GODAVARI FOUNDATIONS GODAVARI COLLEGE OF ENGG.

SELF ASSESSMENT REPORT(TIER - II) FOR Electrical Engineering

Part A : Institutional Information

1 Name and Address of the Institution

GODAVARI FOUNDATIONS GODAVARI COLLEGE OF ENGG.,
P-51,ADDL MIDC,BHUSAWAL ROAD

2 Type of the Institution:

○ Deemed to be University	◉ Autonomous
○ University	○ Non-Autonomous (Affiliated)
○ Institute of National Importance	○ Any Other(Please Specify)

3 Year of establishment of the Institution:

1999

4 Ownership Status:

○ Central Government	☐ Any Other(Please Specify)
○ State Government	
○ Government Aided	
◉ Self financing	

5 Name and Address of Affiliating University

NORTH MAHARASHTRA UNIVERSITY,JALGAON

6 Other Academic Institutions of the Trust/Society/Company etc., if any:

Name of Institutions	Year of Establishment	Programs of Study	Location
Godavari Sangeet Mahavid	1999	Music Courses	Jalgaon
Godavari College of Engine	1999	Diploma/ B.Tech. / M.Tech.	Jalgaon
Godavari English Medium S	2000	Nursery to 12th	Jalgaon
Dr. Ulhas Patil English Med	2001	Nursery to 12th	Jalgaon
Dr. Ulhas Patil English Med	2001	Nursery to 12th	Jalgaon
Godavari Institute of Manag	2001	MBA / MCA	Jalgaon
Dr. Varsha Patil Women's C	2001	B.Sc. in Home Science	Jalgaon
Godavari College of Nursing	2003	ANM / GNM / BSc. / MSc	Jalgaon
Dr. Ulhas Patil College of Ag	2003	B.Tech.	Jalgaon
Dr. Ulhas Patil Science Coll	2003	BSc.	Jalgaon
Dr. Ulhas Patil Law College	2004	LLB	Jalgaon
Dr. Ulhas Patil College of Pl	2005	BPTh / MPTh	Jalgaon
Dr. Ulhas Patil College of Ag	2006	BSc.	Jalgaon
Dr. Ulhas Patil Medical Coll	2008	MBBS / MD / MS	Jalgaon
Dr. Ulhas Patil College of Fo	2014	B.Tech.	Jalgaon
Dr. Ulhas Patil College of H	2014	BHMS	Jalgaon
Haribhau Jawale Institute of	2021	-	Jalgaon
Dr. Varsha Patil Women's C	2021	BCA	Jalgaon
Dr.Gunwantrao Sarode Ayu	2024	BAMS	Jalgaon

7 Details of all the programs being offered by the institution:

Program Name	Program Applied level	Year of Start	AICTE approval details	Sanctioned Intake	Increase/decrease in intake	Current Intake	Accreditation status	From	To	Program for consideration	Program for Duration
Electrical Engineering	UG	2010	2010	60	No	60	Applying first time	--	--		4
Electronics and Telecommunication Engineering	UG	1999	1999	60	Yes	60	Applying first time	--	--	No	4

Sanctioned Intake for Last Five Years for the Electronics and Telecommunication Engineering

Academic Year	Sanctioned Intake
2025-26	60
2024-25	60
2023-24	60
2022-23	30
2021-22	30
2020-21	30

VLSI & Embedded Systems Design	PG	2011	2011	18	Yes	9	Not eligible for accreditation	--	--	0	2

Sanctioned Intake for Last Five Years for the VLSI & Embedded Systems Design

Academic Year	Sanctioned Intake
2025-26	9
2024-25	9
2023-24	9
2022-23	18
2021-22	18
2020-21	18

Artificial Intelligence and Machine Learning	Diploma	2024	2024	60	No	60	Not eligible for accreditation	--	--	0	3
Comuter Engineering	Diploma	2021	2021	60	No	60	Eligible but not applied	--	--	0	3
Computer Science and Engineering	Diploma	2023	2023	60	No	60	Not eligible for accreditation	--	--	0	3
Electronics and Computer Engineering	Diploma	2024	2024	60	No	60	Not eligible for accreditation	--	--	0	3
Mechanical Engineering	Diploma	2012	2012	60	No	60	Eligible but not applied	--	--	0	3
Artificial Intelligence and Data Science	UG	2023	2023	60	No	60	Not eligible for accreditation	--	--	0	4

Program Name	Program Applied level	Year of Start	AICTE approval details	Sanctioned Intake	Increase/decrease in intake	Current Intake	Accreditation status	From	To	Program for consideration	Program for Duration
Electrical Engineering	UG	2010	2010	60	No	60	Applying first time	--	--	0	4
Mechanical Engineering	UG	2008	2008	60	No	60	Eligible but not applied	--	--	0	4
Thermal Engineering	PG	2012	2012	18	No	18	Not eligible for accreditation	--	--	0	2
Computer Engineering	PG	2012	2012	18	No	18	Not eligible for accreditation	--	--	0	4
Computer Engineering	UG	1999	1999	60	Yes	180	Not eligible for accreditation	--	--	0	4

Sanctioned Intake for Last Five Years for the Computer Engineering

Academic Year	Sanctioned Intake
2025-26	120
2024-25	120
2023-24	120
2022-23	120
2021-22	60
2020-21	60

8 Programs to be considered for Accreditation vide this application:

S No	Level	Discipline	Program
1	Under Graduate	Engineering & Technology	Electrical Engineering
2	Under Graduate	Engineering & Technology	Electronics and Telecommunication Engineering

Table No. A8.2

S No	Name of the Department	Name of the Program	Name of Allied Departments/Cluster	Name of Allied Program
No record exist(s)				

9 Total Number of Faculty Members in Various Departments:

ID	Deparment Name	Number of faculty members in the Department (UG and PG)											
		2025-26 (CAY)				2024-25 (CAYm1)				2023-24 (CAYm2)			
		No. of Professors	No. of Associate Professors	No. of Assistant Professors	Total faculty members	No. of Professors	No. of Associate Professors	No. of Assistant Professors	Total faculty members	No. of Professors	No. of Associate Professors	No. of Assistant Professors	Total faculty members
1	Electronics and Telecommunication Engineering	3	2	7	12	3	1	7	11	0	3	8	11
2	Electrical Engineering	0	1	9	10	0	1	11	12	0	0	11	11
3	Computer Engineering	0	2	20	22	0	1	21	22	0	0	15	15
4	Mechanical Engineering	1	1	10	12	1	0	9	10	1	0	9	10
5	AIDS Engineering	1	0	5	6	1	0	4	5	0	0	0	0
6	First year engineering	2	4	12	18	2	4	12	18	2	4	9	15
7		0	0	0	0	0	0	0	0	0	0	0	0

10 Total Number of Engineering Students in Various Departments:

ID	Deparment Name	Number of students in the Department (UG and PG)		
		2025-26 (CAY)	2024-25 (CAYm1)	2023-24 (CAYm2)
1	AIDS Engineering	213	131	63
2	Computer Engineering	556	474	412
3	Electrical Engineering	178	114	134
4	Electronic $ Telecommunication	221	167	130
5	Mechanical Engineering	113	70	78

11 Vision of the Institution:

To be a center of excellence in technical education that nurtures professional competence, innovation, and responsible citizenship, contributing to Indias transformation into a developed nation by 2047.

12 Mission of the Institution:

IM1. To deliver quality technical education through innovative teaching–learning practices aligned with industry needs.

IM2. To foster a research-driven environment that encourages creativity, problem-solving, and sustainable innovation.

IM3. To cultivate entrepreneurial skills and ethical values among students for nation-building and sustainable development.

IM4. To empower students with global competencies and lifelong-learning skills, enabling them to adapt to emerging technologies and contribute meaningfully to society.

13 Contact Information of the Head of the Institution and NBA coordinator, if designated:

Head of the Institution	
Name	Dr. Vijaykumar Patil
Designation	Principal
Mobile No.	9373950013
Email ID	patildrvijay76@gmail.com

NBA Coordinator, If Designated

Name	Dr Tushar Ananda Koli
Designation	IQAC Coordinator
Mobile No.	9423185087
Email ID	kolitushar09@gmail.com

PART B: Criteria Summary

Critera No.	Criteria	Total Marks	Institute Marks
1	OUTCOME-BASED CURRICULUM	120	120.00
2	OUTCOME-BASED TEACHING LEARNING	120	120.00
3	OUTCOME-BASED ASSESSMENT	120	120.00
4	STUDENTS' PERFORMANCE	120	67.87
5	FACULTY INFORMATION	100	65.33
6	FACULTY CONTRIBUTIONS	120	74.00
7	FACILITIES AND TECHNICAL SUPPORT	100	100.00
8	CONTINUOUS IMPROVEMENT	80	76.00
9	STUDENT SUPPORT AND GOVERNANCE	120	119.00
	Total	**1000**	**862**

Part B : Criteria Summary

1 OUTCOME-BASED CURRICULUM (120)

1.1 Vision, Mission and Program Educational Objectives (PEOs) (35)

1.1.1 State the Vision and Mission of the Institute and the Department (5)

Vision of the institute	To be a center of excellence in technical education that nurtures professional competence, innovation, and responsible citizenship, contributing to India's transformation into a developed nation by 2047.
Mission of the institute	**IM1.** To deliver quality technical education through innovative teaching–learning practices aligned with industry needs. **IM2.** To foster a research-driven environment that encourages creativity, problem-solving, and sustainable innovation. **IM3.** To cultivate entrepreneurial skills and ethical values among students for nation-building and sustainable development. **IM4.** To empower students with global competencies and lifelong-learning skills, enabling them to adapt to emerging technologies and contribute meaningfully to society.
Vision of the Department	To develop skilled Electrical Engineering professionals with strong technical expertise who contribute to sustainable energy solutions, industrial growth, and national development.
Mission of the Department	

Mission No.	Mission Statements
M1	To provide quality education in Electrical Engineering through effective teaching–learning practices and modern laboratory facilities.
M2	To promote applied research and innovation in power systems, renewable energy, and emerging electrical technologies.
M3	To equip students with practical skills, ethical values, and an entrepreneurial mindset for careers in industry, academia, and society.
M4	To strengthen industry–academia collaboration to enhance employability and professional competence in the electrical and multidisciplinary domain.

