	01.07.2019	100	0	0	Y	Regular	
10	Vimal Raj.B	AQGPV9728A	B.Tech	Mechanical Engineering	Lecturer	24.06.2019	100	0	0	N	Regular	05.08.2023

11	Jaslin Christy S	BAHPJ0976Q	M.A.	English	Lecturer	24.06.2019	0	34	66	N	Regular	05.08.2023
12	Yogesh C	CHGPC3076F	M.Sc	Mathematics	Lecturer	15.10.2020	0	25	75	N	Regular	27/10/2022
13	Daddanala Sanjeeva Kumar	JBRPK8953D	M.Sc.	Mathematics	Lecturer	12.11.2020	0	34	66	Y	Regular	
TOTAL							635	168	597			
Total Value of F for the Academic Year F= a+b							8.03					

FACULTY INFORMATION AND CONTRIBUTIONS for the Academic Year 2020-2021

Sl.No.	Name	PAN No.	Qualification	Area of Specialization	Designation	Date of Joining	Distribution of teaching load (%)			Currently Associated (Y/N)	Nature of Association (Regular / Contract / Adjunct)	Date of Leaving (In case Currently Associated is "No")
							a	b	c			
1	Anil kolli	AVZPA5201B	B.Tech	Mechanical Engineering	HOD	09.05.2016	100	0	0	Y	Regular	
2	Arun Pandian P	BKBPA1915L	B.E	Mechanical Engineering	Sr.Lecturer	22.07.2019	75	0	25	Y	Regular	
3	Eli Yashraj Singh	KJKPS3224P	M.Tech	Advanced Manufacturing Technology	Lecturer	15.12.2020	100	0	0	N	Regular	30.08.2023
4	Himanshu Kumar singh	DWRPS3116P	M.Sc	Chemistry	Lecturer	13.02.2017	0	25	75	Y	Regular	
5	Jeganraj I	AFEPI3782A	M.E	Avionics	Sr.Lecturer	06.07.2015	25	0	75	Y	Regular	30.10.2023
6	Nitish Chandra	AOTPC9650H	B.Tech	Mechanical & Production Engineering	Sr.Lecturer	16.01.2020	70	0	30	N	Regular	05.07.2022
7	Ravi Kumar Saksena	LLSPS6297R	B.Tech	Mechanical Engineering	Lecturer	16.07.2018	0	0	100	Y	Regular	
8	Sudhir Kumar	HLLPK7969H	B.Tech	Mechanical Engineering	Lecturer	04.02.2019	50	0	50	Y	Regular	
9	Titus R	ANLPT88998 G	M.E	Heat Power Engineering	Sr.Lecturer	01.07.2019	100	0	0	Y	Regular	
10	Vimal Raj.B	AQGPV9728 A	B.Tech	Mechanical Engineering	Lecturer	24.06.2019	100	0	0	N	Regular	05.08.2023
11	Karnika Vijayabhaskar	IQFPK3983M	BE	Electrical and Electronics Engineering	Lecturer	31.07.2019	0	25	75	N	Regular	5/28/2022

12	Jaslin Christy S	BAHPJ0976Q	M.A.	English	Lecturer	24.06.2019	0	25	75	N	Regular	05.08.2023
13	Yogesh C	CHGPC3076F	M.Sc	Mathematics	Lecturer	15.10.2020	0	25	75	N	Regular	27.10.2022
14	Daddanala Sanjeeva Kumar	JBRPK8953D	M.Sc.	Mathematics	Lecturer	12.11.2020	0	25	75	Y	Regular	
TOTAL							620	125	655			
Total Value of F for the Academic Year F= a+b							7.45					

Distribution of teaching load (%):

- a Faculty Contributing to the same program/ department
- b Faculty serving this program from another Program/ department
- c Faculty of this program serving another program/ department

5.1 Student-Faculty Ratio (SFR) (25)

Year		N=No. of students = Sanctioned Intake + Actually admitted lateral entry students	F = No. of faculty = (a + b) (Refer file:40)	SFR=N/F
CAY	2023-2024	156	10.52	14.83
CAYm1	2022-2023	146	7.90	18.48
CAYm2	2021-2022	148	8.03	18.43
Average SFR				17.25

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

Year		Total number of regular faculty in the department	Total number of contractual faculty in the department
CAY	2023-2024	17	0
CAYm1	2022-2023	12	0
CAYm2	2021-2022	12	0

5.2.1 Faculty Qualification Index (20)

Year		X	Y	F	$FQ = 2 \times [(10X + 7Y) / F]$
CAY	2023-2024	1	8	6	22
CAYm1	2022-2023	2	6	6	20.67
CAYm2	2021-2022	2	6	6	20.67
Average					21.11

5.2.2 Availability of Faculty/principal of that discipline with PhD. Qualification (5)

Year		Availability of Faculty of that discipline with PhD. Qualification
CAY	2023-2024	1
CAYm1	2022-2023	0
CAYm2	2021-2022	0

5.3 Faculty Retention (20)

Description	2022-23 (CAYm1)	2023-2024 CAY
No of Faculty Retained	10	8
Total No of Faculty	12	16
% of Faculty Retained	83	50

Average = 67%

5.4 Faculty as participants in Faculty development/training activities conducted by other organizations (30)

S.NO	Name of the Faculty	Department	Max. 5 Points per Faculty		
			CAYm2	CAYm1	CAY
			2021-2022	2022-2023	2023-2024
1	Anil Kolli	Mech	2	2	5
2	Arun Pandian P	Mech	2	5	5
3	Eli Yashraj Singh	Mech	1	2	0
4	Himanshu Kumar singh	Mech	0	2	0
5	Jeganraj I	Mech	0	2	0
6	Karnika Vijayabhaskar	Mech	2	0	0
7	Ketu Kumar	Mech	2	0	0
8	Nitish Chandra	Mech	2	0	0
9	Prabhu Nath	Mech	0	2	0
10	Ravi Kumar Saksena	Mech	2	2	0
11	Sudhir Kumar	Mech	0	2	5
12	Johan Deva Raja M	Mech	0	0	2
13	Kumara Swamy	Mech	0	0	0
14	Sujeet Kumar	Mech	0	0	0
15	Max Mark	Mech	0	0	5
16	Titus R	Mech	5	5	0
17	Vimal Raj B	Mech	5	0	0
SUM			23	24	22
RF= Number of Faculty required to comply with 25:1 Student-Faculty ratio as per 5.1			6	6	6
Assessment = $6 \times \text{Sum}/0.5\text{RF}$ (Marks limited to 30)			30	30	30
Average assessment over three years (Marks limited to 30) =			30		

5.4. a. Organized/ Conducted FDPs and STTP by this department at State / National Level (12)

S.NO	ACADEMIC YEAR	PROGRAM CONDUCTED DATE		PROGRAM TYPE (WORKSHOP / FDP / STTP)	NAME OF THE PROGRAMME	PROGRAM LEVEL (STATE / NATIONAL)	RESOURCE PERSONS / INSTITUTIONS / ORGANISATIONS
		From	To				
1	2023-2024	23.10.2023	28.10.2023	FDP	One-week Virtual Faculty Development Program (FDP) on “QCAD”	National	Spoken Tutorial, IIT Bombay
2	2023-2024	08.08.2023	09.08.2023	FDP	Exploring Modern Thermal Power Plants - A Comprehensive Overview	State Level	Mr. Abhishek Kumar, Senior Engineer, NTPC Nabinagar
3	2022-2023	24-09-2022	25-09-2022	FDP	Passion Makes Dreams Comes true	State Level	Mr. Christian, Operation Engineer, KARL LUMBERG Germany.
4	2022-2023	12.11.2022	14.11.2022	FDP	Three Days FDP on Quality Assurance in Education & Student-Centered Learning	State Level	Mr.Bansal Raj Kumar
5	2021-2022	19-01-2022	21-01-2022	FDP	Introduction to 3D Printing and Additive Manufacturing	State Level	Mr.Kelvin, 3D printing trainee, ADDITIVE 3D

5.5 Product development, Consultancy, Manufacturing contracts, testing contracts (8)

S.No	Academic Year	Nature of Work	Details of Manufacturing Contract	Customer Details & Address	Revenue in Rs.
1	2020-2021	3D PRINTING	Face shield Closed Top -with visor	Tripolia Social service Hospital project	8,000
2	2020-2021	3D PRINTING	Face shield Closed Top -with visor	GEMS Multispeciality Hospital sikaria	5,440
3	2019-2020	3D PRINTING	Face shield Closed Top	Duncan Hospital	48,000
4	2019-2020	3D PRINTING	Face shield Closed Top -without visor	Christian Hospital	15,000
5	2019-2020	3D PRINTING	Face shield Closed Top -without visor	Christian Hospital	15,000
6	2019-2020	3D PRINTING	Face shield Closed Top -with visor	Tripolia School of nursing	20,800
7	2019-2020	3D PRINTING	Face shield Closed Top -with visor	Tripolia Social service Hospital project	8,000
8	2019-2020	3D PRINTING	Face shield Closed Top -with visor	GEMS English school,Sikaria	1,600
9	2019-2020	3D PRINTING	Face shield Closed Top -with visor	GEMS institute of future Technology	400
10	2019-2020	3D PRINTING	Face shield Closed Top -with visor	Tripolia School of nursing	4,800

5.6 Faculty Performance Appraisal and Development System (FPADS) (30)

A. A well-defined FPADS instituted for all the assessment years (5)

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 (15)

Write Answer:

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.

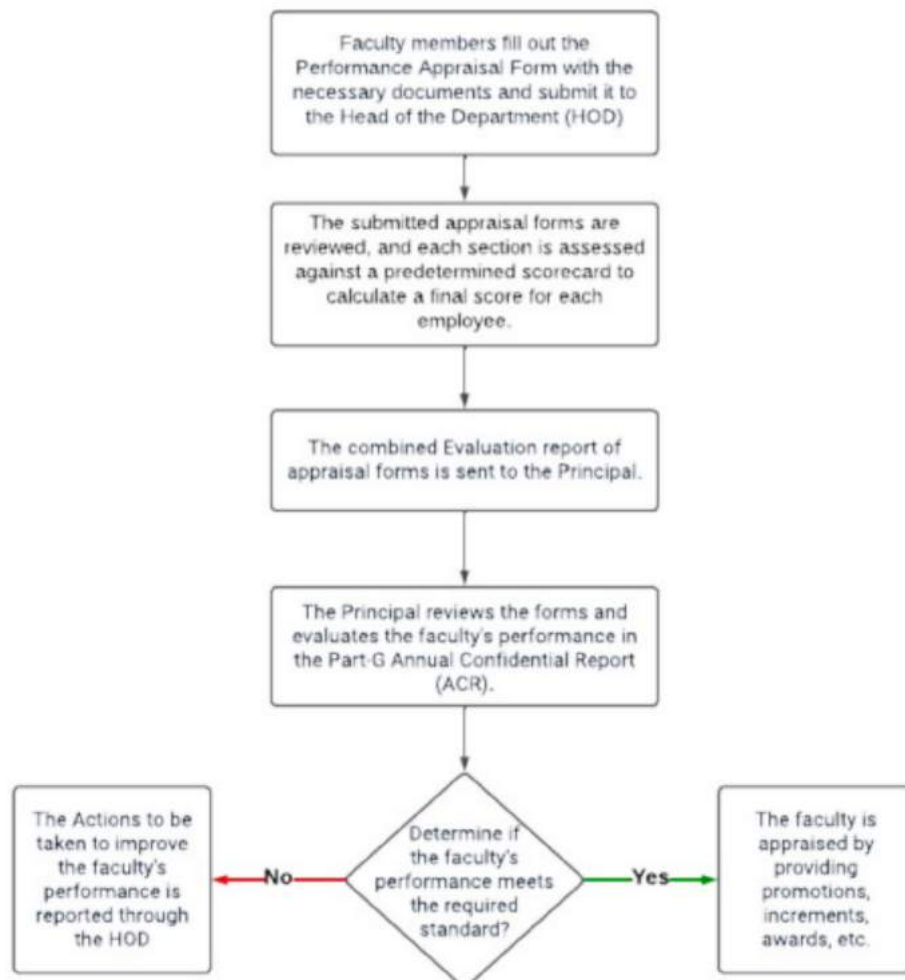
Discussion Points:

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 (10)

Write Answer:

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)

Module 8: 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. Arun Pandian	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.	Sudhir Kumar	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	Himanshu 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
4	Ravi Kumar Saksena	Module 1	Completed & Certified
		Module 2	Completed & Certified
		Module 3	Completed & Certified
		Module 4	In Progress
5	Sujeet Kumar Saksena	Module 1	In Progress
6	Jegan Raj	Module 1	Completed & Certified
		Module 2	Completed & Certified
		Module 3	Completed & Certified
		Module 4	Completed & Certified
		Module 5	In Progress



Online Orientation Training Programme for Mentors from NITTT:

- Mr.Titus R, a faculty member from the Department of Mechanical Engineering at GEMS Polytechnic College with Registration No. 1-7400839623, has completed the Online Orientation Training Programme for Mentors.
- This program was conducted from 19th to 23rd April 2021, and it was organized as art of the National Initiative for Technical Teachers Training (NITTT) by the All India Council for Technical Education (AICTE).
- Titus completion of this training reflects the commitment of GEMS Polytechnic College to fostering professional development and enhancing the quality of technical education through nationally recognized initiatives.

This certificate is computer generated and can be verified by scanning the QR code given below.

Roll No: NPTEL22GE01543390415

To
TITUS R
GEMS POLYTECHNIC COLLEGE, STAFF QUARTERS
NH-3, RATANPURA, JOGIVA MORE
AURANGABAD
BIHAR - 824121
PH. NO. 9304796801

Score	Type of Certificate
>=90	Elite+Gold
75-89	Elite+Silver
>=50	Elite
40-59	Successfully Completed
<40	No Certificate

No. of credits recommended by NPTEL: 3
An additional 1 credit may be awarded if the University deems it fit, based on the actual student effort involved.