1.1.2 State PEOs of the Program (5)

PEO No.	Program Educational Objectives Statements
PEO1	Graduates will possess strong foundational and technical knowledge in electrical engineering, power systems, and allied engineering sciences, enabling them to analyze and design complex electrical systems.
PEO2	Graduates will apply electrical engineering principles to design, develop, and implement practical solutions for power, energy, and industrial applications.
PEO3	Graduates will pursue lifelong learning through higher education, professional certifications, and continuous upskilling to adapt to emerging electrical and energy technologies.
PEO4	Graduates will function effectively as individuals and as members of multidisciplinary teams, demonstrating strong communication, collaboration, and leadership skills.
PEO5	Graduates will practice their profession with strong ethical values and social responsibility, contributing to sustainable energy solutions and national development

1.1.3 Process of Defining Vision, Mission and PEOs (15)

The Vision, Mission and PEOs of Electrical Engineering Departments are framed in line with the Institute Vision & Mission by the active involvement of various stakeholders. The process is as follows.

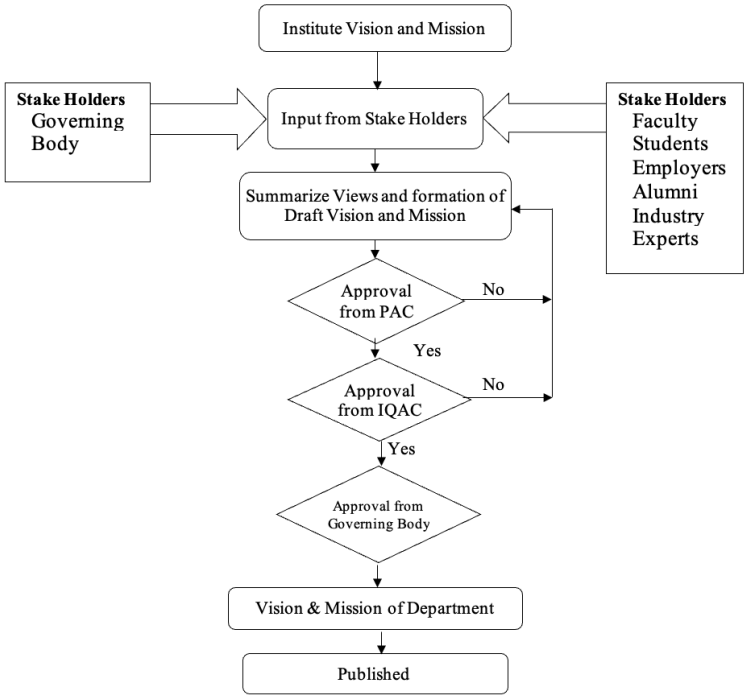


Table 1.1.3 (a) In establishing the Vision and Mission of the department, the following steps were followed:

Steps	Process
Step 1	The vision and Mission of the institute serve as the basis for defining the departments vision and mission.
Step 2	Views are taken from stakeholders of the department, such as Faculty, Support Staff, Employers, Students, Industry Experts and Alumni
Step 3	All the Information was collected and summarized, formulated by the HOD and the team of senior Faculty members of the department
Step 4	The views are analyzed and reviewed to check the consistency with the vision and mission of the institution by the Program Advisory Committee (PAC)
Step 5	The Vision and Mission Statement is sent to the Internal Quality Assurance Cell (IQAC) for further approval.
Step 6	The Vision and Mission Statement is sent to the Governing Body for final approval.
Step 7	After approval from the Governing Body, the Vision and Mission were published.

The formulation of the Department Vision and Mission follows a structured and participative approach involving multiple stakeholders to ensure alignment with institutional goals and program outcomes.

1. **Reference to Institute Vision, Mission and Program Outcomes:** The process begins with consideration of the Institute's Vision and Mission to maintain consistency and coherence.
2. **Stakeholder Inputs:** Feedback and suggestions are collected from various stakeholders, including:
    - Governing Body.
    - Faculty, Students, Employers, Alumni, Industry, and Industry Experts.

    This ensures that diverse perspectives are incorporated.
3. **Draft Preparation:** The views obtained from stakeholders are analysed, summarized, and consolidated to form a Draft Vision and Mission statement for the department.
4. **Approval Process:**
    - The draft is first placed before the Program Advisory Committee (PAC) for evaluation.
    - If approved, it is forwarded to the Internal Quality Assurance Cell (IQAC) for further validation.
    - In case of disapproval at any stage, the draft is revised and reviewed again.
    - If approved, it is forwarded to Governing body for final approval.
5. **Finalization:** Upon approval from both PAC, IQAC and the Governing Body the Department Vision and Mission is finalised.
6. **Dissemination:** The approved Vision and Mission of the department are then published and communicated to all stakeholders through various means such as the institutional website, display boards, departmental corridors, Prac

    Department Vision and Mission are not only aligned with institutional objectives but also reflect the expectations of stakeholders, thereby promoting relevance, quality, and continuous improvement.\

The **Program Educational Objectives** are established through a consultation process involving the core constituents such as the Governing Body, Principal, PAC, Faculty, Industry Experts and Alumni.

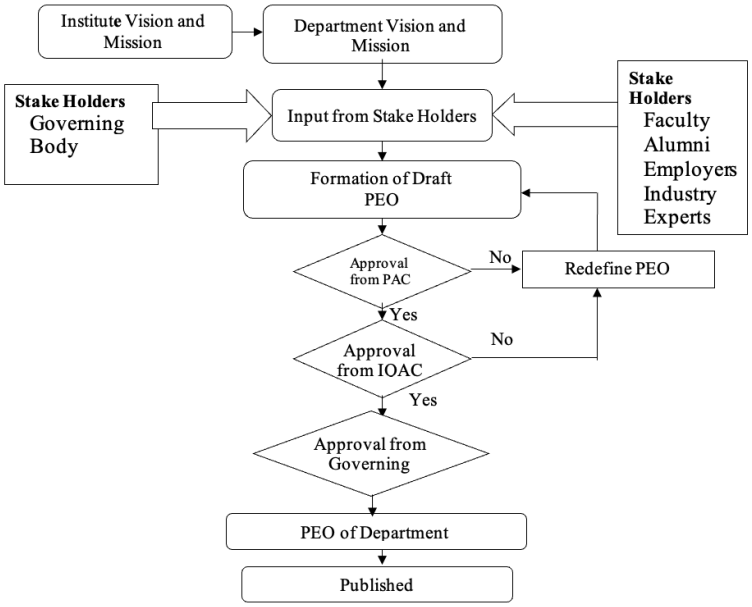


Table 1.1.3 (b) In establishing the PEO's of the department, the following steps were followed:

Step 1	The Vision and Mission of the Department serve as the basis for interaction with various stakeholders of the program.
Step 2	Program Advisory Committee members consult the stakeholders and collect their views, and submit the views to the Committee.

Step 3	All the Information was collected and summarized, formulated by the HOD and team of senior Faculty members of the department.
Step 4	The views are analyzed and reviewed to check the consistency with the vision and mission of the institution by the Program Advisory Committee (PAC).
Step 5	PEO's Statement sent to the Internal Quality Assurance Cell (IQAC) and then Governing Body for further approval.
Step 6	If satisfied the PEO's are published.

The formulation of Program Educational Objectives (PEOs) of a department is carried out through a systematic and participatory process that ensures alignment with the institute's vision and mission, departmental goals, and program o

1. **Reference to Vision, Mission, and Outcomes:** The process begins with due consideration of the Institute Vision and Mission, the Department Vision and Mission, and the Program Outcomes (POs) to ensure consistency and re
2. **Stakeholder Inputs:** Suggestions and expectations are gathered from various stakeholders to capture diverse perspectives. These include:
    - Governing Body
    - Faculty, Alumni, Employers and Industry Experts.
3. **Drafting of PEOs:** The inputs received are analysed and consolidated to prepare a Draft PEO document, reflecting both institutional aspirations and stakeholder expectations.
4. **Approval Process:**
    - The draft PEOs are presented to the Program Advisory Committee (PAC) for initial review and approval.
    - Upon PAC approval, the draft is forwarded to the Internal Quality Assurance Cell (IQAC), then to the Governing body for final validation.
    - If suggestions for modifications arise at any stage, the PEOs are redefined and refined before resubmission.
5. **Finalization:** Once approved by both PAC, IQAC and the Governing body, the PEOs of the Department are finalised.
6. **Dissemination:** The approved PEOs are then published and communicated to all stakeholders through the institutions website, display boards, departmental corridors, Practical journals, and laboratories to ensure visibility and a

This structured approach guarantees that the Programme Educational Objectives are realistic, forward-looking, and aligned with industry requirements, societal needs, and the long-term vision of the institution.

1.1.4 Dissemination of Vision, Mission and PEOs (5)

Table 1.1.4 Dissemination of Vision, Mission and PEOs on Various platforms.

Sr. No.	Places / Platforms	Institute Vision	Institute Mission	Department Vision	Department Mission	PEOs
Institutional Platforms						
1	College Website	✔	✔	✔	✔	✔
2	Annual Reports	✔	✔	✔	✔	✔
3	Display Boards in Administrative Offices & Departments	✔	✔	✔	✔	✔
Academic & Program-Level Dissemination						
4	Course Files & Program Files	✔	✔	✔	✔	✔
5	Student Induction Programs	✔	✔	✔	✔	✔
6	Program Assessment Committee (PAC) Briefings	✔	✔	✔	✔	✔
7	Departmental Notice Boards	✔	✔	✔	✔	✔
Stakeholder Engagement Channels						
8	Feedback Forms & Surveys (with embedded vision/mission references)	✔	✔	✔	✔	✔
Regulatory & Compliance Submissions						
9	NBA/NAAC/AICTE Accreditation Dossiers	✔	✔	✔	✔	✔
10	Autonomy Proposals & Institutional Development Plans (IDP)	✔	✔	✔	✔	✔
Events & Public Forums						
11	National/International Conferences Hosted by the Institution	✔	✔			

Institutional Platforms

1. **College Website:** The university and department vision, mission, and PEOs are published on the institution's official website for global access. This ensures transparency and serves as a reference for stakeholders (students, parents, alumni, employers, accrediting a
2. **Annual Reports:** Vision and mission statements are reiterated in annual reports to showcase alignment of institutional achievements and departmental progress with long-term objectives.
3. **Display Boards in Administrative Offices & Departments:** Prominent display of university/department vision, mission, and PEOs in offices, corridors, classrooms, and laboratories serves as a constant reminder to faculty, students, and visitors.

Academic & Program-Level Dissemination

4. **Course Files & Program Files:** Faculty maintain course files/program files with embedded vision, mission, and PEOs to show course outcomes (COs) alignment with program objectives.
5. **Student Induction Programs:** During induction/orientation, new students are briefed about the university and department vision, mission, and PEOs to instill a sense of direction from the beginning.
6. **Program Assessment Committee (PAC) Briefings:** PAC meetings explicitly discuss how teaching-learning, assessments, and outcomes align with departmental vision/mission and PEOs.
7. **Departmental Notice Boards:** Vision, mission, and PEOs are displayed in departmental notice boards for continuous visibility to all students and faculty.

Stakeholder Engagement Channels

8. **Feedback Forms & Surveys:** Feedback instruments (student, alumni, employer surveys) often include reference to vision/mission, ensuring stakeholder evaluation of alignment and effectiveness.

Regulatory & Compliance Submissions

9. **NBA/NAAC/ Accreditation Dossiers:** Vision, mission, and PEOs form the foundation of accreditation documents, showing systematic linkages with Program Outcomes (POs) and Continuous Improvement.
10. **Autonomy Proposals & Institutional Development Plans (IDP):** Vision and mission statements are integral in framing autonomy proposals, IDPs, and strategic growth plans, ensuring continuity of purpose.

Events & Public Forums

11. **Faculty Development Programs (FDPs):** FDP sessions include references to vision/mission to align pedagogy, curriculum design, and teaching strategies with institutional goals.
12. **National/International Conferences Hosted by the Institution:** In conferences, the institution's brochures, backdrops, and proceedings prominently feature vision/mission, reflecting commitment to global academic standards.

This multi-channel dissemination strategy ensures that all stakeholders are well-informed and aligned with the institution's Vision, Mission, and PEOs, thereby fostering a shared sense of purpose and direction.

1.1.5 Mapping of PEOs with Mission (10)

PEO Statements	M1	M2	M3	M4
Graduates will possess strong foundational and technical knowledge in electrical engineering, power systems, and allied engineering sciences, enabling them to analyze and design complex electrical systems.	3	2	1	1
Graduates will apply electrical engineering principles to design, develop, and implement practical solutions for power, energy, and industrial applications.	3	2	2	3
Graduates will pursue lifelong learning through higher education, professional certifications, and continuous upskilling to adapt to emerging electrical and energy technologies.	2	3	3	2
Graduates will function effectively as individuals and as members of multidisciplinary teams, demonstrating strong communication, collaboration, and leadership skills.	1	1	2	3
Graduates will practice their profession with strong ethical values and social responsibility, contributing to sustainable energy solutions and national development	1	2	3	2

DM1 – Quality Education

- DM1 has a **substantial correlation with PEO1 and PEO2** because effective teaching–learning practices, outcome-based education and modern laboratory facilities provide strong technical foundations and practical engineering skills.
- It has a **moderate correlation with PEO3** because quality education supports higher studies, professional certifications and continuous learning.
- DM1 has a **slight correlation with PEO4 and PEO5** by indirectly supporting communication, teamwork, professional conduct and responsible engineering practice.

DM2 – Research and Innovation

- DM2 has a **substantial correlation with PEO3** because applied research, innovation and emerging technologies directly support higher education, research, entrepreneurship and lifelong learning.
- It has a **moderate correlation with PEO1 and PEO2** because research and problem-solving strengthen analytical, design and practical engineering competencies.
- DM2 also has a **moderate correlation with PEO5** because research in renewable energy and emerging electrical technologies promotes sustainable and environmentally responsible engineering solutions.
- It has a **slight correlation with PEO4** through collaborative research and multidisciplinary project work.

DM3 – Professional and Entrepreneurial Development

- DM3 has a **substantial correlation with PEO3 and PEO5** because it emphasises lifelong learning, entrepreneurship, ethical values, professional development and service to society.
- It has a **moderate correlation with PEO2 and PEO4** because practical skills, teamwork, leadership and career preparedness support professional practice and multidisciplinary collaboration.
- DM3 has a **slight correlation with PEO1** as technical competency is supported indirectly through practical and professional development activities.

DM4 – Industry and Multidisciplinary Collaboration

- DM4 has a **substantial correlation with PEO2 and PEO4** because industry interaction and multidisciplinary collaboration enhance practical engineering competence, teamwork, leadership, employability and professional careers.
- It has a **moderate correlation with PEO3 and PEO5** by supporting professional growth, global readiness, continuous learning and responsible industry practices.
- DM4 has a **slight correlation with PEO1** because industry exposure indirectly strengthens the application of electrical engineering fundamentals

Table No.1.1.5.1: Mapping of PEOs with mission.

PEO Statements	DM1 – To provide quality education in Electrical Engineering through effective teaching–learning practices, outcome-based education and modern laboratory facilities.	DM2 – To promote applied research, innovation and problem-solving in power systems, renewable energy and emerging electrical technologies.	DM3 – To develop practical skills, ethical values, lifelong learning abilities and an entrepreneurial mindset for successful careers in industry, academia, research and society.	DM4 – To strengthen industry–institute interaction and multidisciplinary collaboration to enhance employability, professional competence and global readiness.

PEO1 – Proficiency: Graduates will apply strong foundations in electrical engineering, power systems and allied engineering sciences to analyse, design, operate and maintain complex electrical systems.	Quality teaching, outcome-based education and modern laboratory facilities directly develop strong engineering fundamentals and technical competency.	Applied research and problem-solving strengthen analytical, design and technical abilities required for complex electrical systems.	Practical skills and professional development indirectly reinforce the application of electrical engineering fundamentals.	Industry interaction provides exposure to real engineering systems and supports the practical application of technical knowledge.
PEO2 – Practice: Graduates will develop and implement practical, safe, economical and sustainable solutions for power, energy, industrial and multidisciplinary applications.	Effective teaching and laboratory practices equip graduates with the knowledge and practical skills required to develop engineering solutions.	Research and innovation in power systems, renewable energy and emerging technologies support the development of safe, economical and sustainable solutions.	Practical skills, ethical values and entrepreneurship enable graduates to implement responsible and feasible engineering solutions.	Industry–institute interaction and multidisciplinary collaboration directly enhance the ability to develop and implement practical industrial solutions.
PEO3 – Progress: Graduates will pursue higher education, research, professional certifications, competitive examinations, innovation, entrepreneurship and continuous upskilling to adapt to emerging technologies.	Strong academic foundations and outcome-based learning prepare graduates for higher education, professional certifications and competitive examinations.	Research, innovation and emerging technologies directly encourage higher studies, research aptitude and continuous technical development.	Lifelong learning, innovation and entrepreneurship directly support professional advancement, higher education and continuous upskilling.	Industry exposure and professional interaction help graduates identify emerging skill requirements and pursue continuous career development.
PEO4 – People: Graduates will establish successful professional careers and contribute effectively as team members, leaders and collaborators in multidisciplinary and multicultural environments.	Teaching–learning activities and laboratory work provide opportunities for communication, teamwork and collaborative learning.	Collaborative research and innovation projects support multidisciplinary teamwork and develop leadership qualities.	Professional skills, ethical values and career development activities strengthen teamwork, communication and leadership abilities.	Industry–institute interaction and multidisciplinary collaboration directly develop employability, teamwork, leadership and professional competence.
PEO5 – Principles: Graduates will practice their profession with ethical values, social responsibility, environmental consciousness and commitment towards sustainable development and national progress.	Quality education and outcome-based practices create awareness of professional responsibilities and responsible engineering conduct.	Research in renewable energy and green technologies supports environmental consciousness and sustainable development.	Ethical values, social responsibility and professional development directly promote responsible engineering practices and service to society.	Industry interaction exposes graduates to professional ethics, safety practices, environmental regulations and socially responsible engineering.