Elite NPTEL Online Certification

(Funded by the MoE, Govt. of India)

This certificate is awarded to
TITUS R
for successfully completing the course
NBA Accreditation and Teaching and Learning in Engineering (NATE)
with a consolidated score of **71 %**

Online Assignments **22.5/25** | Proctored Exam **48.75/75**

Total number of candidates certified in this course: **967**

Prof. S. L. Sankumar Babu
Chairman, Center for Continuing Education
IISc Bangalore

Jan-Apr 2022
(12 week course)

Prof. L. Umaashankar
NPTEL Coordinator
IISc Bangalore

Indian Institute of Science Bangalore

Roll No: NPTEL22GE01543390415 To validate and check scores: <https://npTEL.ac.in/home>

Roll No: NPTEL22GE01543390415

To
TITUS R
GEMS POLYTECHNIC COLLEGE, STAFF QUARTERS
NH-3, RATANPURA, JOGIVA MORE
AURANGABAD
BIHAR - 824121
PH. NO. 9304796801

No. of weeks of NPTEL Courses	Equivalence of NPTEL course with regular FDP
4	$\frac{1}{2}$ FDP of one week
8	Full FDP of one week
12	$1\frac{1}{2}$ FDP

Duration of NPTEL course: 12 Weeks

NPTEL-AICTE Faculty Development Programme

(Funded by the MoE, Govt. of India)

This certificate is awarded to
TITUS R
for successfully completing the course
NBA Accreditation and Teaching and Learning in Engineering (NATE)
with a consolidated score of **71 %**

Prof. Andrew Thangara
NPTEL Coordinator
IIT Madras

(Jan-Apr 2022)

Prof. Dilip N. Malkhede
Advisor (Research, Institute & Faculty Development)
All India Council for Technical Education

Roll No: NPTEL22GE01543390415

The candidate has studied the above course through MOODS mode, has submitted online assignments and passed proctored exams. This certificate is therefore acceptable for promotions under CAS as per AICTE notifications dated 24th July 2018, similar to other refresher / orientation courses. P. No. AICTE / RFPD / FDP through MOODS / 2917-18

List of Teaching Faculties Completed Courses Under NPTEL:

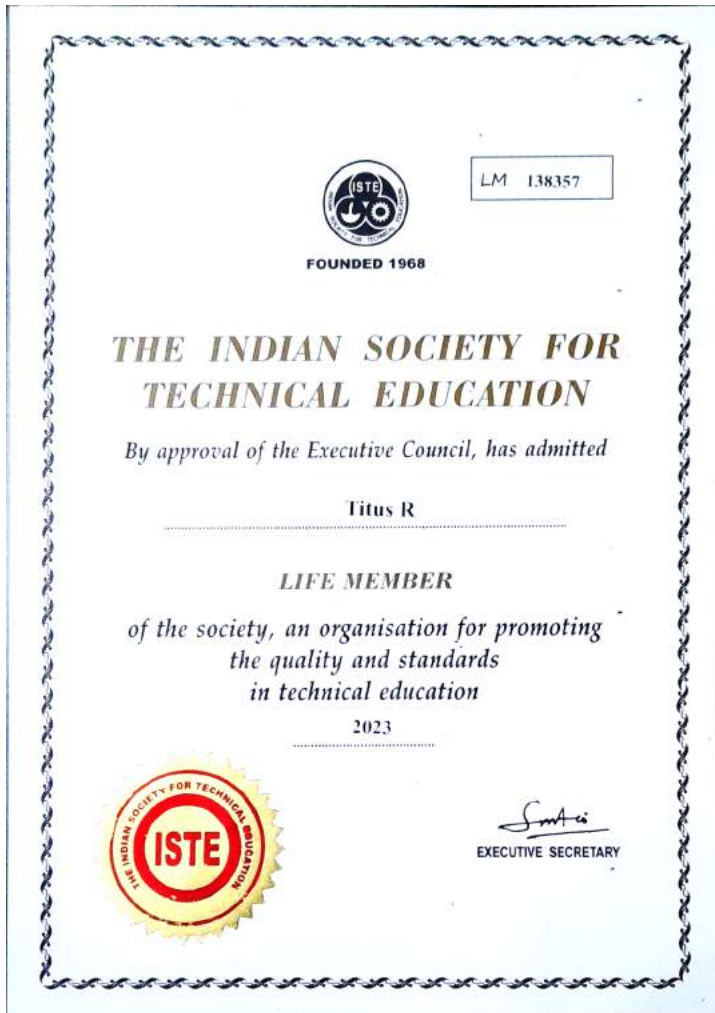
- Our departments teaching faculties have successfully completed courses under the National Programme on Technology Enhanced Learning (NPTEL), enhancing their expertise in diverse technical subjects.
- This accomplishment reflects their dedication to staying abreast of the latest advancements, enriching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

S.NO	Name of the Faculty	Title of the FDP / Trainings	Period of FDP / Training Conducted	No.of days	Institute Organised
1	Anil kolli	Thermal Physics	Jan- Apr 2022	12 Weeks	NPTEL
2	Titus Ramasamy	NBA Accrediation and teaching and learning in Engineering - Mentor	Jan- Apr 2022	12 Weeks	NPTEL
		NBA Accrediation and teaching and learning in Engineering	Jan- Apr 2022	12 Weeks	NPTEL
3	Arun Pandian	NBA Accrediation and teaching and learning in Engineering	Jan- Apr 2022	12 Weeks	NPTEL

Faculty ISTE Life Membership Details:

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

S.NO	Name of the Faculty	Organization Name	ISTE Life Membership Number
1	Mr. Anil Kolli	ISTE	LM-138363
2	Mr. Titus R	ISTE	LM-138357
3	Mr. Arun Pandian	ISTE	LM - 138364



Criterion 6

Facilities and Technical Support

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

In line with AICTE norms, our Mechanical 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.	Class Room	Carpet Area	Shared / Exclusive	Seating Capacity	Availability of Smart facilities	Weekly utilization
1.	Room No:1002 (1st Year)	66 sqm	Exclusive	60	Blackboard, Projector, Speakers, Notice Board, Different Charts	6 Days
2.	Room No:1003 (2nd Year)	66 sqm	Exclusive	60	Blackboard, Smart Board, Projector, Speakers, Internet LAN Connection, Notice Board, Different Charts	6 Days
3.	Room No:1004 (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 classes
5.	Seminar Hall	448.7sqm	Shared	600	Projector, Audio System	During Assembly, 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 Mechanical Engineering ensures the availability of well-equipped laboratories and workshops to meet the curriculum requirements. Adequate provisions are in place:

Sl.No.	Location	Name of the Labs	Shared / Exclusive	Name of the Lab Incharge	Name of the Lab Instructor
1	Room No. 1001	Fluid Mechanics & Hydraulic Machinery Lab	Shared	Mr. Sudhir Kumar	Mr. John kumar
2	Room No. 1009	Engg. Mechanics Lab	Shared	Mr. Ravi Kumar	Mr. Prakash Kumar
3	Workshop -II	Thermal Engineering Lab-& Refrigeration & Air-conditioning Lab	Exclusive	Mr. Titus R	Mr. Prakash Kumar
4	Room No. 1007	Measurement & Metrology Lab & Automobile Engineering Lab	Exclusive	Mr. Anil kolli	Mr. Rajnish Kumar/ Mr. Prakash Kumar
5	Room No. 1008	Material Testing Lab	Exclusive	Mr. Sudhir Kumar	Mr. Jhon Kumar
6	Workshop -I	Engg Workshop -I	Shared	Mr. Arun Paridhan	Mr. Sinojin Kumar
7	Room No. 1104	CAD Lab	Shared	Mr. Johan Deva Raja	Mr. Rajnish Kumar
8	Workshop -II	Manufacturing Engineering Lab-I	Exclusive	Mr. Prabhu Nath	Mr. John kumar







Sufficient Equipment:

- All laboratories are furnished with sufficient 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.

B. Quality of Labs/workshop (20)

Write Answer:

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

Importance of Practical Work:

- Laboratories take precedence over theoretical classes as they allow students to engage in application-oriented practical work.

Dedicated Instructors:

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

Student Involvement:

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

Safety and Cleanliness:

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

Information Display:

- Display boards conveying do's 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)**Write Answer:**

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 Mechanical 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	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	Refrigeration & Air-Conditioning	4 to 5	Vapour Compression Refrigeration Test	2-3 Hours	Mr.Prakash Kumar	Lab Technician	Diploma
			Trial on water cooler test rig				
			Trial on ice plant test rig				
			Trial on A.C test rig				
2	Metrology & Quality Control Lab	4 to 5	Profile Projector	2-3 Hours	Mr.Sinojin	Lab Technician	Diploma
			Autocollimator				
			Surface Plate				

3	Thermal Engineering Lab	4 to 5	Refrigeration Trainer	2-3 Hours	Mr.Prakash Kumar	Lab Technician	Diploma
			Single Stage Reciprocating Compressor				
			Diesel Engine Test Rig (1 cylinder 4 stroke)				
			Conductivity of a solid metallic rod				
			Stefan-Boltzman's law Apparatus				
4	Fluid Mechanics and Machinery	4 to 5	Pelton Wheel Turbine Test Rig	2-3 Hours	Mr.John Kumar	Lab Technician	I.TI
			Venturimeter Apparatus				
			Centrifugal Pump Test Rig				
			Reciprocating Pump Test Rig				
			Notch Apparatus With Various head losses				
5	Manufacturing Technology Lab	4 to 5	Shaper Machine	2-3 Hours	Mr.John Kumar	Lab Technician	I.TI
			Universal Milling Machine				
			Hydraulic Power Press				
			Slotter Machine				
			Lathe Machine				
			ARC Welding				
			Gas Welding				
6	Engineering Workshop Practise Lab	4 to 5	Hydraulic Power Press	2-3 Hours	Mr.Arjun Sharma	Lab Technician	I.TI
			ARC Welding				
			Bench Drill Machine				
			Bench Grinding Machine				
7	Advanced Manufacturing Lab	4 to 5	CNC Lathe Machine	2-3 Hours	Mr.John Kumar	Lab Technician	I.TI
8	Mechanics of Solid Lab	4 to 5	Universal Milling Machine	2-3 Hours	Mr.John Kumar	Lab Technician	I.TI
			Torsion Testing Machine				
			Izod & Charpy Testing Machine				
			Rockwell Cum Brinell Hardness Testing				
			Universal Testing Machine				

6.3 Additional facilities created for improving the quality of learning experience in laboratories (20)

A. Facilities (10)

Write Answer:

- 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 student with an enriched and engaging educational environment.

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

Sr. No.	Facility Name	Utilization
1	Prototype of Mechanical models	a. Enhance hands-on understanding of mechanical concepts. b. Encourage creative design and experimentation with physical models.
2	3D Printers	a. Enable students to create custom prototypes and parts for projects. b. Promote rapid prototyping, allowing for quick design iterations.
3	Virtual Lab	a. Provide a safe environment for conducting experiments and simulations. b. Enable remote access for students to practice and learn at their convenience.
4	Magnetic Particle Testing Machine	a. Teach students non-destructive testing techniques. b. Prepare students for real-world applications in quality control and inspection.
5	Dry Penetration Testing Instrument	a. Familiarize students with material testing methods. b. Develop skills in detecting surface defects and quality assessment.
6	Profile Projector	a. Aid in precision measurement and inspection of workpieces. b. Teach students how to analyze and document geometric features.
7	Digital Vernier Calliper Instrument	a. Improve measurement accuracy and precision skills. b. Facilitate the practice of dimensional metrology in practical applications.

8	Carbon Residue Testing Instrument	<p>a. Introduce students to fuel and oil quality assessment.</p> <p>b. Prepare students for roles in fuel and lubricant industries.</p>
9	CNC Lathe	<p>a. Provide hands-on experience in computer numerical control machining.</p> <p>b. Enhance skills in modern manufacturing processes and automation.</p>
10	4 wheeler Chassis Model	<p>a. Offer insight into automotive engineering and design.</p> <p>b. Facilitate the study of vehicle dynamics and structural analysis.</p>
11	2 Wheeler Chassis Model	<p>a. Support the understanding of lightweight vehicle design.</p> <p>b. Enable students to explore the dynamics of two-wheeled vehicles.</p>
12	Previous Semester Projects Models & Reports	<p>a. Serve as references for future projects and learning.</p> <p>b. Showcase successful project outcomes and encourage knowledge sharing.</p>
13	Display Charts	<p>a. Visual aids for better comprehension of complex concepts.</p> <p>b. Create an interactive and engaging learning environment in the lab.</p>
14	NPTEL Video Lectures	<p>a. Offer supplementary learning resources for theoretical concepts.</p> <p>b. Support a blended learning approach by providing expert-led content.</p>

B. Effective Utilization (5)

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 Mechanical models	100% of utilization in Academics
2	3D Printers	25% of utilization in Academics 50% utilization in Training 25% of utilization in Product Development
3	Virtual Lab	100% of utilization in Academics
4	Magnetic Particle Testing Machine	100% of utilization in Academics
5	Dry Penetration Testing Instrument	100% of utilization in Academics
6	Profile Projector	100% of utilization in Academics
7	Digital Vernier Calliper Instrument	100% of utilization in Academics
8	Carbon Residue Testing Instrument	100% of utilization in Academics
9	CNC Lathe	50% of utilization in Academics 50% of utilization in Training
10	4 wheeler Chassis Model	100% of utilization in Academics
11	2 Wheeler Chassis Model	100% of utilization in Academics
12	Previous Semester Projects Models & Reports	100% of utilization in Academics
13	Display Charts	100% of utilization in Academics
14	NPTEL Video Lectures	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:

Sr.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 Mechanical models	<ul style="list-style-type: none"> The Prototype of Mechanical models consists of various scaled-down physical models representing mechanical systems, components, and mechanisms. 	<ul style="list-style-type: none"> This facility has been established to provide students with tangible examples of complex mechanical systems and to facilitate hands-on learning. 	<ul style="list-style-type: none"> Students can use these models to better understand the operation of various mechanical systems, identify key components, and observe how different elements work together. 	<ul style="list-style-type: none"> This facility enhances students' understanding of mechanical concepts, component interactions, and the application of theoretical knowledge to real-world systems. 	PO1, PS01, PS03
2	3D Printers	<ul style="list-style-type: none"> The Department is equipped with 3D printers for additive manufacturing, allowing students to create three-dimensional 	<ul style="list-style-type: none"> 3D printers are essential for prototyping and manufacturing in modern engineering. This facility enables 	<ul style="list-style-type: none"> Students can design and 3D print prototypes, parts, and models. They can explore the entire 3D printing 	<ul style="list-style-type: none"> Students will enhance their skills in product design, additive manufacturing, and understanding 	PO1, PO3, PO4, PS01, PS03

		objects from computer-aided design (CAD) files.	students to gain practical experience with additive manufacturing.	process, from CAD design to final product.	the possibilities and limitations of 3D printing.	
3	Virtual Lab	<ul style="list-style-type: none"> The Virtual Lab is a computer-based platform that simulates various mechanical engineering experiments and processes. 	<ul style="list-style-type: none"> The Virtual Lab has been established to provide students with a safe and accessible environment for conducting experiments, simulations, and enhancing understanding of theoretical concepts. 	<ul style="list-style-type: none"> Students can access and interact with a wide range of virtual experiments, allowing them to practice and learn in a risk-free, controlled environment. 	<ul style="list-style-type: none"> This facility enhances students' problem-solving skills, understanding of complex mechanical systems, and their ability to analyze and interpret experimental results. 	PO1, PO2, PO4, PSO3
4	Magnetic Particle Testing Machine	<ul style="list-style-type: none"> The Magnetic Particle Testing Machine is used for non-destructive testing of ferrous materials to detect surface and near-surface defects. 	<ul style="list-style-type: none"> This facility is crucial for educating students in non-destructive testing techniques, which are essential for quality control and safety in various industries. 	<ul style="list-style-type: none"> Students can practice setting up and conducting magnetic particle testing on test specimens to identify defects, understand the principles of magnetization, and interpret test 	<ul style="list-style-type: none"> This facility enhances students' knowledge of material testing, inspection techniques, and their ability to evaluate and document defects in materials. 	PO1, PO4, PSO3

				results.		
5	Dry Penetration Testing Instrument	<ul style="list-style-type: none"> The Dry Penetration Testing Instrument is used to assess the surface integrity of materials and detect surface defects. 	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Students can perform dry penetration testing on various materials and components, gaining experience in identifying and evaluating surface defects. 	<ul style="list-style-type: none"> This facility enhances students' understanding of material quality assessment, surface integrity, and non-destructive testing methods. 	PO1, PO4, PS03
6	Profile Projector	<ul style="list-style-type: none"> The Profile Projector is an optical measurement instrument used for accurate measurement and inspection of 2D profiles and features on various workpieces. 	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Students can use the Profile Projector to measure and inspect workpieces, assess geometric tolerances, and perform quality control on machined parts. 	<ul style="list-style-type: none"> This facility enhances students' skills in precision measurement, geometric dimensioning and tolerancing (GD&T), and quality control techniques. 	PO1, PO4, PS03
7	Digital Vernier Calliper Instrument	<ul style="list-style-type: none"> The Digital Vernier Caliper is a handheld instrument used for making accurate and precise measurements of length, thickness, 	<ul style="list-style-type: none"> This facility is essential for teaching students how to perform accurate measurements, a fundamental skill in engineering and 	<ul style="list-style-type: none"> Students can use the Digital Vernier Caliper to measure workpiece dimensions with high precision, ensuring 	<ul style="list-style-type: none"> This facility enhances students' knowledge and skills in dimensional metrology, accuracy in 	PO1, PO4, PS03

		and inside/outside diameters.	manufacturing.	compliance with design specifications.	measurements, and quality assurance.	
8	Carbon Residue Testing Instrument	<ul style="list-style-type: none"> The Carbon Residue Testing Instrument is used to determine the carbon residue of fuels and oils, which is crucial for assessing their quality. 	<ul style="list-style-type: none"> This facility is important for educating students on the evaluation of fuel and lubricant quality, which is essential in the automotive and energy industries. 	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> 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, PS03
9	CNC Lathe	<ul style="list-style-type: none"> The CNC Lathe is a computer-controlled machine tool designed for precision turning and shaping of workpieces, including metal, plastic, and other materials. 	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> This facility enhances students' skills in CNC machining, computer-aided manufacturing (CAM), and understanding advanced manufacturing processes. 	PO1, PO3, PO4, PS02, PS03

10	4 wheeler Chassis Model	<ul style="list-style-type: none"> • The 4 Wheeler Chassis Model which represents an automobile chassis, including components such as the frame, suspension, and steering systems. 	<ul style="list-style-type: none"> • This facility is designed to provide students with a hands-on understanding of automotive engineering and chassis design, helping them grasp the complexities of vehicle structures. 	<ul style="list-style-type: none"> • Students can study and analyze the 4 Wheeler Chassis Model, examining the design, components, and structural features, which are vital in vehicle engineering. 	<ul style="list-style-type: none"> • This facility enhances students' knowledge of automotive engineering, chassis design, and the application of mechanical principles in the automotive sector. 	PO1, PO3, PSO5, PO7
11	2 Wheeler Chassis Model	<ul style="list-style-type: none"> • The 2 Wheeler Chassis Model which represents a motorcycle or scooter chassis, showcasing key components and systems. 	<ul style="list-style-type: none"> • This facility is established to give students an in-depth understanding of two-wheeled vehicle chassis design and engineering. 	<ul style="list-style-type: none"> • Students can examine and analyze the 2 Wheeler Chassis Model, learning about the structural elements, suspension, and mechanical systems found in two-wheeled vehicles. 	<ul style="list-style-type: none"> • 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	<p align="center">Previous Semester Projects Models & Reports</p>	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • Improved project development and documentation skills. • Enhanced problem-solving and critical thinking abilities. • Deeper understanding of mechanical engineering concepts and practical applications. 	<p align="center">PO1, PO2, PO3, PS01, PS02, PS03</p>
13	<p align="center">Display Charts</p>	<ul style="list-style-type: none"> • This facility includes visually engaging charts covering various mechanical engineering topics. • Charts complement the curriculum and are designed for interactive learning. 	<ul style="list-style-type: none"> • To enhance visual learning and understanding of complex mechanical concepts. • To create an engaging and interactive learning environment. • To support students' exploration of 	<ul style="list-style-type: none"> • Students can use the charts during lab sessions to reinforce theoretical knowledge. • Charts facilitate discussions, explanations, and interactive learning. • They serve as quick references 	<ul style="list-style-type: none"> • Improved visual and conceptual understanding of mechanical engineering topics. • Enhanced problem-solving skills through visual representation of problems. • Increased 	<p align="center">PO1, PO2, PO4, PO5</p>

			theoretical concepts through visual aids.	for key concepts.	engagement and participation in lab activities.	
14	NPTEL Video Lectures	<ul style="list-style-type: none"> • This facility provides access to a collection of NPTEL (National Programme on Technology Enhanced Learning) video lectures. • The videos cover a variety of mechanical engineering topics. 	<ul style="list-style-type: none"> • To supplement classroom learning with expert-led video content. • To offer an additional resource for understanding complex topics. • To facilitate self-paced learning and revision. 	<ul style="list-style-type: none"> • Students can watch video lectures to reinforce classroom learning. • The videos offer in-depth explanations of complex concepts. • Students can use them for self-study and exam preparation. 	<ul style="list-style-type: none"> • Improved understanding of complex mechanical engineering concepts. • Enhanced problem-solving abilities through expert guidance. • Increased flexibility in learning and study methods. 	PO1, PO2, PO7

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)

No. of Computer terminals	Students Computer Ratio	Details of Legal Software	Details of Networking	Details of Printers, Scanners etc.
60	1:1	Fusion 360 2022 SV, AUTOCAD 2022 SV, QCAD, Open foam, 3DS max SV	ISHAN-50Mbps (Primary), BIG-DATA-40Mbps (Secondary)	Projector, Speakers, Printer

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 places 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. 1204 A.

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.

Language Lab Availability:	Yes
Lab location:	I Floor Room No. 1109
No. of students per setup (Batch Size)	30
Weekly utilization status (all the courses for which the lab is utilized)	5 Days
Software Used : (Attach Bill Copy)	ORELL Talk Smart Version
Faculty Guidance:	Mr. Sunny Kumar

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:

Criterion 7

Continuous Improvements

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)

POs	Target Level	Attainment Level	Observations
PO 1: Basic and Discipline-specific knowledge			
PO1	2.63	2.43	Students demonstrated a deficiency in applying knowledge of basic mathematics, science, and engineering fundamentals, resulting in an attainment value of 2.43, falling short of the target value of 2.63.
<p>Action1:</p> <ul style="list-style-type: none"> Enhance mathematics and science courses with extra support like Bridge Courses, Remedial classes and Assignments for students to build a strong understanding of fundamental concepts. <p>Action2:</p> <ul style="list-style-type: none"> Emphasize hands-on learning with lab exercises, projects, and real-world case studies, aligning with the engineering specialization to improve knowledge application. <p>Action3:</p> <ul style="list-style-type: none"> Regularly assess and provide feedback to identify areas where students are facing difficulties in both basic and discipline-specific knowledge, enabling timely intervention and support. 			
PO 2: Problem analysis			
PO2	1.51	1.38	The attainment value of 1.38 suggests unsatisfactory performance in identifying and analyzing well-defined engineering problems using codified standard methods, falling short of the target value of 1.51.
<p>Action 1:</p> <p>Remedial Classes and Retesting:</p> <ul style="list-style-type: none"> Organized additional classes to address specific problem-solving skills. Offered retesting opportunities to help students reinforce their problem analysis abilities. 			

Action 2:

Peer Group Support:

- Encouraged students to form study groups to collaborate on problem-solving exercises.
- Fostered a culture of mutual support among peers for problem analysis.

Action 3:

Involvement of Subject Teachers:

- Facilitated regular interaction with subject teachers for guidance and clarification.
- Subject teachers provided one-on-one assistance to students facing challenges in problem analysis.

PO 3: Design/ development of solutions

PO3	1.73	1.61	The attainment value of 1.61 indicates a slightly low performance in students' ability to acquire the necessary skills for designing solutions to engineering problems, falling short of the target value of 1.73.
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Action 1:

- 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.

PO 4: Engineering Tools, Experimentation and Testing

PO4	1.76	1.63	The attainment value of 1.63 indicates moderately low and furthermore, there is a recognized need for tool and resource upgrades to align with industry standards and research requirements.
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Action 1:

- 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:			
<ul style="list-style-type: none"> 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. 			
PO 5: Engineering practices for society, sustainability and environment			
P05	1.64	1.54	The attainment value of 1.54 indicates low performance, highlighting the need for increased awareness among students regarding professional engineering practices in these areas.
Action 1:			
<ul style="list-style-type: none"> 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:			
<ul style="list-style-type: none"> 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. 			
PO 6: Project Management			
P06	1.68	1.53	The attainment value of 1.53 indicates moderate performance. However, there is a need for improvement, particularly in planning, allocating responsibilities, setting timelines, and enhancing overall management skills to meet the target value of 1.68.
Action 1:			
<ul style="list-style-type: none"> Encouraged student participation in project contests and technical events to develop leadership skills and project management abilities. 			
Action 2:			
<ul style="list-style-type: none"> Implemented a mentorship program where experienced faculty members guide students in managing engineering projects effectively. 			
PO 7: Life-long learning			
P07	1.79	1.66	The attainment value of 1.66 indicates slightly low performance in

			the ability to analyze individual needs and engage in updating knowledge in the context of technological changes for life-long learning.
<p>Action 1:</p> <ul style="list-style-type: none"> • Provide students with online courses from institutions like Spoken tutorial, IIT Bombay, and CISCO for self-paced learning and staying updated with technology. <p>Action 2:</p> <ul style="list-style-type: none"> • Encourage students to take part in external technical competitions, conferences, and events to promote lifelong learning beyond the classroom. 			
PSO 1: Ability to develop and implement innovative ideas in the area of product development with the help of modern CAD & 3D printing tools.			
PSO1	1.59	1.50	The attainment value of 1.50 indicates a moderate level of performance in developing and implementing innovative ideas in the area of product development using modern CAD & 3D printing tools, approaching the target value of 1.59.
<p>Action 1:</p> <p>Enhanced Training:</p> <ul style="list-style-type: none"> • The department has intensified training programs on modern CAD and 3D printing tools to equip students with advanced skills and foster innovation in product development. <p>Action 2:</p> <p>Research Integration:</p> <ul style="list-style-type: none"> • Encouraging faculty and students to integrate CAD and 3D printing in their research projects to promote a culture of innovation and continuous improvement. 			
PSO 2: Ability to achieve excellence in the domain of Computer Numerical Control (CNC) operations.			
PSO2	1.53	1.37	The attainment value of 1.37 indicates a moderate level of performance in achieving excellence in the domain of Computer Numerical Control (CNC) operations, approaching but not fully meeting the target value of 1.53.

<p>Action 1: Enhanced Training Programs:</p> <ul style="list-style-type: none"> The department has initiated an enhanced training program for students, focusing on advanced CNC techniques, machine programming, and automation. This will ensure that students are better equipped to achieve excellence in CNC operations. 			
<p>PSO 3: Ability to achieve excellence in advanced manufacturing skills for various industrial sectors.</p>			
PSO3	1.81	1.72	<p>The attainment value of 1.72 indicates low performance in achieving excellence in advanced manufacturing skills for various industrial sectors, not meeting the target value of 1.81.</p>
<p>Action 1:</p> <ul style="list-style-type: none"> Conducted a comprehensive review of the existing curriculum to identify gaps in advanced manufacturing skill development. <p>Action 2:</p> <ul style="list-style-type: none"> Increased collaboration with industry partners to facilitate internships and hands-on training opportunities for students. <p>Action 3:</p> <ul style="list-style-type: none"> Introduced a series of workshops and seminars on cutting-edge manufacturing technologies to enhance students' practical skills and knowledge. 			