1.2 Curriculum Structure and Features (30)

1.2.1 Program Curriculum Structure (5)

Edit

ID	Course Code	Course Title	Classroom Instruction (CI) (in hours per semester)		Lab Instruction (LI) (in hours per semester)	Term Work (TW) and Self Learning (SL) (TW+ SL) (in hours per semester)
			L	T	P	SL
1	C101	Engineering Mathematics-I	45	15	0	60
2	C102	Engineering Chemistry	45	15	0	60
3	C103	Engineering Mechanics	30	15	0	45
4	C104	Computer Programming in C	45	0	0	45
5	C105	Workshop Practices	0	0	60	0
6	C106	Engineering Chemistry Lab	0	0	30	0
7	C107	Engineering Mechanics Lab	0	0	30	0
8	C108	Engineering Mathematics-II	45	15	0	60
9	C109	Engineering Physics	45	15	0	60
10	C110	Engineering Graphics	30	0	0	30
11	C111	Communication Skills	30	0	0	30
12	C112	Energy and Environment Engineering	30	0	0	30
13	C113	Engineering Physics Lab	0	0	30	0
14	C114	Engineering Graphics Lab	0	0	60	0
15	C115	Communication Skills Lab.	0	0	30	0
16	C116	Seminar	0	0	30	0
17	C201	Engineering Mathematics-III	45	15	0	60
18	C202	Electrical Machines - I	45	15	0	60
19	C203	Electrical and Electronics Measurement	45	15	0	60
20	C204	Engineering Material Science	45	0	0	45
21	C205	Electrical Machines-I Lab	0	0	30	0
22	C206	Electrical and Electronics Measurement Lab	0	0	30	0

23	C207	Mini Project-I	0	0	60	0
24	C208	Internship-I Evaluation	0	0	0	30
25	C209	Network Theory	45	15	0	60
26	C210	Power System	45	15	0	60
27	C211	Electrical Machine-II	45	15	0	60
28	C212	Analog and Digital Electronics	45	0	0	45
29	C213	Advance Renewable Energy Sources	45	0	0	45
30	C214	Network Theory Lab	0	0	30	0
31	C215	Power System Lab	0	0	30	0
32	C216	Electrical Machine-II Lab	0	0	30	0
33	C217	Analog and Digital Electronics lab	0	0	30	0
34	C301	Power System Analysis	45	15	0	60
35	C302	Microprocessor and Microcontroller	45	0	0	45
36	C303	Power Electronics	45	15	0	60
37	C304	Industrial Automation	45	0	0	45
38	C305	Electrical Safety	45	0	0	45
39	C306	Power System Analysis Lab	0	0	30	0
40	C307	Microprocessor and Microcontroller Lab	0	0	30	0
41	C308	Power Electronics Lab	0	0	30	0
42	C309	Mini project-II	0	0	30	0
43	C310	Internship-II Evaluation	0	0	0	30
44	C311	Switchgear and Protection	45	0	0	45
45	C312	Electrical Machine Design	45	15	0	60
46	C313	Control System Engineering	45	15	0	60
47	C314	Flexible AC Transmission System	45	0	0	45

48	C315	Power Plant Engineering	45	0	0	45	
49	C316	Switchgear and Protection Lab	0	0	30	0	
50	C317	Electrical Machine Design Lab	0	0	30	0	
51	C318	Control System Engineering Lab	0	0	30	0	
52	C319	Seminar	0	0	60	0	
53	C401	High Voltage Engineering	45	15	0	60	
54	C402	Power System Operation & Control	45	15	0	60	
55	C403	Electrical Utilization	45	0	0	45	
56	C404	Mechatronics	45	0	0	45	
57	C405	Electric and Hybrid Electric Vehicles	45	0	0	45	
58	C406	High Voltage Engineering Lab	0	0	30	0	
59	C407	Inhouse Project Part-I /Miniproject-III Internship-III Evaluation	0	0	60	0	
60	C408	Internship-III Evaluation	0	0	0	30	
61	C409	NPTEL online courses	45	0	0	45	
62	C410	Inhouse Project Part-II /Internship in Industry.	0	0	78	312	
		Total	**1470**	**255**	**948**	**2127**	

1.2.2 Components of Program Curriculum (5)

Course Components	Curriculum Content (% of total number of credits of the program)	Total number of contact hours
Basic Sciences	13.750%	660.00
Basic Engineering	11.250%	540.00
Humanities and Social Scie	1.875%	90.00
Program Core	41.250%	1980.00
Program Electives	7.500%	360.00
Open Electives	7.500%	360.00
Project(s)	11.250%	540.00
Internships/Seminars	3.750%	180.00
Any other (Please specify)	1.875%	90.00
Total number of Credits		

1.2.3 State the Process Used to Identify Extent of Compliance of the University Curriculum for Attaining the Program Outcomes and Program Specific Outcomes as mentioned in Annexure II. Also Mention the Identified C

Process Used to Identify the Course Gap

1. **Mapping of Courses with POs/PSOs**
   - Each course in the university curriculum (theory, practical, and project work) is carefully mapped with relevant Program Outcomes (POs) and Program Specific Outcomes (PSOs).
   - Course Outcomes (COs) are framed and correlated with POs/PSOs using a correlation scale (e.g., 1 – low, 2 – medium, 3 – high).
2. **Curriculum Gap Analysis**: A Curriculum Gap is analysed by comparing the Model syllabus of AICTE and DBATU University.
3. **PO/PSO Attainment Measurement**
   - Direct Assessment: Based on student performance in internal assessments, university examinations, labs, and project work.
   - Indirect Assessment: Based on surveys (exit survey).
   - The combined results indicate the level of compliance of the curriculum with POs/PSOs.
4. **Identification of Gaps**
   - If some POs/PSOs are not fully addressed by the university curriculum, they are documented as curricular gaps.
   - The extent of compliance is then reported as Fully Compliant, Partially Compliant, or Not Compliant for each PO/PSO.
   - Content-based and course-based gaps identified by comparing the syllabi of AICTE and DBATU -University.
   - Insufficient practical exposure in emerging domains and cutting-edge labs.

The curricular gaps identified are generally bridged by conducting add-on courses, industry-oriented training, value-added courses, guest lectures, seminars, internships, and MOOCs (NPTEL/SWAYAM, Coursera, etc.).

Course Component	Curriculum Content (% of Total Programme Credits)	Revised PEOs Mapped	Revised PSOs Mapped
Mathematics	7.50%	PEO1	PSO1, PSO2
Basic Science	8.75%	PEO1, PEO2, PEO5	PSO1, PSO2
Basic Engineering	18.13%	PEO1, PEO2	PSO1, PSO2
Computing	1.88%	PEO1, PEO2, PEO3	PSO2, PSO3
Humanities	1.88%	PEO3, PEO4, PEO5	PSO3
Professional Core – Theory	28.13%	PEO1, PEO2, PEO3	PSO1, PSO2
Professional Core – Practical	13.13%	PEO1, PEO2, PEO4	PSO1, PSO2, PSO3
Professional Electives	7.50%	PEO1, PEO2, PEO3, PEO5	PSO1, PSO2, PSO3
Projects / Audit Courses	13.13%	PEO2, PEO3, PEO4, PEO5	PSO1, PSO2, PSO3

Course Component	Affiliating University	AICTE Model Curriculum
Mathematics	✔	✔

Basic Science	✔	✔
Basic Engineering	✔	✔
Computing	✔	✔
Humanities	✔	✔
Professional core (Theory)	✔	✔
Professional core (Lab)	✔	✔
Professional electives	✔	✔
Project, Audit courses	✔	✔

PROCESS TO IDENTIFY GAPS IN THE SYLLABUS:

The gaps are identified using 2 methods.

1. Surveys
2. Curriculum map.
3. Benchmarking the Curriculum

Five different surveys are conducted at different frequencies from different stakeholders of the program. Two survey forms and samples of surveys taken (senior academicians and employer surveys) are shown.

I. Process to identify curricular gaps for courses through surveys:

1. Alumni Survey

- Measures the degree to which past students believe they achieved program-level learning outcomes.
- Overall satisfaction with the program.
- Overall satisfaction with the program delivery.
- Information on current professional or academic status.
- Typically collected every three-four years.

2. Industry/Employers Survey

- Provides general information on current industry trends.
- Desirable graduate attributes.
- Overall perceptions of program quality.
- Strengths and expectations of graduates.
- Typically collected every three-four years.

3. In Program Students Survey

- Measures the degree to which current students believe they are achieving program-level learning outcomes.
- Overall satisfaction with the program.
- Overall satisfaction with the program delivery.
- Typically collected every two years.

4. Exiting Students Survey

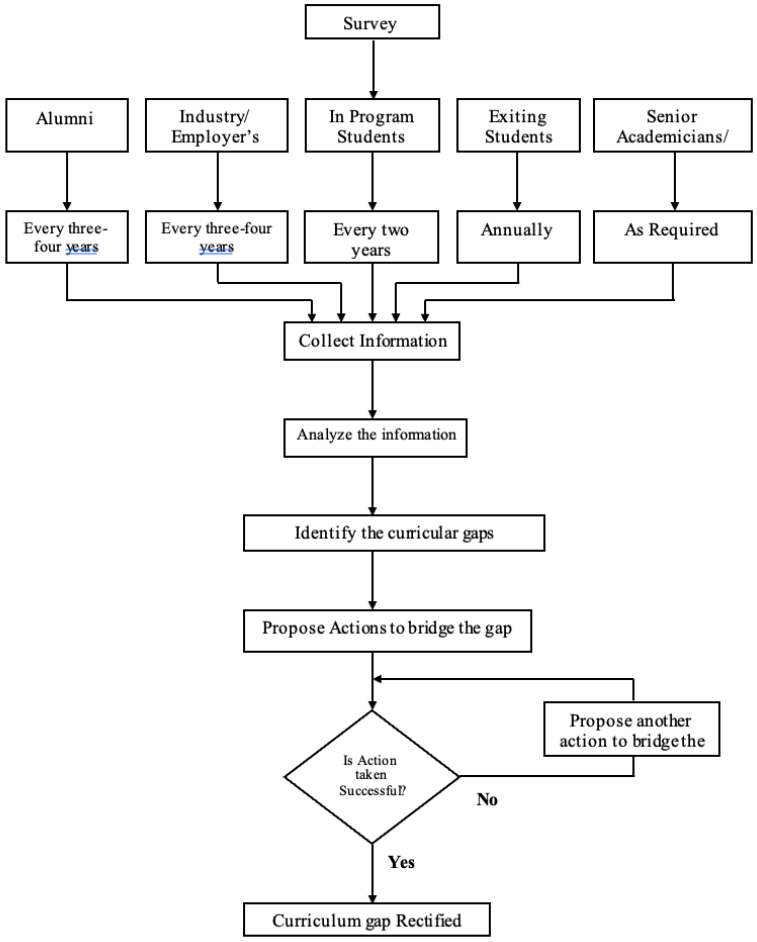
- Measures quality of the program and satisfaction with curriculum.

- An overall program delivery.
- Collected annually.

5. Senior Academicians/Faculty Survey

- Provides general information on the quality of the program.
- Comparison with the syllabi of premier institutes.
- Strategic directions for program.
- Satisfaction with curriculum.
- Collected as required.

Process to identify curricular gaps through Survey



II. Curriculum Mapping

- Programme outcomes give a programme its goals and directions. The curriculum, pedagogy and assessment support the attainment of these outcomes to make the programme outcome-based. Curriculum mapping is a which this is achieved.

- Curriculum mapping is an analysis of the provision of opportunities for learning in a curriculum in relation to the curriculum's intended learning outcomes.
- The curriculum map is based on Table 3.1.3 A where the faculty teaching a particular subject will need to associate their subject outcomes with the programme outcomes.
- Judging by the subject outcome statements, identify the extent to which the programme outcome is being addressed in the subject.

Curriculum Mapping

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- The curriculum map is based on Table 3.1.3 A where the faculty teaching a particular subject will need to associate their subject outcomes with the programme outcomes.
- Judging by the subject outcome statements, identify the extent to which the programme outcome is being addressed in the subject.

Analysis of Curriculum Map to Identify Gaps in the Curriculum

The analysis of the curriculum map shows that the level of achievement of the POs-1-5 is contributed by 59.25% of courses, PO6-20%, PO7- 16.9%, PO8- 4.6%, PO9- 18.46%, PO10- 18.46%, PO11- 18.46%, PO12- 43.07%

Classifying the Gaps in the Curriculum

The gaps in the curriculum, identified through surveys, fall in three categories:

- **Topic gaps**
- **Depth gaps**
- **Knowledge gaps**

Topic gap:

If a topic is determined to be necessary, but does not exist in the current curriculum, that topic is identified as a topic gap.

Depth gap:

The courses quickly become out of date because technology is rapidly changing and the material missing is related to courses that already exist in the curriculum. If courses in the current curriculum state that a desired topic is addresse knowledge in the area is not appropriate, then the topic is a depth gap. Depth gap exists due to lack of modernization of course content or in-depth coverage of important topics.

Knowledge Gap

If courses in the current curriculum address a desired topic, but students cannot take the courses due to the inflexibility in program constraints, then that topic is identified as a knowledge gap.

The gaps can be addressed by conducting

- Expert Lectures
- Workshops
- Group Assignments
- Group Discussion
- Demonstration of practical cases
- Quiz, Videos, PPTs
- Seminar, Tutorials
- Mini Projects
- Industry Internships

Gaps in the Curriculum Input from Survey

Identified Gaps	Action Taken / Proposed	Beyond Syllabus Content Addressed

Limited practical exposure to microcontroller programming, embedded systems and interfacing beyond basic programming concepts	Arduino Workshop – Introduction to IoT conducted	Arduino programming, microcontroller applications, sensor interfacing, embedded systems and basic IoT
Limited exposure to systematic problem identification, ideation and development of practical engineering solutions	Problem Solving Fit and Ideation programme conducted	Problem identification, design thinking, ideation, teamwork and development of innovative engineering solutions
Limited exposure to professional communication, technical interviews, aptitude and career preparedness	How to Prepare and Face TCS Ninja Technical Interview session conducted	Technical-interview preparation, aptitude, professional communication, confidence and industry expectations
Limited practical awareness of energy conservation, efficient utilisation of electrical energy and sustainability	Energy Conservation Day and Energy Conservation for the Future programmes conducted	Energy conservation, energy efficiency, reduction of energy wastage, energy management and sustainable energy practices
Gap between theoretical concepts of electrical machines and their practical construction, operation and applications	Fundamentals of Machines programme conducted	Construction, operating principles, characteristics and practical applications of electrical machines
Limited practical exposure to modern sensors, data acquisition and IoT-enabled measurement systems	Basic IoT & Sensors Workshop conducted	Sensors, sensor interfacing, data acquisition, IoT architecture and smart monitoring systems
Limited exposure to computational techniques, modelling and simulation of electrical engineering problems	Workshop on MATLAB for Electrical Engineering conducted	MATLAB programming, numerical analysis, electrical-system modelling and simulation
Limited practical exposure to embedded controllers, sensors and digital interfacing applications	Basic IoT & Sensors Workshop conducted	Sensor interfacing, digital systems, IoT implementation and connected electronic systems
Gap between fundamental power-electronics concepts and their practical applications	Application of Power Electronics in Electrical Engineering workshop conducted	Power semiconductor devices, converters and industrial applications of power electronics
Limited hands-on exposure to PLC programming, automation hardware and emerging industrial technologies	Five-Day Workshop on Basic PLC and Drone Technology conducted	PLC programming, industrial automation, sensors, embedded systems and drone technology

Limited competency in converting engineering concepts into innovative and application-oriented projects	Workshop on Innovative Project Development conducted	Project ideation, problem identification, design methodology, prototyping and innovative solutions
Limited practical exposure to controller implementation, automation and sensor integration	Five-Day Workshop on Basic PLC and Drone Technology conducted	PLC-based control, automation, sensors, programming and practical control implementation
Limited understanding of actual electrical contracting practices, statutory procedures and field practices	Practical Industry Knowledge, Career Opportunities and Essential Skills session conducted	Government electrical contracting, tender processes, field practices and professional responsibilities
Limited exposure to professional behaviour, communication and professional responsibility	Behaviour of Engineering Students at Campus programme conducted	Professional behaviour, discipline, interpersonal relationships, communication and responsibility
Need to strengthen innovative problem solving, project planning, teamwork and prototype-development skills	Workshop on Innovative Project Development conducted	Problem identification, ideation, project design, prototype development and teamwork
Need for awareness of outcome-based learning, global engineering standards and lifelong professional development	Blooms Taxonomy and Washington Accord sessions conducted	OBE, Graduate Attributes, higher-order learning, global engineering standards and lifelong learning
Limited exposure to entrepreneurship, innovation and conversion of technical solutions into business opportunities	Entrepreneurship and Innovation as Career Opportunities and Converting Innovation into a Startup sessions conducted	Innovation ecosystem, entrepreneurship, start-up development, leadership and job creation

1.2.4 State the Delivery Details of the Content beyond the Syllabus for the Attainment of Program Outcomes and Program Specific Outcomes (10)

Table No.1.2.4.1: Details of events organized to cover content beyond the syllabus.