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 minus 2 (2018-19)
Success Index (from 4.2.1)	0.13	0.03	0.16

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 minus 2 (2018-19)

Placement Index (from 4.6)	1.14	1.03	1.00
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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 minus 2 (2018-19)
Academic Performance Index (from 4.3)	8.44	6.90	8.39

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

Items	2022-23 (CAYm1)	2021-22 (CAYm2)	2020-21 (CAYm3)
Internal Academic Audits	3	4	3

7.6 New Facility created in the Program (10)

Items	2022-23 (CAYm1)	2021-22 (CAYm2)	2020-21 (CAYm3)
New Facility Created	TIG Welding Machine Setup	3D Printing Lab, Internet connections to classrooms, Introduce CMS for student Academic performance	Smart Board in Classroom

Institute Level Criteria

Criterion 8

Student Support System

8 STUDENT SUPPORT SYSTEMS

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

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

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

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

Write Answer:

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

Type of Mentoring:

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

Faculty Involvement:

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

Student-to-Mentor Ratio:

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

Frequency of Meetings:

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

Contact Hours:

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

Specific Mentor Profile:

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

This profile encompasses:

Personal Details:

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

Academic & Non-Academic Performance:

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

Attendance Performance:

- Tracking attendance to identify potential issues or patterns.

Parents Interaction:

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

Non-Compliance Details:

- Addressing any non-compliance issues or disciplinary concerns.

Mentor-Mentee Meeting Details:

- Documenting the progress and outcomes of each mentoring session.

Efficacy of Our Mentoring System:

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

Improved Academic Performance:

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

Enhanced Career Prospects:

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

Personal Growth:

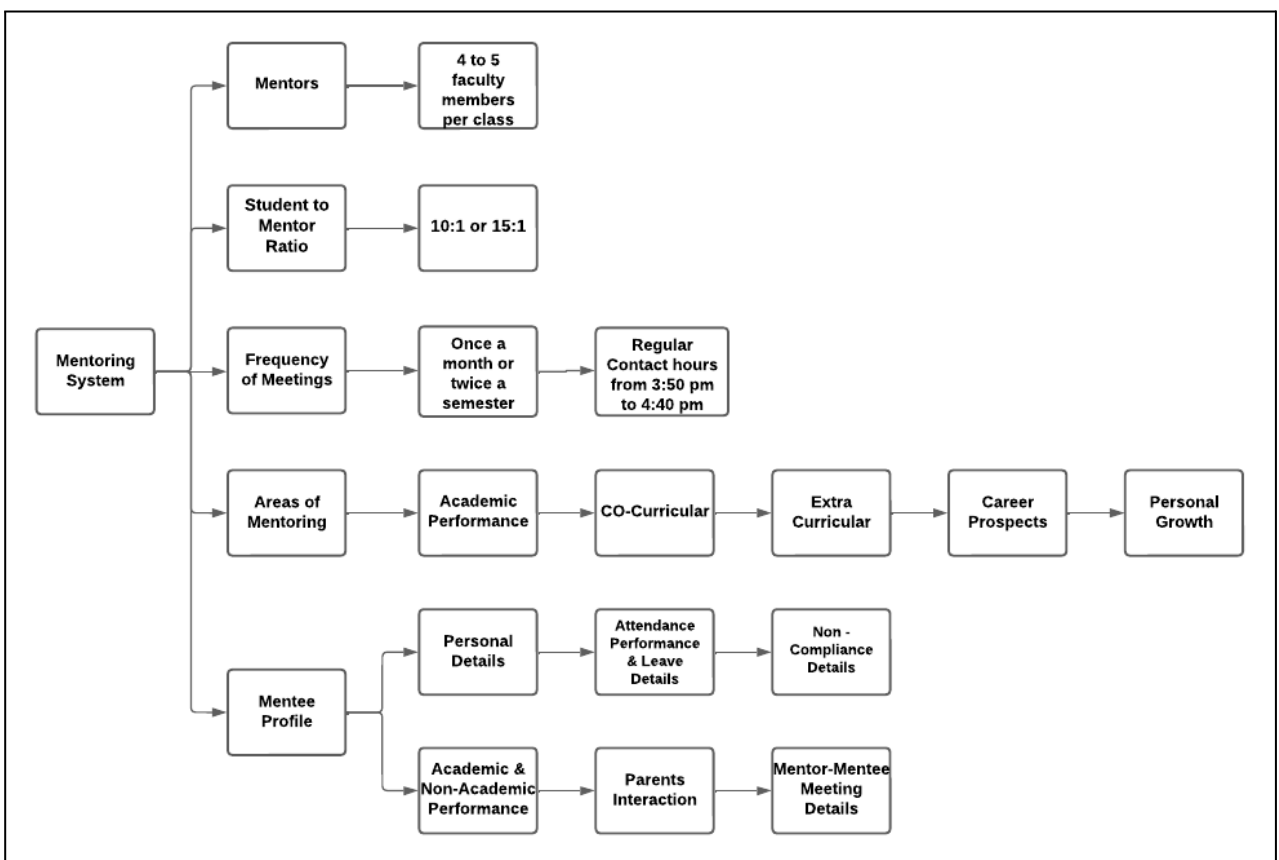
- The all-round development aspect of our mentoring system fosters personal growth, including improved communication skills, confidence, and leadership abilities.

Retention and Satisfaction:

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

Early Intervention:

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



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

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

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

A. Methodology being followed for feedback collection, analysis and its effectiveness (5)

Write Answer:

Introduction to the feedback collection on teaching & learning:

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

Feedback collected for all courses: **YES**

Specify the feedback collection process:

Direct Feedback from the Students:

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

Interactive Feedback:

- In addition to online feedback, key academic figures who 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 VMEDULIFE:

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

Feedback Compilation:

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

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

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

✓ Recommended for the Best Faculty Award:

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

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

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

✓ **Documentation of Performance Improvements:**

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

✓ **Enhancing Teaching Methodologies:**

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

✓ **Encouragement for Professional Development:**

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

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

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

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

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

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

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

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

Communication of Corrective Actions:

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

Intermediary Involvement:

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

Timing of Corrective Actions:

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

Meticulous Documentation:

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

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

8.3 Feedback on facilities (5)

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

Write Answer:

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

Student Feedback on Facilities:

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

Suggestion Box:

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

Online Feedback Form:

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

Feedback Categories:

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

Other Stakeholder Feedback:

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

Alumni Feedback:

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

Parent Feedback:

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

Reporting Issues:

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

Analysis and Corrective Action Taken:

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

Feedback Analysis:

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

Action Plan and Budget Proposal:

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

Prioritization:

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

Major Issues Resolved:

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

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

At GEMS Polytechnic, we are committed to continually enhancing our facilities based on feedback from our valued stakeholders, ensuring a supportive and conducive learning environment for all.

8.4 Career Guidance, Training, Placement (20)

A. Availability (05)

B. Management (10)

C. Effectiveness (05)

(The institution may specify the facility, its management and its effectiveness for career guidance including counseling for higher studies, campus placement support, industry interaction for training/internship/placement, etc.)

Write Answer:

A. Availability:

At our institution, we are committed to providing holistic support to our students' career aspirations. To achieve this, we have established two dedicated cells:

Career Guidance & Higher Education Cell:

This cell focuses on offering comprehensive career counseling and guidance services, helping students make informed decisions about their academic and professional paths. We also assist students in gaining admission to renowned higher education institutions.

Career Guidance & Higher Education Cell Constitution:

Sl.No	Role	Name of the Members	Designation
1	Convenor	Mr. Rama Gopal Challa	Principal
2	Co-Convenor	Mr. Ranjith Choudary	Dean of Academics
3	Co-ordinator	Ms. Jensika Rani	Sr.Lecturer/ CIVIL
4	Committee Chair	All HoDs	
5	Internship Co-ordinator:	All Department TPOs	
6	Department Counselor	Mrs. Chinthiya	Lecturer/ CIVIL
7		Mr. Sanjeeva	Lecturer/ EE
8		Mr. Ragunath	Lecturer/ EEE
9		Ms. Meena Kumari	Lecturer/ CSE
10		Mr. Himanshu Kumar Singh	Lecturer/ MECH

Training and Placement Cell:

Our exclusive Training and Placement Cell is designed to continuously enhance our students' skills and assist them in securing suitable employment opportunities while they are still pursuing their studies.

Training and Placement Cell Constitution:

Sl.No	Role	Name of the Members	Designation
1	Convenor	Mr. Rama Gopal Challa	Principal
2	Co-Convenor	Mr. Ranjith Choudary	Dean of Academics
3	Co-ordinator	Ms. Jensika Rani	Sr.Lecturer/ CIVIL
4	Committee Chair	All HoDs	
5	Industry Liaison Officer	Ms. Jensika Rani	Sr.Lecturer/ CIVIL
6	Training Coordinator	All Department TPO	
7	Department-wise data analyst	All Department TPOs	
8	Department Counselor	Mr. Sujin	Lecturer/ CIVIL
9		Mr. Anugrah Ashish	Lecturer/ EE
10		Mr. David	Lecturer/ EEE
11		Ms. Kumar	Lecturer/ CSE
12		Mr. Johan	Lecturer/ MECH

B. Management:**1. Career Guidance:****Career Counseling by Experts:**

- Our students benefit from guidance provided by senior academicians and industry experts who help them navigate the complex world of career choices.

Industry Interaction:

- To provide real-world insights, we regularly invite human resource personnel from various industries to interact with our students, ensuring they are well-prepared for the job market.

Higher Education Support:

- We guide and support students in their quest to secure admissions in esteemed higher education institutions, helping them advance their academic journeys.

2. Training and Placement Cell:

Training Facilities:

- Our Training and Placement Cell is equipped with state-of-the-art facilities and offers a range of training programs.
- These include soft skills development, confidence-building, and personality development workshops, all conducted by professional experts.

Industry Exposure:

- We encourage students to directly engage with industry professionals to explore potential career opportunities.
- This exposure helps them understand industry expectations and requirements.

Skill Development:

- To enhance employability, we provide skill-based training in technical, analytical, and logical areas.
- Our students receive training from both internal trainers and industry experts.

Student Engagement:

- Beyond traditional training, we encourage students to participate in various events such as paper presentations, technical symposia, and project displays.
- These activities foster innovative thinking and enhance managerial skills.

Value-added Courses:

- Each department conducts value-added courses in its specialized areas to bridge any gaps in the curriculum, ensuring that our students are well-prepared for their chosen fields.

Placement Activities:

Department Coordinators:

- Each department appoints a coordinator responsible for addressing career guidance and training needs within that department.

Training and Placement Officer (TPO):

- Our TPO collaborates with department coordinators to formulate and execute placement strategies, ensuring that students are well-prepared for the job market.

Industry Databases:

- We provide students with access to industry databases, empowering them to make informed decisions about their careers.

List of Training Activities for Placements:

1. Self-Introduction - practical & training
2. Communication and Interactive skills
3. The art of survival in the workplace
4. Group Discussion – 1
5. Overview of Entrepreneurship, Start-up and Core company details and recruitment
6. Group Discussion – 2
7. Resume and CV preparation
8. Personality Development
9. Mock Interview – 1
10. Mock Interview – 2
11. Comments and Feedback, any lacking topic can be overviewed

C. Effectiveness:

- The effectiveness of our Career Guidance Cell & Training, Placement Cell is evident through the successful placement of our students in esteemed organizations.
- Our students consistently demonstrate enhanced skills, confidence, and readiness for the workforce.
- We measure our effectiveness through placement rates, feedback from both students and employers and the continued growth and success of our alumni in their chosen fields.
- We remain dedicated to continually improving our services to ensure the ongoing success of our students.

List of our Recruiters

 <p>WINDCARE INDIA Private Limited</p>	 <p>GLOBAL COMPOSITE</p> <p>GLOBAL COMPOSITE UAE</p>	 <p>APOLLO TYRES LTD</p> <p>Apollo Tyres Pvt Ltd</p>	 <p>Dhoot Electrical Systems Pvt. Ltd. <i>Increasing Safety Through Smart</i></p> <p>Dhoot Transmission Pvt Ltd</p>
 <p>Qcon <i>Qatar Engineering & Const.Co. WLL</i></p> <p>Qcon - Qatar Engineering & Construction Company W.L.L</p>	 <p>ANAND GROUP</p>	 <p>SHREE CEMENT LIMITED</p>	 <p>UKB ENERGY CONNECTIONS</p>
 <p>KP Reliable technique India Pvt Ltd</p>	 <p>JK RAVINDRA & TATA MOTORS</p>	 <p>Sagar Informatics Pvt. Ltd. <i>We Cultivate your knowledge</i></p> <p>SHREE CEMENT</p>	 <p>shiv-om brass industries</p>
 <p>DHARMARAJ & ENGINEERING AND CON</p> <p>DHARMARAJ & SONS ENGINEERING & CONSTRUCTION</p>	 <p>Nobel Hygiene</p>	 <p>sgk INDIA www.sgkindia.com</p>	 <p>THE IMPERIAL ASSURANCE LIMITED</p> <p>THE IMPERIAL ASSURANCE LIMITED</p> <p>RELIABLE, TRUSTED AND PERFORMANCE</p>
 <p>GABRIEL</p>	 <p>DANA</p>	 <p>AMEM Automotive Mobility</p>	 <p>BAJAJ MOTORS</p>
 <p>Layam Layam Group</p>	 <p>FOODWORKS</p>	 <p>MICRO TURNERS</p>	 <p>MICRO TURNERS</p>

Placement Details								
Acedamic Year	Department	No. of Final Year Students	Total No. of Final Year Students	No. of students placed in companies or Government Sector	No. of students admitted to higher studies	No. of students turned entrepreneur	Total Number of Students	Over all %
2020 - 2023 (LYG)	CIVIL	42	137	42	0	0	130	95%
	CSE	26		24	2	0		
	EE	23		23	0	0		
	EEE	23		16	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

- Entrepreneurship Cell initiatives at GEMS Polytechnic College are conducted within the framework of the **Institutions Innovation Council (IIC)**.
- The Institutions 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 Educations 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 prototyping and experimentation.
- Moreover, the council maintains strong networks with industry experts, mentors, and venture capitalists to provide students with expert guidance.