(CAYm1) 2024-25

S.No	PO/PSO as Gap Identified	Name of The Event	Date (DD/MM/YYYY)of The Event	Resource Person	Organization	R
1	PO2, PO3, PO4, PO5, PO9, PO10, PO	Workshop on Innovative Project Develo	24/10/2024	Er. Nilesh Wagh	Co-Founder & CEO, ElectroSoft Techno	P
2	PO1, PO2, PO4, PO6, PO7, PO9, PO1(	Practical Industry Knowledge, Career O	05/12/2024	Mr. Kaushik Waghulde, Kumar Electrica	Kumar Electricals, Registered Governm	P
3	PO1, PO2, PO3, PO4, PO5, PO6, PO9,	Five-Day Workshop on Basic PLC and I	06/05/2025	Er. Nilesh Wagh	Co-Founder & CEO, ElectroSoft Techno	P

(CAYm2) 2023-24

S.No	PO/PSO as Gap Identified	Name of The Event	Date (DD/MM/YYYY)of The Event	Resource Person	Organization	R
1	PO1, PO2, PO4, PO5, PO9, PO12, PS(	Fundamentals of Machines	26/09/2023	Prof. A. S. Zope	Government Polytechnic, Jalgaon	P
2	PO1, PO2, PO3, PO4, PO5, PO9, PO1(	Basic IoT & Sensors Workshop	09/10/2023	Prof. Nemichand Saini & Prof. Sachin M	GF's GCOE, Jalgaon	P
3	PO6, PO7, PO8, PO9, PO10, PO12	Behaviour of Engineering Students at C	17/10/2023	Prof. Mahesh H. Patil,	GF's GCOE, Jalgaon	P
4	PO1, PO2, PO3, PO4, PO5, PO9, PO1(	Workshop on MATLAB for Electrical En	11/03/2024	Prof. Amit Mhaskar,	GF's GCOE, Jalgaon	P
5	PO1, PO2, PO3, PO4, PO5, PO9, PO1	Application of Power Electronics in Elec	25/05/2024	Prof. A. A. Barhate,	Electrical Engineering Department, GF's	P
6	PO6, PO7, PSO1	Expert Talk on Energy Conservation for	17 May 2023	Mr. Gaurav Waghulde, Assistant Engine	Na	P

(CAYm3) 2022-23

S.No	PO/PSO as Gap Identified	Name of The Event	Date (DD/MM/YYYY)of The Event	Resource Person	Organization	R
1	PO9, PO10, PO12, PSO2	How to Prepare and Face TCS Ninja Te	15/09/2022	Mr. Tushar Chaudhari	Assistant System Engineer, TCS	P
2	PO3, PO8, PO9, PO10, PO11, PO12, P	Entrepreneurship Development Progran	11/11/2022	Mr. Vinod Tupe & Mr. Dinesh Gawali	NA	P
3	PO3, PO8, PO9, PO10, PO11, PO12, P	Entrepreneurship and Innovation as Ca	17/01/2023	Prof. Daniel C	Hindustan Institute of Technology and S	P
4	PO2, PO3, PO4, PO5, PO9, PO10, PO	Problem Solving Fit and Ideation	23/01/2023	Prof. Vijay Chaudhary	Director, Biomedical Engineering	P
5	PO1, PO2, PO10, PO12, PSO1, PSO2	Bloom's Taxonomy	03/02/2023	Prof. A. A. Barhate	Electrical Engineering Department, GF's	P
6	PO8, PO9, PO10, PO12, PSO1	Washington Accord	01/03/2023	Prof. Mahesh H. Patil	GF's GCOE, Jalgaon	P
7	PO1, PO5, PO6, PO7, PO10, PO12, PS	Energy Conservation Day	01/05/2023	Prof. A. A. Barhate	Electrical Engineering Department, GF's	P
8	PO6, PO7, PO8, PO10, PO12, PSO1, P	Energy Conservation for the Future	17/05/2023	Mr. Gaurav Waghulde	Assistant Engineer, MSEDCL, Jalgaon	P
9	PO1, PO2, PO3, PO4, PO5, PO9, PO1(	Arduino Workshop – Introduction to IoT	15/06/2023	Prof. A. D. Vishwakarma, Prof. V. D. Cha	GF's GCOE, Jalgaon	P

1.3 PO, PSO and their Mapping with Courses (20)

1.3.1 POs and PSOs (5)

PSO1	Power System and Electrical Equipment: Apply the principles of electrical engineering to analyze, design, operate, and maintain power systems, electrical machines, power electronics, and protection syster
PSO2	Automation and Sustainable Technologies: Design, implement, and evaluate solutions for industrial automation, control systems, renewable energy systems, electric vehicles, and smart grid applications by and safety aspects.
PSO3	Professional Competency and Lifelong Learning: Demonstrate professional competence through effective communication, teamwork, ethical practices, lifelong learning, research, innovation, entrepreneursh education, and competitive examinations.

1.3.2 Mapping between the Courses and POs/PSOs (10)

PO Number	List of Courses
PO1	BTBS101, BTBS102, BTES103, BTES104, BTES105L, BTBS107L, BTES108L, BTBS201, BTBS202, BTES203, BTES205, BTBS207L, BTES208L, BTES210S, BTBS301, BTEEC302, BTEEC303, BTES3(BTEEP308, BTES211P, BTEEC401, BTEEC402, BTEEC403, BTEEC404, BTEEPE405, BTEEL406, BTEEL407, BTEEL408, BTEEL409, BTEEC501, BTEEC502, BTEEC503, BTEEPLE504, BTEEOE505, BTEEL509, BTEEPE510, BTEEP410, BTEEC601, BTEEC602, BTEEC603, BTEEPE604, BTEEOE605, BTEEL606, BTEEL607, BTEEL608, BTEEM609, BTEEC701, BTEEC702, BTEEPE703, BTEEOE70 BTEEM708, BTEEP610, BTEEPE801, BTEEP802
PO2	BTBS101, BTBS102, BTES103, BTES104, BTES105L, BTBS107L, BTES108L, BTBS201, BTBS202, BTES203, BTES205, BTBS207L, BTES208L, BTES210S, BTBS301, BTEEC302, BTEEC303, BTES3(BTEEP308, BTES211P, BTEEC401, BTEEC402, BTEEC403, BTEEC404, BTEEPE405, BTEEL406, BTEEL407, BTEEL408, BTEEL409, BTEEC501, BTEEC502, BTEEC503, BTEEPLE504, BTEEOE505, BTEEL509, BTEEPE510, BTEEP410, BTEEC601, BTEEC602, BTEEC603, BTEEPE604, BTEEOE605, BTEEL606, BTEEL607, BTEEL608, BTEEM609, BTEEC701, BTEEC702, BTEEPE703, BTEEOE70 BTEEM708, BTEEP610, BTEEPE801, BTEEP802
PO3	BTBS101, BTBS102, BTES103, BTES104, BTES105L, BTBS107L, BTES108L, BTBS201, BTBS202, BTES203, BTES205, BTBS207L, BTES208L, BTES210S, BTBS301, BTEEC302, BTEEC303, BTES3(BTEEP308, BTES211P, BTEEC401, BTEEC402, BTEEC403, BTEEC404, BTEEPE405, BTEEL406, BTEEL407, BTEEL408, BTEEL409, BTEEC501, BTEEC502, BTEEC503, BTEEPLE504, BTEEOE505, BTEEL509, BTEEPE510, BTEEP410, BTEEC601, BTEEC602, BTEEC603, BTEEPE604, BTEEOE605, BTEEL606, BTEEL607, BTEEL608, BTEEM609, BTEEC701, BTEEC702, BTEEPE703, BTEEOE70 BTEEM708, BTEEP610, BTEEPE801, BTEEP802
PO4	BTBS101, BTBS102, BTES103, BTES104, BTES105L, BTBS107L, BTES108L, BTBS201, BTBS202, BTES203, BTES205, BTBS207L, BTES208L, BTES210S, BTBS301, BTEEC302, BTEEC303, BTES3(BTEEP308, BTES211P, BTEEC401, BTEEC402, BTEEC403, BTEEC404, BTEEPE405, BTEEL406, BTEEL407, BTEEL408, BTEEL409, BTEEC501, BTEEC502, BTEEC503, BTEEPLE504, BTEEOE505, BTEEL509, BTEEPE510, BTEEP410, BTEEC601, BTEEC602, BTEEC603, BTEEPE604, BTEEOE605, BTEEL606, BTEEL607, BTEEL608, BTEEM609, BTEEC701, BTEEC702, BTEEPE703, BTEEOE70 BTEEM708, BTEEP610, BTEEPE801, BTEEP802
PO5	BTBS101, BTBS102, BTES103, BTES104, BTES105L, BTBS107L, BTES108L, BTBS201, BTBS202, BTES203, BTES205, BTBS207L, BTES208L, BTES210S, BTBS301, BTEEC302, BTEEC303, BTES3(BTEEP308, BTES211P, BTEEC401, BTEEC402, BTEEC403, BTEEC404, BTEEPE405, BTEEL406, BTEEL407, BTEEL408, BTEEL409, BTEEC501, BTEEC502, BTEEC503, BTEEPLE504, BTEEL507, BT BTEEPE510, BTEEP410, BTEEC601, BTEEC602, BTEEC603, BTEEPE604, BTEEOE605, BTEEL606, BTEEL607, BTEEL608, BTEEM609, BTEEC701, BTEEC702, BTEEPE703, BTEEOE704, BTEEOE7 BTEEP610, BTEEPE801, BTEEP802
PO6	BTBS102, BTES103, BTES104, BTES105L, BTBS107L, BTBS201, BTBS202, BTHM204, BTES205, BTBS207L, BTHM209L, BTES210S, BTES211P, BTEEPE405, BTEEOE505 BTEEP410 BTEEM609 BT BTEEP802 BTES305 BTEEP308 BTEEC402 BTEEL407 BTEEC501 BTEEC503 BTEEC602, BTEEPE604, BTEEOE605, BTEEC702, BTEEPE703, BTEEOE705, BTEEPE801
PO7	BTBS102, BTES105L, BTBS107L, BTBS202, BTHM204, BTES205, BTBS207L, BTHM209L, BTES210S, BTES211P, BTEEPE405, BTEEOE505, BTEEP410, BTEEM609, BTEEP610, BTEEP802
PO8	BTBS102, BTES105L, BTBS107L, BTES108L, BTBS202, BTES203, BTHM204, BTES205, BTBS207L, BTES208L, BTHM209L, BTES210S, BTEEL306, BTEEL307, BTEEP308, BTES211P, BTEEPE405, I BTEEL408, BTEEL409, BTEEPLE504, BTEEOE505, BTEEL507, BTEEL508, BTEEL509, BTEEPE510, BTEEP410, BTEEL606, BTEEL607, BTEEL608, BTEEM609, BTEEOE704, BTEEL707, BTEEM708,
PO9	BTBS101, BTBS102, BTES104, BTBS107L, BTES108L, BTBS202, BTES203, BTHM204, BTES205, BTBS207L, BTES208L, BTHM209L, BTES210S, BTBS301, BTEEC302, BTEEC303, BTES305, BTEEL BTES211P, BTEEC401, BTEEC402, BTEEC403, BTEEC404, BTEEPE405, BTEEL406, BTEEL407, BTEEL408, BTEEL409, BTEEC501, BTEEC502, BTEEC503, BTEEPLE504, BTEEOE505, BTEEL507, BTEEPE510, BTEEP410, BTEEC601, BTEEC602, BTEEC603, BTEEPE604, BTEEOE605, BTEEL606, BTEEL607, BTEEL608, BTEEM609, BTEEC701, BTEEC702, BTEEPE703, BTEEOE704, BTEEOE7 BTEEP610, BTEEP802
PO10	BTBS102, BTES104, BTBS107L, BTBS202, BTHM204, BTES205, BTBS207L, BTHM209L, BTES210S, BTEEC302, BTEEL306, BTEEL307, BTEEP308, BTES211P, BTEEPE405, BTEEL406, BTEEL407, BTEEPLE504, BTEEOE505, BTEEL507, BTEEL508, BTEEL509, BTEEPE510, BTEEP410, BTEEOE605, BTEEL606, BTEEL607, BTEEL608, BTEEM609, BTEEC702, BTEEPE703, BTEEOE704, BTEEO BTEEP610, BTEEPE801, BTEEP802
PO11	BTBS101, BTBS102, BTES103, BTES104, BTES105L, BTBS107L, BTES108L, BTBS201, BTBS202, BTES203, BTHM204, BTES205, BTBS207L, BTES208L, BTHM209L, BTES210S, BTBS301, BTEEC3 BTEEL306, BTEEL307, BTEEP308, BTES211P, BTEEC401, BTEEC402, BTEEC403, BTEEC404, BTEEPE405, BTEEL406, BTEEL407, BTEEL408, BTEEL409, BTEEC501, BTEEC502, BTEEC503, BTEE BTEEL507, BTEEL508, BTEEL509, BTEEPE510, BTEEP410, BTEEC601, BTEEC602, BTEEC603, BTEEPE604, BTEEOE605, BTEEL606, BTEEL607, BTEEL608, BTEEM609