B. Management

- The management of the IIC is characterized by a commitment to fostering innovation and entrepreneurship at Gems Polytechnic College.
- A team of experienced faculty members, innovation experts, and business professionals oversee the council's activities.
- This diverse team ensures that students receive well-rounded guidance, from the technical aspects of innovation to the intricacies of business development.
- Furthermore, the IIC holds regular meetings and workshops to evaluate the needs of students and create tailored support plans for budding entrepreneurs.
- This proactive management approach ensures that every student's entrepreneurial journey is adequately supported.
- The council also maintains an open-door policy, encouraging students to reach out for guidance and mentorship whenever they require it.

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

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

28	Mr. Deepraj Kumar-EEE 2nd Year	Member
29	Mr. Raushan Kumar-EEE 2nd Year	Member
30	Ms. Kirti kumari verma-EEE 2nd Year	Member
31	Mr. Raj Kumar- EE 3rd Year	Startup Coordinator
32	Ms. Sneha Kumari- EE 3rd Year	Internship Coordinator
33	Mr. Suryamani Kumar- EE 2nd Year	Innovation Coordinator
34	Mr. Sumit Kumar- EE 2nd Year	Member
35	Mr. Omprakash Singh-EE 1st Year	Member
External Member:		
36	Mr. Vishal Nair, Co-Founder, 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 & innovation, highlight the value of entrepreneurship, the role of innovation within society and role of younger generations for making India as an Innovation hub, expert talk, literary event, awards, demo of innovations	Mr.Victor Immanuel Mr. Robin
A.5	Workshop on Design Thinking, Critical thinking and Innovation Design	one/half day	min 40 students, max faculty	Design thinking, critical thinking, innovative design, Q&A	Mr.Victor Immanuel Mr.Prabhunath
A.6	Workshop on Entrepreneurship Skill, Attitude and Behaviour Development	one day	min 40 students, max faculty	Presentation entrepreneur skill, attitude, behaviour	Mr.Kumar S Mr. Bhaskar Ranjan
A.7	Organise an Inter/Intra Institutional Innovation Competition/Challenge/Hackathon and Reward Best Innovations - Manage through YUKTI-NIR	one day	max students possible, max faculty	innovation competition, brochure with start date and end date, registration, evaluation, results, award ceremony	Mr.Ragunath Mr Johan Deva Raj
A.8	Organise an Expert talk on Process of Innovation Development, Technology Readiness Level (TRL); Commercialisation of Lab Technologies & Tech-Transfer	one day	min 40 students, max faculty	Innovation Development, Technology Readiness Level (TRL); Commercialisation of Lab Technologies & Tech-Transfer	Mr.Kumar S Mrs. Catherine
C.2	National Energy Conservation Day (India)-celebration	one/half day	min 50 students, max faculty	india's contribution towards energy efficient nation, global warming & climate change awareness, encourage innovative solutions, motivate save energy, visual art, inviting expert, reward innovative ideas	Mr.Prabhunath Mr. Bhaskar Ranjan
C.3	National startup day-celebration	one/half day	min50 students, max faculty	indian startup ecosystem, encourage people who create environment for startup, startup founder interaction, startup exhibition	Mr.Ragunath Mr Victor Immanuel

IMPACT LECTURE SESSION on Innovation and Entrepreneurship:

GEMS Polytechnic College, Aurangabad, Bihar, organized an impactful lecture series on Innovation and Entrepreneurship as part of the MoE's IIC, AICTE Sponsored program. The event, held on July 19, 2022, featured distinguished speakers. Joseph Paul Arackalan, Manager of Incubation Centre IIT Patna, presented on "Innovation and Entrepreneurship," followed by Mahendra Kumar Gupta, Founder of Udyamita Sanskar Foundation, who discussed "Entrepreneurship Ecosystem and Journey to Start-up." The lectures aimed to inspire faculty members, students, and anyone interested in innovation. E-certificates was provided to participants.

Innovation Ambassador Training at GEMS Polytechnic College, Bihar

Foundation Level Training (June 30 - July 30, 2021):

Bhaskar Ranjan from GEMS Polytechnic College, Bihar, successfully completed the Innovation Ambassador training at the Foundation Level. The training, consisting of 16 sessions with a total of 30 contact hours, was conducted online by MoE's Innovation Cell & AICTE. Ranjan's participation reflects a commitment to fostering innovation within the academic community.

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 devices all policies and decisions related to both academic and administration.

- To ensure the efficiency and effectiveness of the governing council, a number of academic and administrative bodies have been formed with duties and responsibilities.
- The governing council of the college meets in a year, to discuss various issues and aspects contributing to the development of the college.
- During the meeting the suggestions from the planning and monitoring board are resolved. It chalks out a roadmap in order to achieve the goals of the institution.

Functions of Governing Council:

- Amend and approve policies from time to time.
- To Uphold the legal stature of the college in line with the policies of AICTE, State Government and affiliating board (SBTE, Bihar) or any other board SBTE, Bihar.
- Construction and maintenance of infrastructure and amenities for the institution.
- Review of academic performance of the institution and suggest remedial measures, if required.
- Mobilizes funds and utilizes the resources maximum, towards the development of the institution.
- Introduction of new programs and/or increasing intake/closure of programs/reduction in intake.
- Implement the recommendations of the planning and monitoring board.
- Review of highlighted feedback summary of stakeholders and planning for corrective actions towards the satisfaction of stakeholders.

Composition of Governing Council:

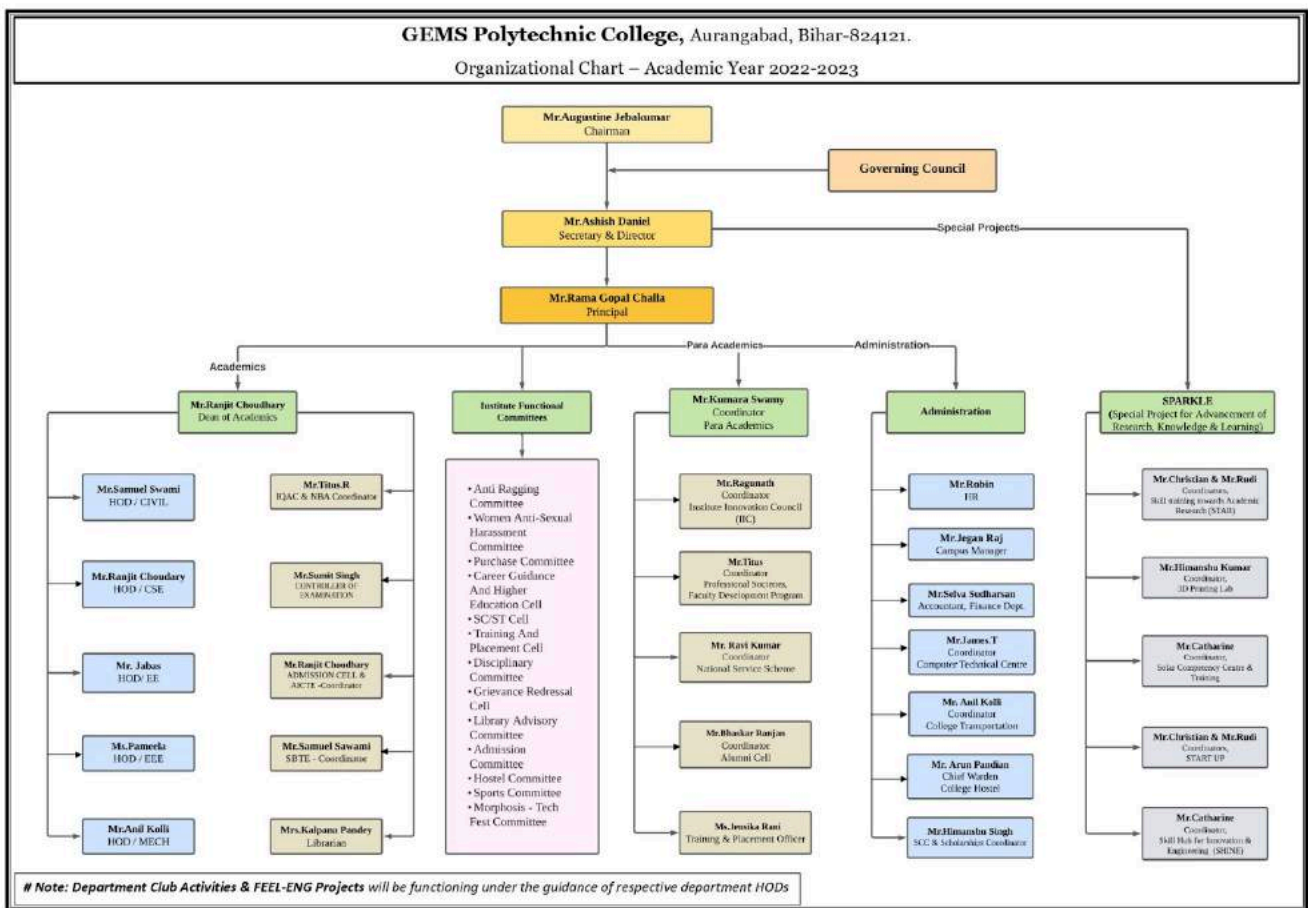
Sl.No	Name	Affiliation	Position
Members nominated by the Trust/Management :			
1.	Mr.Augustine Jebakumar	General Secretary, GEMS	Chairman
2.	Mr.Ashish Daniel	Secretary, GPC	Member
Educationist / Industrialist to be nominated by the Management :			
3.	Dr. B. Priestly Shan	Pro Vice Chancellor, Academic Affairs at Alliance University, Karnataka	Member
4.	Dr. G. Bansal Rajkumar	Principal, Sri Krishna Polytechnic College, Coimbatore, Tamil Nadu.	Member
5.	Dr. Samrajesh Devakadacham	Professor, Department of Computer Science and Engineering, Kuwait College of Science and Technology, Kuwait	Member
6.	Dr. Vijayalaxmi biradar	Director IQAC Kalinga University Raipur, Chhattisgarh	Member
7.	Mr.Kirupakaran Samuel Asir	Reliability Engineer - Planning & Reliability, Qatar Aluminum (Qatalum)	Member
Principal of the College:			
8.	Mr.Ramagopal Challa	Principal	Ex - officio Member Secretary
Members nominated by the Director/ Principal :			
9.	Mr. Ranjit Choudhary	Dean of Academics	Member
10.	Mr.Titus	NBA Coordinator	Member
Affiliating Board nominee (nominated by the Board):			
11.	Dr.Sanjay Kumar	Assistant Secretary, SBTE, Bihar	Ex - officer member

Administrative Body:

Organizational Setup:

The organizational setup of GEMS Polytechnic College is designed to ensure efficient governance and leadership. At the helm is the Principal, overseeing daily operations, guided by the Director and Chairman. The pivotal decisions are shaped collectively by the experienced Governing Council, as depicted in the organizational chart. This collaborative structure fosters effective management and strategic direction for the institute.

Administrative chart shows the hierarchy setup in the college:



Internal Quality Assurance Cell (IQAC):

The Internal Quality Assurance Cell (IQAC) is a cornerstone of GEMS Polytechnic College's commitment to academic excellence and continuous improvement. IQAC plays a pivotal role in enhancing the teaching-learning process and ensuring that the institution adheres to high-quality benchmarks and parameters. Here, we delve into the functions and composition of the IQAC at GEMS Polytechnic College.

Functions of IQAC:**Creating a Quality Culture:**

- One of the primary functions of the IQAC is to instill a culture of quality throughout the institution.
- This involves setting standards, monitoring adherence to these standards, and fostering a commitment to excellence among all stakeholders.

Assessment of Teaching-Learning Processes:

- The IQAC conducts a thorough assessment of the effectiveness of teaching and learning methods.
- This ensures that students receive a high-quality education that aligns with the institution's mission and vision.

Review and Assessment of Action Taken Reports:

- The IQAC reviews and assesses Action Taken Reports related to course and program outcomes.
- This process helps in identifying areas that require improvement and tracking the progress of corrective measures.

Assessment of Feedback Responses:

- Gathering feedback from students, parents, alumni, and other stakeholders is integral to maintaining quality.
- The IQAC analyzes this feedback to identify areas for enhancement and to ensure that the concerns and suggestions of all constituents are addressed.

Coordination of Quality-Related Activities:

- The IQAC acts as a central agency within the institution for coordinating quality-related activities.
- This includes the adoption and dissemination of best practices in education and administration, promoting a culture of innovation and excellence.

Composition of the IQAC:

The IQAC at GEMS Polytechnic College is a diverse body composed of individuals who bring varied perspectives and expertise to the quality assurance process. The composition of the IQAC includes:

- Senior Leaders of the Institution: To provide strategic guidance and leadership.
- Senior Faculty Members from Each Department: To ensure representation from all academic areas.
- Students: To incorporate the perspectives of the primary beneficiaries of education.
- Alumni: To bring insights from graduates who have experienced the institution's offerings.
- Society and Industry Representatives: To bridge the gap between academia and real-world requirements, fostering relevance and alignment with industry needs.