1.4 Course Outcomes and Course Articulation Matrix (30)

1.4.1 Course Outcome (Semester Wise) (15)

No. of Core Courses : 6	**C2 :** 2	**C3 :** 2	**C4**

Note : Number of Outcomes for a Course is expected to be around 6.

Course Code :	C202	Semester :	3

Course Outcome	Statements
C202.1	Explain construction, working principles, and performance characteristics of single-phase and three-phase transformers, including testing and efficiency analysis.
C202.2	Analyze transformer operations under various conditions such as load variation, voltage regulation, parallel operation, and per-unit system.
C202.3	Apply principles of electromechanical energy conversion to determine force, torque, and energy relationships in magnetic systems.
C202.4	Evaluate performance characteristics of DC generators including EMF equation, armature reaction, commutation, and applications.
C202.5	Analyze and select suitable DC motors and special machines (stepper, BLDC, VRM) based on performance characteristics, speed control, and applications.

Course Code :	C209	Semester :	4

Course Outcome	Statements
C209.1	Apply fundamental concepts of active and passive circuit elements and analyze electrical circuits using basic laws.
C209.2	Analyze DC and AC networks using various network theorems and graph theory concepts.
C209.3	Evaluate transient response of electrical circuits using differential equations and initial conditions.
C209.4	Apply Laplace transform techniques and two-port network parameters to solve complex circuit problems.
C209.5	Analyze steady-state behavior, resonance, filters, and frequency response of AC circuits.

Course Code :	C301	Semester :	5

Course Outcome	Statements
C301.1	Model power system components using per-unit system, network matrices (Y-bus, Z-bus), and graph theory.
C301.2	Analyze power flow in power systems using numerical methods such as Gauss-Seidel and Newton-Raphson.
C301.3	Evaluate symmetrical and unsymmetrical fault conditions using sequence networks and impedance matrices.
C301.4	Apply concepts of symmetrical components and fault analysis to determine system performance under abnormal conditions.
C301.5	Assess power system security, contingency analysis, and power quality issues with appropriate mitigation techniques.

Course Code :	C312	Semester :	6

Course Outcome	Statements
C312.1	Explain the principles of electrical machine design, material selection, and design constraints.
C312.2	Design simple electrical apparatus and AC/DC windings using standard design procedures.
C312.3	Analyze and design stator and rotor of three-phase induction motors.

C312.4	Evaluate thermal performance, heating, and cooling methods of electrical machines.
C312.5	Design transformers considering electrical, mechanical, and thermal aspects.

Course Code :	**C401**	**Semester :**	**7**

Course Outcome	Statements
C401.1	Explain electric field stresses, insulation requirements, and surge voltage phenomena in high voltage systems.
C401.2	Analyze conduction and breakdown mechanisms in gaseous insulation including corona and discharge phenomena.
C401.3	Evaluate breakdown characteristics of liquid and solid dielectric materials used in electrical equipment.
C401.4	Analyze overvoltages due to lightning and switching, and design appropriate protection and insulation coordination schemes.
C401.5	Apply generation and measurement techniques of high voltages and currents for testing and research applications.

Course Code :	**C410**	**Semester :**	**8**

Course Outcome	Statements
C410.1	Apply engineering knowledge and prior project work to implement and complete a real-world engineering problem.
C410.2	Analyze and solve practical industrial problems using appropriate tools, techniques, and methodologies.
C410.3	Design, develop, and validate a system/component/process considering safety, societal, and environmental aspects
C410.4	Conduct investigations, interpret results, and integrate learning from industry practices or project work.
C410.5	Demonstrate professional skills including teamwork, ethics, communication, and project management through reports and presentations

1.4.2 Course Articulation Matrix (10)

1 . course name : C2C202

Course	Statements	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
C202.1	Explain con	3	2	1	-	-	-	-	-	1	-	2
C202.2	Analyze tra	3	3	1	1	1	-	-	-	1	-	2
C202.3	Apply princ	3	3	2	2	1	-	-	-	1	-	2
C202.4	Evaluate pe	3	3	1	2	1	-	-	-	1	-	2
C202.5	Analyze an	3	3	2	2	2	-	-	-	1	-	2
Average		**3.00**	**2.80**	**1.40**	**1.40**	**1.20**	**0.00**	**0.00**	**0.00**	**1.00**	**0.00**	**2.00**

2 . course name : C2C209

Course	Statements	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
C209.1	Apply funda	3	2	1	-	1	-	-	-	1	-	2
C209.2	Analyze DC	3	3	1	1	1	-	-	-	1	-	2
C209.3	Evaluate tra	3	3	1	2	1	-	-	-	1	-	2
C209.4	Apply Lapla	3	3	2	2	2	-	-	-	1	-	2
C209.5	Analyze ste	3	3	2	1	2	-	-	-	1	-	2
Average		**3.00**	**2.80**	**1.40**	**1.20**	**1.40**	**0.00**	**0.00**	**0.00**	**1.00**	**0.00**	**2.00**

3 . course name : C3C301

Course	Statements	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
C301.1	Model powe	3	3	1	2	2	-	-	-	1	-	2
C301.2	Analyze pov	3	3	2	3	2	-	-	-	1	-	2
C301.3	Evaluate sy	3	3	2	3	2	-	-	-	1	-	2
C301.4	Apply conc	3	3	2	3	2	-	-	-	1	-	2
C301.5	Assess pov	3	3	2	2	3	1	-	-	1	-	2
Average		**3.00**	**3.00**	**1.80**	**2.60**	**2.20**	**1.00**	**0.00**	**0.00**	**1.00**	**0.00**	**2.00**