S. No	Role	Designation	Name
1.	Chairman	Director	Mr. Ashish Daniel
2.	Senior Administrative Officers	Principal	Mr. Rama Gopal Challa
		Dean of Academics	Mr. Ranjit Choudhary
		NBA Coordinator	Mr. Titus.R
4.	Members	Head of the Departments	Mr. Anil Kolli, HoD/ MECH
			Mr. Jabas Edwin Raj, HoD/EE
			Ms. Pameela, HoD/ EEE
			Mr. Samuel Prakash Swami, HOD/CE
			Mr Ravi Kumar Saksena HOD(I/c) / CSE.
		Faculties to represent all levels	Mr. Sumit Kumar Singh, COE
		Mr. Robin, HR & Sr. Lecturer, EEE	
5.	Nominee from	Local Society	Grama Panchayat, Sarpanch
		Students	Rimjhim Kumari, CSE
		Alumni	Ms Nargis Parween, JE, DoR & LR, Govt. of Bihar.
6.	Nominee from	Employers	Mr.P Jebastian, HR, Manager, Windcare Pvt Ltd-Chennai
		Industrialists/ Stakeholders	Mr.Arunjay Kumar, 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 a quality culture and adapt best practices in academics to keep the pace with changing educational environment and expectations and support the departments to achieve the vision by remaining up to date with the latest requirements of the industry and incorporating necessary components in the curriculum to the furthest extent.
- The PAC consists of the HoD, Senior faculty members, The Dean (Academics), and the NBA coordinator Department's faculty members, Student Representatives, Alumni Members, and Industry Experts to periodically monitor departmental activities and evaluate parameters related to teaching-learning process and offer suggestions for the continuous improvement.

Functions of Program Advisory Committee (PAC)

The PAC gives guidelines to the department related to the following areas:

- Formation/Revision of the Vision and Mission of the Department
- Formation of Program Educational Objectives.
- Redefine existing PEOs, aligning of PEO's to the mission statements and defining program-specific outcomes.
- Formulation of workable solutions for improvement in the following areas
- Quality of Teaching Learning Process
- Industry Institution Interaction.
- Increase the employability of students.
- Inclusion of topics beyond the syllabus to meet the PEO and PO and bridge the existing gap by encouraging students to do additional experiments in labs and through expert talks in areas beyond the scope of the syllabus.
- Suggest improvement in academic plans and recommend standard practices/systems for attainment of PEOs.
- Encourage for industry-institute interactions to bridge up curriculum/industry gap and suggest quality improvement initiatives to enhance employability.
- To propose necessary action plans for Student projects, value-added training courses, internships, and skill development of students, required for entrepreneurship development and quality improvement to meet PEOs. Monitoring the attainments of Program Outcomes (POs), Program Specific Outcomes (PSOs) and Program Educational Objectives (PEOs).
- Evaluating program effectiveness and proposing necessary changes.
- Measuring the extent of adherence to planned activities and calendar of events.
- Suggesting ways and means to reduce the curriculum gaps in achieving POs and PSOs.
- Preparing periodic reports on program activities, progress, status or other special reports for management.
- **Faculty motivation:** Attend / organize workshop / seminar / FDP, paper publication, development of models / lab.
- **Student motivation:** Attend/participate in technical competitions, paper presentation, mini projects/models, social / cultural events, skill development programs.
- Interacting with students facilitating the attainment of POs, PSOs and PEOs.
- Interact with stakeholders and PAC to facilitate the attainment of POs, PSOs, and PEOs.

PAC Composition:

The PAC consists of members hailing from prestigious institutions and industry experts. It includes representation from alumni, departmental Heads, Senior faculty, and student representatives across all academic years. Additionally, the composition comprises the dean of academics and the NBA coordinator. The present composition of the PAC is as follows:

Sl.No	Name	Affiliation	Position	Email Id & Mobile Number
1.	Anil Kolli	Head of the Department	Convenor	anil@gemspolytechnic.edu.in 9488081778
2.	Mr.Ranjit Choudhary	Dean of Academics	Member	academicdean@gemspolytechnic.edu.in 8124517713
3.	Mr.Titus R	NBA Coordinator	Member	nba@gemspolytechnic.edu.in 9304706901
4.	Mr.Sudhir kumar	Dept. Senior Faculty Representative	Member	sudhir@gemspolytechnic.edu.in 7667548754
5.	Mr. Arun Pandian	Dept. Senior Faculty Representative	Member	arun@gemspolytechnic.edu.in 8838985358
6.	Mr.Abshiek kumar	Industry Representative	Member	abhishek15389@gmail.com 7044891201
7.	Mr. MD Sarfarz alam	Academia Representative	Member	sarfaraz45@gmail.com 9424431664
8.	Mr.Afnan Ahmad	Alumni Representative	Member	Afnanahmad013@gmail.com 6203359852
9.	Mr.Abhishek kumar	2nd Year Student Representative	Member	Abhishek22me15@gemspolytechnic.edu.in 7634983129
10.	Mr.Anand Pandey	3rd Year Student Representative	Member	Anand21022@gemspolytechnic.edu.in 9939028840

B. Minutes of the meetings and action-taken reports (01)**Write Answer:**

At GEMS Polytechnic College, meticulous records of the minutes of meetings and action-taken reports are diligently maintained. This includes records from the governing body, the administrative setup, and the functions of various bodies. Furthermore, it encompasses the documentation of defined rules and procedures, recruitment and promotional policies. These records are preserved under the supervision of the

respective faculty incharges, ensuring transparency, accountability, and effective decision-making throughout the institution's operations.

C. The published service rules, recruitment and promotional policies and procedures with year of publication (01)

Write Answer:

Service Rules:

Staff Leave Policies (Version 3.1):

Leave-Policy Term:

The following Leave Policy is applicable for the period from July 1, 2023, to June 30, 2024.

Eligibility:

- All regular full-time teaching faculties of our Institution are eligible to apply for leaves as outlined in this policy. This will be subject to the condition that leave can't be claimed as a matter of right and leave sanctioning authority may refuse or revoke leave of any kind except on medical grounds.

Request & Approval:

- The teaching faculties must submit a leave application through the designated leave management system (VMEDULIFE Software) to their Head of the Department well in advance, with reasonable notice.
- The leave application should be submitted in advance, except in cases of unforeseen circumstances or emergencies.
- Approval is subject to the operational needs of the institution and may be granted at the discretion of the management.
- The teaching faculties are expected to return to work promptly upon the completion of their approved leave. Any leaves taken with permission beyond the allotted or approved leave would be considered a Loss Of Pay (LOP).
- Kindly refrain from requesting "Loss of Pay (LOP)" as there is no category or provision for it.
- Failure to complete the biometric attendance entry will result in faculty being considered to be leave, such failures can be corrected on vmedulife upto twice a month.

Employees in their notice period cannot request or take any leave.

Reimbursement:

- Round-trip Travel Allowance (TA) will be provided to all individuals whose hometown is located more than 500 km away.

Policy Category:

The leave policy is structured into the following categories:

- Teaching Faculty
- Librarian, Accountant, Clinical Staff
- Non-Teaching Faculty & Office Assistant

Leave Policy - Teaching Faculty:

Types of Leave	Allotted days	Approval Authority	Remarks
Casual Leave (CL)	12	HoD & Dean of Academics	1 CL will be credited every month that can be accumulated and up to 3 days availed at a time. 2 CL will be approved by HOD More than 2 CL will be approved by the Dean of Academics.
Medical Leave (ML)	6	HoD & Dean of Academics	Less than 3 days can be approved by HOD CL and 3ML can be clubbed during emergencies and needs Dean's Approval.
On Duty (OD)	-	Dean & Principal	The institution will grant on-duty leave for tasks associated with purchasing, promotions, and official meetings (<i>SBTE, AICTE, DRCC etc.</i>)
Bereavement Leave (BL)	3- 6	Principal/ Director	In the case of a death in the immediate family. 3 days for travel less than 500km and 6 days for more than 1500km
Special Leave (SL)	8	Dean & Principal	Special leave may be granted when a teaching faculty member wishes to attend or contribute to conferences/ seminars / symposia / practical training/workshops. In or out of India shall be entitled to special leave for up to 8 days in a calendar year. <i>(Please support such applications with the invitation and your contribution to such events)</i>
Maternity Leave (MTL)	90/120	Principal & Director	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 (<i>SBTE, AICTE, DRCC etc.</i>)
Bereavement Leave (BL)	3- 6	Principal/ Director	In the case of a death in the immediate family. 3 days for travel less than 500km and 6 days for more than 1500km.
Maternity Leave (MTL)	90/120	Principal & Director	Maternity leave is up to three months(90 days) and can be taken anytime during the pregnancy or after delivery as per the choice of the particular worker. Anyone who wants to avail leaves before delivery will have a plan within the routine grant of four months only. For Post Delivery Complications, C-section delivery and instrumental delivery, an additional 1 month can be availed. This leave will be paid only if the employee has completed 11 months at GEMS Polytechnic.
Paternity Leave (PL)	3 - 6	Principal & Director	Paternity Leaves may be granted for 3 days before or up to 30 days from the date of delivery of the child. 3 days are granted for staff with travel distances less than 500 km and 6 days for distances greater than 1800 km.
Annual Leave (AL)	25	Principal	The employee who has completed 11 months of service as of the first day of their vacation will be eligible for annual leave. The employee has to be present on the closing date of college and on the opening date of college failing to be present, the number of holidays falling in between will be considered as a Loss of Pay (LOP).
Marriage Leave (MRL)	3 - 6	Principal & Director	Leave allocation is determined by the distance. If the distance exceeds 1500 km, an allotment of 6 days will be provided. Conversely, for distances less than 500 km, a total of 3 days will be allocated.
Late Coming / Early Going	2 per month	HOD	A maximum of two instances of arriving late or leaving early is permitted within a month. Late arrivals up to 50 minutes past 8:45 am will be considered permissible as an instance of late coming. Similarly, early departures between 3:50 pm and 4:40 pm will be considered as an instance

			<p>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)</p>
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Leave Policy - Non-Teaching Staff, Office Assistant:

Types of Leave	Allotted days	Approval Authority	Remarks
Casual Leave (CL)	9	HoD & Dean of Academics	1 CL will be credited every month that can be accumulated and up to 3 days availed at a time. 2 CL will be approved by HOD More than 2 CL will be approved by the Dean of Academics.
Medical Leave (ML)	3	HoD & Dean of Academics	Less than 3 days can be approved by HOD CL and 3ML can be clubbed and needs Dean's Approval.
On Duty (OD)	-	Dean & Principal	The institution will grant on-duty leave for tasks associated with purchasing, promotions, and official meetings (<i>SBTE, AICTE, DRCC etc.</i>)
Bereavement Leave (BL)	3-6	Principal/ Director	In the case of a death in the immediate family. 3 days for travel less than 500km and 6 days for more than 1500km.
Maternity Leave (MTL)	90/120	Principal & Director	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.

Department	Position	Eligibility	Vacancies
Electrical	Lecturer	B. Tech/B.E/M.Tech/M.E in EE/EEE with First Class	1
Mechanical	Lecturer	B. Tech/B.E/M.Tech/M.E in Mechanical with First Class	1
CSE	Lecturer	B. Tech/B.E/M.Tech/M.E in CSE with First Class	1
English	Lecturer	MA in English with First Class	1
Physics	Lecturer	M. Sc in Physics with First Class	1
CSE	HOD	M.Tech/M.E in CSE with minimum 2 years Experience	1

Faculty Recruitment Poster

INTERVIEW EVALUATION

Name of the Candidate :

Qualification :

Date of Interview :

Position :

Department :

Please use the following numbers to indicate the rating.
 5 - Exceptional, 4 - Better than average, 3 - Capable / Average, 2 - Poor, 1 - Not acceptable, N/A - Not observed.

CANDIDATE EVALUATION BY THE INTERVIEWER

S.No.	SKILL	RATING
1	Relevant educational background	
2	Related work experience	
3	Technical Knowledge	
4	Communication / Listening Skills	
5	Attitude / Confidence level	
6	Presentation / Appearance	
7	Stress tolerance	
8	Professional Demeanour	
9	Interpersonal Skills	
10	Integrity	

Overall Impression Rating :

Hiring recommendation after completion of interview : Hire Not Hire

NAME OF THE INTERVIEWER :

DESIGNATION :

SIGNATURE :

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. Ganeshbabu M, Lecturer / EE	LM - 138394	₹3,540.00	₹1,770.00
9.	Mrs. Pameela M, HoD / EEE	LM - 138384	₹3,540.00	₹1,770.00
10.	Mr. Rangunath 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.No.	Name of the Committee / Cell	Coordinators / Person In-charge	Functions and Responsibilities
1	Anti Ragging Committee	Mr.Anil Kolli, HoD/Mech	a. Prevent and address incidents of ragging within the institution. b. Create awareness and educate students about the consequences of ragging and the anti-ragging measures in place.
2	Women Anti-Sexual Harassment Committee	Mrs.Chinthiya, Sr.Lecturer/Civil	a. Ensure a safe and harassment-free environment for women within the institution. b. Investigate and address complaints

			related to sexual harassment and take appropriate actions against the offenders.
3	Purchase Committee	Mr.Arun Pandian, Sr.Lecturer/Mech	a. Manage and oversee the procurement and purchasing processes of the institution. b. Ensure transparency, fairness, and compliance with procurement policies and regulations.
4	Career Guidance And Higher Education Cell	Ms.Jensika Rani, Sr.Lecturer/Civil	a. Provide students with information and guidance on career opportunities and higher education options. b. Organize workshops, seminars, and counseling sessions to help students make informed career and education choices.
5	SC/ST Cell	Mr. David Naik, Lecturer/EEE	a. Promote the welfare and upliftment of students from Scheduled Castes (SC) and Scheduled Tribes (ST). b. Address issues related to the discrimination, harassment, and challenges faced by SC/ST students.
6	Training And Placement Cell	Ms.Jensika Rani, Sr.Lecturer/Civil Mr.Bhaskar Ranjan, Sr.Lecturer/EE	a. Facilitate job placement and internships for students. b. Collaborate with companies and industries to organize campus recruitment drives and provide career development support.
7	Institution Innovation Council (IIC)	Mr. Ragunath, Sr.Lecturer/EEE	a. Foster an entrepreneurial spirit among students. b. Provide resources, training, and mentorship to students interested in starting their own businesses.
8	Disciplinary Committee	Mr.Anil Kolli, HoD/Mech	a. Maintain discipline and order within the institution. b. Investigate and address cases of student misconduct and violations of the institution's code of conduct.
9	Grievance Redressal Cell	Mr.Anil Kolli, HoD/Mech	a. Receive and resolve grievances and complaints from students and staff. b. Ensure that concerns and issues raised by members of the institution are addressed in a fair and timely manner.
10	Examination Cell	Mr.Sumit Kumar, COE	a. Organize and manage the examination and assessment processes. b. Ensure the integrity, security, and fairness of the examination system.
11	Library	Mr.Titus,	a. Advise on the development and

	Advisory Committee	Sr.Lecturer/Mech	improvement of library resources and services. b. Recommend acquisitions, subscriptions, and policies related to the library.
12	Alumni Association Cell	Mr.Bhaskar Ranjan, Sr.Lecturer/EE	a. Maintain connections with alumni and engage them in the institution's activities. b. Organize alumni events, networking opportunities, and fundraising initiatives.
13	Admission Committee	Mr.Ranjit Choudhary, Dean of Academics	a. Oversee the admission process for new students. b. Establish admission criteria and ensure a fair and transparent admission system.
14	Hostel Committee	Mr.Arun Pandian, Sr.Lecturer/Mech	a. Manage and maintain the hostel facilities for students. b. Address issues related to hostel accommodation, safety, and amenities.
15	Sports Committee	MrAnugrah Ashish, Lecturer/ EE Mrs.Kalpana Pandey, Librarian	a. Promote sports and physical activities within the institution. b. Organize sports events, competitions, and support student athletes.
16	Morphosis - Tech Fest Committee	Mr.Ganeshbabu M Lecturer/EE Mr.Sudhir Kumar, Lecturer/MECH	a. Plan and organize the institution's tech fest or similar events. b. Coordinate activities, competitions, and workshops related to technology and innovation during the fest.

B. Grievance Redressal Mechanisms

Grievance Redressal Committee:

Composition:

- The Grievance Redressal Committee is composed of the Principal, Head of Departments, and staff members, creating a diverse group to address various concerns.
- Grievance Redressal Committee in the Institute and Appointment of OMBUDSMAN by the Committee. As per All India Council for Technical Education (Establishment of Mechanism for Grievance redressal) Regulations, 2012, F. No. 37-3/Lega112012, dated 25.05.2012).

Composition of Grievance Redressal Committee:

S. No.	Name	Designation	Position
1	Mr. Rama Gopal Challa	Principal	Chairman
2	Mr. Sandy William	Advocate Ms.1325/2014	OMBUDSMAN
3	Mr. Anil Kolli	HOD / Mech	Convener
4	Mr. Ranjit Choudhary	Dean of Academics	Member
5	Mr. Sumit Kumar Singh	Sr.Lecturer / EEE	Member
6	Mr. Robin	HR	Member

Mechanism:

- The committee analyzes all grievances and suggestions submitted through the suggestion box.
- It strictly adheres to the guidelines provided by AICTE (All India Council for Technical Education).
- Regular meetings are conducted to ensure that grievances raised are addressed in a timely and effective manner, fostering an environment of continuous improvement.

Anti-Ragging Committee:**Composition:**

- The Anti-Ragging Committee is headed by the Principal and consists of dedicated members.
- Anti-Ragging Committee as per All India Council for Technical Education notified regulation for prevention and prohibition of ragging in AICTE approved technical institutions vide No. 37-3/Legal/AICTE/2009 dated 01.07.2009.

Composition of Anti-ragging Committee:

S. No.	Name	Designation	Position
1	Mr. Rama Gopal Challa	Principal	Chairman
2	Mr. Anil Kolli	HOD - Mech	Coordinator
3	Mr. Ranjit Choudhary	Dean of Academics	Member
4	Mr. Arun Pandian	Sr. Lecturer/Mech	Member
5	Mrs. Pameela	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	8525999487
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 academic Development activities.	Below Rs.1 Lakh
2	HoDs	Procurement of laboratory Consumables Stationeries, Service and Maintenance	Below Rs.10,000/-
3	Coordinators	To spend for their committee activities	Rs.5,000/-

In essence, our commitment to delegation of financial powers aligns with our broader vision of fostering a collaborative and accountable community. It empowers our faculty members to shape the future of our institution while ensuring that financial decisions are made swiftly and effectively.

We believe that this democratic and decentralized approach not only serves our college's interests but also enriches the professional development of our staff members, creating a stronger and more resilient educational environment.

9.1.5 Transparency and availability of correct/unambiguous information in public domain (5):

At GEMS Polytechnic College, we are dedicated to ensuring transparency, clarity, and accuracy of information provided to our stakeholders. To achieve this, we employ various channels to disseminate important information and maintain an open line of communication:

College Website:

- We utilize our college website to share information related to institutional policies, rules, and various processes.
- This platform serves as a central hub for accessing essential information, promoting transparency in our operations.

Notice Boards:

- Our notice boards, strategically located at the main entrance, department corridors, and classrooms, serve as physical sources of information.
- We use these boards to communicate proposed activities to both staff and students, ensuring that everyone is informed.

Orientation Programs:

- During orientation programs, we provide detailed information about various institutional and departmental activities.
- This comprehensive overview helps newcomers become familiar with our institution's offerings.

SBTE Board Circulars:

- We maintain an official WhatsApp group and utilize official email IDs to share SBTE Board Circulars with our students.
- This ensures that critical updates and announcements reach students promptly.

Academic Calendar:

- Our academic calendar includes essential dates such as examination schedules, holidays, and events.
- It is circulated to all students and staff members, facilitating effective planning and utilization of facilities.

Transparency in Assessment:

- After each internal assessment test, we return corrected answer scripts to students.
- This practice promotes transparency and allows students to seek clarification in the evaluation process.

Department Newsletters:

- Our department newsletters, published once per semester, provide insights into departmental activities.
- This information is also available on the department's dedicated page on the college's official website.

AICTE Approval and SBTE Affiliation:

- As a college approved by AICTE, New Delhi, and affiliated with SBTE, Bihar, we make all relevant information and approval letters accessible on our website.
- This ensures that our stakeholders have easy access to the details of our affiliations and approvals.

We believe that by maintaining transparency and making information readily available, we empower our stakeholders to make informed decisions, participate actively in our institution's activities, and contribute to our collective growth and success.

9.2 Budget Allocation, Utilization, and Public Accounting at Institute level (10)

Summary of current financial year's budget and actual expenditure incurred (for the institution exclusively) in the three previous financial years:

Table 1 - CFYm1 2022-23			
INCOME		Actual expenditure	
Fee	₹61,329,583.00	Recurring including salaries	₹37,301,451.00
Govt.	₹0.00	Non Recurring	₹5,324,015.00
Grants	₹0.00	Special Projects/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.

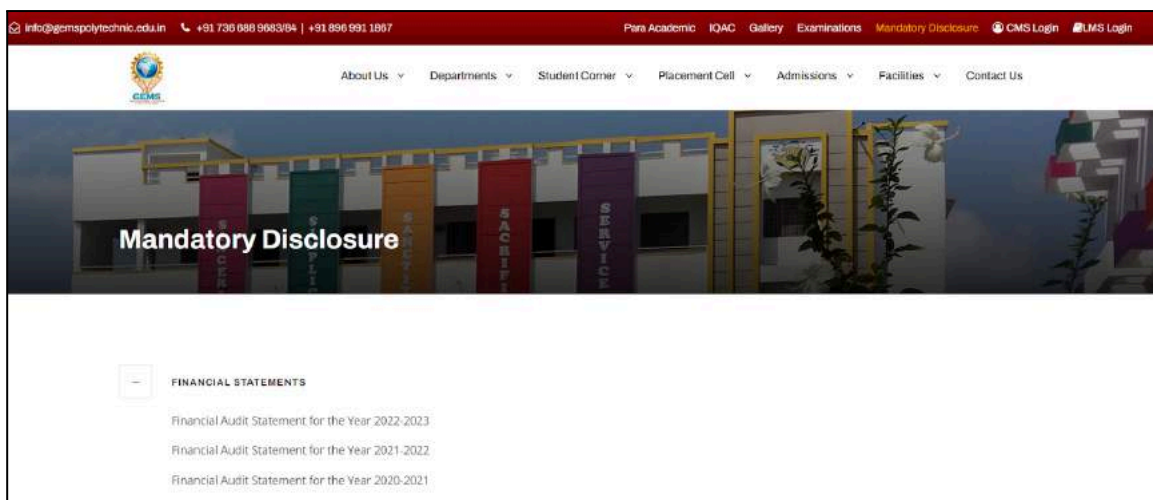
By implementing these comprehensive measures, we strive to ensure that allocated funds are utilized efficiently and effectively, aligning with the institution's goals and objectives. Our commitment to responsible financial management and accountability is unwavering, as we continuously work to enhance 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	₹ 151239	Non Recurring	₹ 130789
Recurring	₹ 72245	Recurring	₹ 60539
Total Budget	₹ 223484	Total Expenditure	₹ 191328
Table 2 - CFYm2 2021-22			
Budget		Actual expenditure	
Non Recurring	₹ 98000	Non Recurring	₹ 84185
Recurring	₹ 100407	Recurring	₹ 63297
Total Budget	₹ 198407	Total Expenditure	₹ 147482.50
Table 3 - CFYm3 2020-21			
Budget		Actual expenditure	
Non Recurring	₹ 0	Non Recurring	₹ 0
Recurring	₹ 142976	Recurring	₹ 124851
Total Budget	₹ 142976	Total Expenditure	₹ 124851

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 Engineering** is a critical aspect of ensuring the smooth operation of academic activities and the enhancement of the learning environment. The institution justifies the adequacy of budget allocation through a well-structured process:

Budget Proposal Alignment:

- The budget allocation aligns with the Department Proposed Budget. The allocated funds are judiciously spent to cover various expenses, and this spending is meticulously monitored by the Budget Incharge of the department.

Incorporating Stakeholder Input:

- The department collects projections from individuals, laboratory in-charges, and faculty members.
- These inputs are thoroughly scrutinized and considered when formulating the department's budget.

Curriculum-Driven Equipment Allocation:

- Additional equipment and consumables required for laboratory facilities are considered based on curriculum revisions.
- The appropriate budget is allocated to ensure that students have access to up-to-date equipment and resources.

Planning for Academic Year:

- Programs and events for the entire academic year are meticulously planned, and detailed budgets are forecasted to support their successful execution.

Flexibility for Additional Expenditure:

- The budget also accounts for unforeseen additional expenses that may arise during the year.
- This ensures that the department has the necessary resources to address unexpected needs.

Approval Process:

- The finalized budget is submitted to the principal through the Overall Budget Coordinator for final approval.
- This process ensures transparency and accountability in budget allocation.

Supplemental Allocations:

- In cases where the allocated budget may prove insufficient, additional allocations are made to address special requirements, thereby ensuring that the department can effectively meet its goals.

9.3.2 Utilization of allocated funds (3)

(In this section, the institution needs to state how the budget was utilized during the last three assessment years)

The efficient utilization of allocated funds is of paramount importance to deliver quality education and maintain high standards in the Department of Computer Science & Engineering. The institution demonstrates how funds were utilized during the last three assessment years:

Lab Equipment Procurement:

- A significant portion of the allocated funds is utilized for the procurement of laboratory equipment.
- This ensures that students have access to state-of-the-art tools and technology for their practical education.

Upgradation of Lab Facilities:

- Funds are allocated for the upgradation of existing lab facilities to ensure that the infrastructure remains modern and conducive to effective learning.

Consumables Purchase:

- The budget is used to purchase consumables necessary for the day-to-day functioning of laboratories, guaranteeing that students have access to the materials they need.

Academic Events:

- Funds are utilized for conducting various academic events such as seminars, workshops, conferences, symposiums, and other educational programs.
- The utilization of funds for these events requires prior approval by the Principal to maintain financial transparency.

Variance Monitoring:

- As the budgets are derived from individual laboratory levels and consolidated to form the department's budget, the variance between the budget and utilization is kept to a minimum.
- Any increase in expenditure is closely monitored, and control measures are taken to stay within budget limits.

Prior Approval for Unbudgeted Expenses:

- Any unbudgeted expenses require prior approval from the management before spending, ensuring that funds are used judiciously and in alignment with the department's goals.

Detailed Utilization Reports:

- The department maintains detailed utilization reports to track the expenditure of allocated funds. These reports provide transparency and accountability in the utilization of funds.

In conclusion, the Department of Computer Science & Engineering at GEMS Polytechnic College follows a meticulous process for budget allocation and utilization, ensuring that funds are allocated based on needs, transparently spent, and effectively utilized to provide quality education and support academic endeavors. This commitment to financial accountability and excellence contributes to the department's continued success.

Utilization reports for the current year and previous years are maintained and are available for reference.

Table: Utilization of budget				
Financial Year	Budget Proposed in Rs.	Budget Sanctioned In Rs.	Actual Expenditure in Rs.	Percentage of Utilization
2022-2023	₹1,060,620.00	₹1,060,000.00	₹1,052,515.00	99.29%
2021-2022	₹471,110.00	₹470,000.00	₹465,530.00	99.05%
2020-2021	₹16,185.00	₹16,000.00	₹15,589.00	97.43%
2019-2020	2,415,925.00	2,400,000.00	2,349,526.27	97.90%

9.4 Library and Internet (20):

9.4.1 Quality of learning resources (hard/soft) (10):

- A. Availability of relevant learning resources including e-resources and Digital Library (7)
- B. Accessibility to students (3)

Library Network & Automation:

- At GEMS Polytechnic College, our commitment to enhancing the learning experience extends to our library facilities.
- We are proud to announce that our central library is fully automated, thanks to the integration of Cloud-based Campus Management software known as VMEDULIFE.

Here's how this automation benefits our students and faculty:

Effortless Access:

- With VMEDULIFE, both students and faculty members gain convenient access to their library-related information.
- This includes details such as book issuance, returns, due dates, and fine information.
- You can access these details effortlessly through the VMEDULIFE mobile app or the computer system, using your personal login credentials.

Online Public Access Catalog (OPAC):

- We provide an Online Public Access Catalog (OPAC) service that allows easy searching and retrieval of library resources.
- This service is accessible to both faculty and students through the VMEDULIFE platform.
- Additionally, you can access the OPAC service directly via this link: <https://portal.vmedulife.com/public/library/#/gems-polytechnic-Pitampura>
- We believe that this automation not only simplifies library management but also empowers our academic community with efficient and user-friendly tools for academic success. Explore the world of knowledge at GEMS Polytechnic College through our automated library network powered by VMEDULIFE.

Availability of relevant learning resources including e-resources and Digital Library:

At GEMS Polytechnic College, we take pride in offering a comprehensive array of learning resources in our central library, catering to the diverse needs of our students and faculty. Here's a glimpse of what you can find:

1	Text Books for Circulation:	Our collection of textbooks covers a wide range of subjects, available for borrowing by students. These books provide the core material needed for academic coursework.
2	Reference Books (Not for Circulation):	In addition to textbooks, we have an extensive collection of reference materials that include encyclopedias, dictionaries, and specialized reference books. These resources are for in-library use and provide valuable insights for research and reference.
3	Student Project Reports (Not for Circulation):	Past student project reports are available for reference, providing a valuable resource for those seeking inspiration or guidance in their own projects.
4	International / National Journals:	Our library subscribes to a variety of international and national journals, offering the latest research and insights in various fields. These journals are essential for staying updated in your area of study.
5	Competitive Exam Books:	We have a dedicated section with books and study materials to help students prepare for competitive exams, enabling them to excel in various entrance tests and competitive assessments.
6	Non-Fiction Storybooks:	Our collection includes non-fiction books that cover a wide range of subjects, providing an opportunity for leisure reading and broadening your knowledge horizons.
7	Dictionary and Encyclopedia:	Access to dictionaries and encyclopedias to aid in research, reference, and language improvement.
8	Daily Newspapers	Stay informed about current events, trends, and developments with daily newspapers available in the library.

Digital Library:	
Availability of digital library content :	Yes
Availability of an exclusive server :	Yes
Availability over Intranet/Internet :	Yes
Availability of exclusive space/room :	Yes
Number of users per day :	25
E-books Availability:	Yes
NPTEL resources.	Available

Accessibility to students:

- At GEMS Polytechnic College, we prioritize students' accessibility to knowledge and resources. We are dedicated to fostering an environment where students can access the resources they need to excel in their academic pursuits and personal development.

Here's how our central library ensures a conducive environment for learning:

Library Hours:

Monday to Friday: 9:00 a.m. to 4:40 p.m.

Saturday: 9:00 a.m. to 3:30 p.m.

Sunday and Government Holidays: Closed

Stay Informed:

- Keep abreast of current events with our daily newspaper subscriptions, available in both Hindi and English.

Academic Resources:

- Our library subscribes to academic journals at regular intervals, providing students with access to the latest research and scholarly publications.
- Efficiently locate books and resources using our user-friendly Library Online Public Access Catalog (OPAC).

Exam Preparation:

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

Reprography Facility:

- To further support your academic endeavors, we provide a reprography facility within the library.
- Students can easily obtain photocopies of non-copyrighted materials at a minimal cost.

NDLI Club Initiatives:

- GEMS Polytechnic College's NDLI Club (Registration Number: INBRNC3K4TTETNZ) organizes diverse student-centric events, including reading sessions, essay competitions, spell bees, poster and model presentations, and engaging quizzes, aimed at fostering holistic student development.
- As part of the GPC-NDLI Club, we organize a range of events and competitions to empower and enrich the student community.
- GEMS Polytechnic College earns recognition as one of Bihar, India's top-performing NDLI Clubs. Exceptional achievement in educational endeavors acknowledged.



9.4.2 Internet (10):

Name of the Internet provider	<ul style="list-style-type: none"> ● ISHAN (Primary), ● BIG-DATA (Secondary)
Available bandwidth	<ul style="list-style-type: none"> ● 50Mbps (Primary), ● 40Mbps (Secondary)
WiFi availability	<ul style="list-style-type: none"> ● Main Block Ground Floor Lobby and ● 2nd Floor Lobby with Indoor Access Points. ● Hostel Block with an Outdoor Access Point.
Internet access in labs, classrooms, library and offices of all Departments	<ul style="list-style-type: none"> ● Smart boards in classrooms, ● Labs with computers, ● Department libraries ● Central Library, and ● Office. ● They are connected with a wired network through managed and unmanaged network switches.
Security arrangements	<ul style="list-style-type: none"> ● Wijungle - Unified Network Security Gateway with an active subscription till October 2026

9.5 Institutional Contribution to the Community Development (5):

At GEMS Polytechnic College, we are deeply committed to fostering community development and giving back to society. Our institutional efforts in this regard are coordinated through the GPC Community Development Cell, which plays a pivotal role in organizing various programs and initiatives aimed at enhancing the well-being of the community. Some of our significant contributions include:

1. Medical Camps:

- Our students and staff members actively participate in organizing medical camps to provide essential healthcare services to the underprivileged and marginalized sections of the community.

2. Tree Plantation:

- We believe in the significance of environmental sustainability and undertake tree plantation drives to contribute to a greener and healthier environment.

3. Basic Education for Village School Students:

- We take pride in extending our educational resources to nearby village school students, offering them basic education and opportunities for personal growth.

4. Teaching Moral and Ethical Values:

- Our commitment to holistic development extends to teaching moral and ethical values to the students of nearby village schools, instilling important life lessons.

5. Computer Systems Awareness and Training:

- In today's digital age, computer literacy is crucial. We provide awareness and basic training on computer systems to students in neighboring village schools to empower them with technological skills.

6. Road Safety Awareness:

- Promoting road safety is a priority. Our road safety awareness programs aim to educate the community on safe and responsible road practices.

National Service Scheme (NSS):

The National Service Scheme is an integral part of our commitment to community development. It serves as a platform for students to actively contribute their services for the betterment of the community and the nation while nurturing a sense of social responsibility. Some of the notable NSS programs organized and implemented include:

1. Basic Technical Training for Rural Youths:

- We empower rural youths with essential technical skills through specialized training programs, equipping them for better employment opportunities.

2. Road Safety Awareness Programs:

- Our efforts to promote road safety extend to NSS initiatives, aiming to create awareness and reduce road accidents.

3. Medical Camps:

- In line with our overall mission, medical camps are organized by NSS to provide healthcare services and support to those in need.

4. Tree Plantation:

- Our commitment to environmental sustainability is further exemplified by tree plantation activities conducted under the NSS banner.

NSS PROGRAM SUMMARY DETAILS					
S.No	Name of the Activity	Date	Place	No.of GPC Students/Volunters Participated	Beneficiaries (No.of People benefitted & Place)
1	NSS Inaugural	22/4/22	GPC Auditorium	Mr. Piyush Pranjape, Regional Director, Ministry of Youth & Sports Affairs, Government of India,	100
2	AWARENESS PROGRAM ON NSS DAY AND ENVIRONMENT DAY.	09 -09 -2022	Jogiya High School Aurangabad Bihar	Mr. Arun Mukhiya Tengra Panhayat Aurangabad Bihar	JOGIYA
3	Girl's Protection Nation's Pride	13/2/23	Government Middle Middle School Jogiya	Ms . Kanti Verma Lecturer CSE GEMS Polytechnic College	50
4	Free Health Awareness & Medical Camp	5/4/23	PitamPur Aurangabad Bihar	Mrs. Roja, Senior Nurse, GEMS Polytechnic College,	75
5	MERI LIFE- ONE STUDENT ONE TREE	8/8/2023	GPC Campus	Principal, GEMS Polytechnic College and All Dept. HODs.	55
6	Free Health Awareness & Medical Camp	11/8/2023	Tiwari Bigha	Mrs. Roja, Senior Nurse, GEMS Polytechnic College,	127
7	Free Health Awareness & Medical Camp	8/9/2023	Deohara	Mrs. Roja, Senior Nurse, GEMS Polytechnic College,	61
8	Free Health Awareness & Medical Camp	26 -10- 2023	JAGDISH PUR	Students - 5 memebers Staff- 17 members	140

NATIONAL SERVICE SCHEME (NSS) - ACTIVITIES

In the past years, GEMS Polytechnic College has been bustling with impactful NSS activities. From environmental clean-up drives to health awareness campaigns, our students have been actively engaged. With a spirit of service and dedication, we've left a positive mark on our community. Join us as we continue to make a difference in the years to come!



NSS Volunteers are conducting Nukkad Drama in Village to raise awareness about environmental conservation.



Mr. Arun, the Panchayat Mukhiya of Tengra, is addressing villagers during an NSS program.



Celebrating Republic Day 2024



2 students from GPC Participated 10 Days Adventure Camp at Hatkoti Himachal Pradesh 30th Dec 2023 to 8th Jan 2024



Free General Medical Camp at Pritampur on 22nd February 2024

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NATIONAL SERVICE SCHEME (NSS) - ACTIVITIES

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NSS Inauguration on 22th April 2022



NSS Rally at Jogiya on 9th Sep 2022



Girl's Protection Nation's Pride at Jogiya School on 13th Feb 2023



Free Health Awareness & Medical Camp at Pritampur on 5th April 2023



Meri Life : One Student one Plant on 8th August 2023

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At GEMS Polytechnic College, we believe that our institutional contributions to community development are not just a duty but a heartfelt commitment to creating a more equitable and responsible society. Through these programs, we aim to enhance the standard of living, promote dignity, and nurture responsible citizens who actively participate in the betterment of our nation.

9.6 Alumni Performance and Connect (10):

At GEMS Polytechnic College, we value the continued association and contributions of our alumni. Here's how we foster a strong bond with our alumni and leverage their experiences for the betterment of our institution and students:

Alumni Association:

- The GEMS Polytechnic College Alumni Association has been established, and all former students are members of this association.
- The Alumni Association of GEMS Polytechnic College was officially registered with the government, bearing registration number **T-3532/24**.
- This association serves as a platform to cultivate a sense of belonging and unity among our alumni, encouraging them to excel in their respective fields.

Alumni Association Constitution:

Sl.No	Role	Name of the Members	Designation
1.	President	Mr. Rama Gopal Challa	Principal
2.	Vice President	Mr. Ranjith Choudary	Dean of Academics
3.	Secretary	Ms. Jensika Rani	Sr.Lecturer/ CIVIL
4.	Treasurer	Mr. Robin	Sr.Lecturer/ EEE
5.	Committee Chair	All Dept. HoDs	
6.	Event Coordinator	Mr. Ganesh / Mrs. Catharine	Lecturer/ EE
7.	Membership Coordinator	Mr. Bhaskar Ranjan	Lecturer/ EE
8.	Communication Coordinators	All Department Incharges	
9.	Department Incharge	Mr. Daniel Swami	Lecturer/ CIVIL
10.		Mrs. Catharine	Lecturer/ EE
11.		Mr. Ketu kumar	Lecturer/ EEE
12.		Ms. Priyanka	Lecturer/ CSE
13.		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
KP 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.



Alumni Meet

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.

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 shall fully abide by them.

It is submitted that the information provided in this Self Assessment Report is factually correct.

I understand and agree that an appropriate disciplinary action against the Institute will be initiated by the NBA. In case, any false statement/information is observed during pre-visit, visit, postvisit and subsequent to grant of accreditation.

Date : 19/04/2024
Place : Aurangabad, Bihar

Head of the Institute
Name : Rama Gopal Challa
Designation: Principal

Signature : *Ramgopal* 19/04/2024

Seal of the Institution :



PRINCIPAL
GEMS Polytechnic College
Ratanpura, Aurangabad
Bihar-824121

NH - 2, Joglya More, Ratanpura, Aurangabad, Bihar - 824121
Website: www.gemspolytechnic.edu.in E-mail: polytechnic@gemsbihar.org
07070066877, 7366889683, 7366889684

Annexure 1

Program Outcomes and Program-Specific Outcomes

PROGRAM OUTCOMES (POs)

PO1. Basic and Discipline-specific knowledge:

Apply knowledge of basic mathematics, science and engineering fundamentals and engineering specialization to solve the engineering problems.

PO2. Problem analysis:

Identify and analyze well-defined engineering problems using codified standard methods.

PO3. Design/ development of solutions:

Design solutions for well-defined technical problems and assist with the design of systems components or processes to meet specified needs.

PO4. Engineering Tools, Experimentation and Testing:

Apply modern engineering tools and appropriate techniques to conduct standard tests and measurements.

PO5. Engineering Practices for society, sustainability and the environment:

Apply appropriate technology in the context of society, sustainability, environment and ethical practices.

PO6. Project Management:

Use engineering management principles individually, as a team member or a leader to manage projects and effectively communicate about well-defined engineering activities.

PO7. Life-long learning:

Ability to analyze individual needs and engage in updating in the context of technological changes.

PROGRAM SPECIFIC OUTCOMES

PSO1: Ability to develop and implement innovative ideas in the area of product development with the help of modern CAD & 3D printing tools.

PSO2: Ability to achieve excellence in the domain of Computer Numerical Control (CNC) operations.

PSO3: Ability to achieve excellence in advanced manufacturing skills for various industrial sectors.



Empowering to Excel

Contact:

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GEMS Polytechnic College,
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