4 . course name : C3C312

Course	Statements	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
C312.1	Explain the	3	2	2	1	1	-	-	-	1	-	2
C312.2	Design sim	3	3	3	2	2	-	-	-	1	-	2
C312.3	Analyze an	3	3	3	2	2	-	-	-	1	-	2

C312.4	Evaluate th	3	2	2	3	1	1	-	-	1	-	2
C312.5	Design tran	3	3	3	2	2	1	-	-	1	-	2
Average		**3.00**	**2.60**	**2.60**	**2.00**	**1.60**	**1.00**	**0.00**	**0.00**	**1.00**	**0.00**	**2.00**

5 . course name : C4C401

Course	Statements	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
C401.1	Explain ele	3	2	1	-	1	1	-	-	1	-	2
C401.2	Analyze cor	3	3	1	2	2	1	-	-	1	-	2
C401.3	Evaluate br	3	3	2	2	2	1	-	-	1	-	2
C401.4	Analyze ov	3	3	3	2	2	2	-	-	1	-	2
C401.5	Apply gene	3	2	1	3	3	1	-	-	1	-	2
Average		**3.00**	**2.60**	**1.60**	**1.80**	**2.00**	**1.20**	**0.00**	**0.00**	**1.00**	**0.00**	**2.00**

6 . course name : C4C410

Course	Statements	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
C410.1	Apply engir	3	3	3	2	2	2	2	3	3	2	2
C410.2	Analyze an	3	3	3	2	2	2	2	3	3	2	2
C410.3	Design, dev	3	3	3	3	2	2	2	3	3	2	2
C410.4	Conduct inv	3	3	3	3	2	2	2	3	3	2	2
C410.5	Demonstrat	2	2	2	2	2	2	2	3	3	2	2
Average		**2.80**	**2.80**	**2.80**	**2.40**	**2.00**	**2.00**	**2.00**	**3.00**	**3.00**	**2.00**	**2.00**

1 . Course Name : C202

Course	PSO1	PSO2	PSO3
C202.1	2	1	-
C202.2	2	1	-
C202.3	2	1	-
C202.4	2	1	-
C202.5	3	2	-
Average	**2.20**	**1.20**	**0.00**

2 . Course Name : C209

Course	PSO1	PSO2	PSO3
C209.1	2	1	-
C209.2	3	1	-
C209.3	3	1	-
C209.4	3	1	-
C209.5	3	1	-
Average	**2.80**	**1.00**	**0.00**

3 . Course Name : C301

Course	PSO1	PSO2	PSO3
C301.1	3	1	-
C301.2	3	1	-
C301.3	3	1	-
C301.4	3	1	-
C301.5	3	2	-
Average	**3.00**	**1.20**	**0.00**

4 . Course Name : C312

Course	PSO1	PSO2	PSO3
C312.1	2	1	-
C312.2	3	2	-
C312.3	3	2	-

C312.4	2	1	-
C312.5	3	2	-
Average	**2.60**	**1.60**	**0.00**

5 . Course Name : C401

Course	PSO1	PSO2	PSO3
C401.1	2	1	-
C401.2	3	1	-
C401.3	3	1	-
C401.4	3	2	-
C401.5	3	2	2
Average	**2.80**	**1.40**	**2.00**

6 . Course Name : C410

Course	PSO1	PSO2	PSO3
C410.1	3	3	3
C410.2	3	3	3
C410.3	3	3	3
C410.4	3	3	3
C410.5	3	3	3
Average	**3.00**	**3.00**	**3.00**

1.5 Program Articulation Matrix (5)

Program Articulation Matrix

(10)

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
C101	2.8	2.6	1.25	1	1	PO6	PO7	PO8	1
C102	2.8	2.4	1.6	1.4	1	1.6	1.6	1	2
C103	3	2.6	1.8	1.6	1.8	2	PO7	PO8	PO9
C104	2.4	2.2	2.25	2	2.25	2	PO7	PO8	3
C105	3	1.8	1.6	1.8	2.8	1	1.5	1	PO9
C106	2.8	2.6	1.2	3	2.2	1.2	1.2	1	1.2
C107	2.8	2.6	1.4	2.4	1.4	PO6	PO7	1	1.2
C108	2.8	2.4	1.8	1	1.4	1	PO7	PO8	PO9
C109	3	2.4	2	2	2	2	1.2	1	2
C110	3	1.8	2.2	1	2.2	PO6	PO7	1	2
C111	PO1	PO2	PO3	PO4	PO5	1	1	2	3
C112	3	2.75	2.25	1.25	1.25	2	1.75	1.25	2
C113	2.8	2.8	1.6	2.8	2.6	1.2	1	2	2
C114	3	1.8	2	1	3	PO6	PO7	1	2
C115	PO1	PO2	PO3	PO4	2	1.2	1.8	1.8	2.4
C116	2	2.5	2	2	2	2	2.5	2.33	2.6
C201	3	2.4	1.33	1.5	1.2	PO6	PO7	PO8	1
C202	3	2.8	1.4	1.75	1.2	PO6	PO7	PO8	1
C203	3	2.4	1.4	1.5	2	PO6	PO7	PO8	1
C204	3	2.4	2.4	1.25	1.6	PO6	PO7	PO8	1
C205	2.8	2.4	1.2	3	2.2	PO6	PO7	1.4	1.4
C206	2.8	2.4	1	2.8	2.2	PO6	PO7	1.4	1.4
C207	2.2	2.6	2.2	1.8	2	PO6	PO7	1.4	1.4
C208	2.33	3	2	2	2	2.33	2.5	2.33	3
C209	3	2.8	1.4	1.5	1.4	PO6	PO7	PO8	1
C210	3	2.8	1.6	2.25	1.8	PO6	PO7	PO8	1
C211	3	2.6	1.4	1.5	1.6	PO6	PO7	PO8	PO9
C212	3	2.8	1.8	1.75	1.8	PO6	PO7	PO8	1
C213	2.8	2.6	1.4	1.75	1.8	1	1	1	1
C214	2.6	2.4	1	2.8	1.8	PO6	PO7	1.6	1.6
C215	2.6	2.4	1	2.4	1.8	PO6	PO7	1.4	1.6
C216	2.8	2.4	1.2	3	2.2	PO6	PO7	1.6	1.6

C217	2.8	2.6	1.2	2.8	2.4	PO6	PO7	1.6	1.6
C301	3	3	1.8	2.6	2.2	PO6	PO7	PO8	1
C302	3	2.6	2.2	1.5	2	PO6	PO7	PO8	1
C303	3	2.8	2.2	2.25	2	PO6	PO7	PO8	1
C304	3	2.6	1.8	1.75	2.2	PO6	PO7	1	1
C305	1	1.8	1	1	PO5	3	3	1	2
C306	3	2.8	1.4	2.8	2.6	PO6	PO7	1	1
C307	3	2.6	2.2	2.8	2.2	PO6	PO7	1.4	1.4
C308	2.8	2.6	1.4	3	2.4	PO6	PO7	1.2	1.2
C309	2.6	2.6	2.6	2.2	2	PO6	PO7	2	1.4
C310	2.33	2.67	2	2	2.5	2.33	2.5	2.5	3
C311	3	2.8	2.2	2.25	1.8	PO6	PO7	PO8	1
C312	3	2.6	2.6	2	1.6	PO6	PO7	PO8	1
C313	3	2.8	2	2.25	1.8	PO6	PO7	PO8	1
C314	3	2.8	2	2	2	PO6	PO7	PO8	1
C315	3	2.6	1.2	1.5	1.4	PO6	PO7	PO8	1
C316	2.6	2.2	1	2.8	2.2	PO6	PO7	1.6	1.6
C317	2.8	2.4	2.4	1.5	2.2	PO6	PO7	1.25	2.2
C318	2.8	2.6	1.6	2.8	2.6	PO6	PO7	1	1.2
C319	2	2.25	2	2	2	2	2.5	2.33	2.6
C401	3	2.6	1.6	2.25	2	1.2	PO7	PO8	1
C402	3	2.8	2	2	2	PO6	PO7	PO8	1
C403	3	2.6	1.6	1.5	1.2	PO6	PO7	PO8	1
C404	3	2.8	2.2	1.8	2.2	PO6	PO7	1.3	1.2
C405	3	2.8	2	2	2	PO6	PO7	PO8	1
C406	2.8	2.6	1.2	2.8	2	2.6	PO7	1.25	1.2
C407	2.8	2.8	2.4	2.2	1.8	PO6	PO7	1.8	1.4
C408	2.67	2.33	3	2	2	2.5	3	2.5	3
C409	2.25	2.25	2	2	2.25	PO6	PO7	PO8	PO9
C410	2.8	2.8	2.8	2.4	2	1.4	1.5	1.8	1.4

Course Code	PSO1	PSO2	PSO3
C101	PSO1	PSO2	PSO3
C102	PSO1	PSO2	PSO3

C103	3	1	PSO3
C104	2.8	2.6	1
C105	1.2	1.6	2
C106	PSO1	PSO2	PSO3
C107	2.8	2.6	1
C108	PSO1	PSO2	PSO3
C109	PSO1	PSO2	PSO3
C110	3	2.2	PSO3
C111	PSO1	PSO2	PSO3
C112	2.5	1.25	PSO3
C113	PSO1	PSO2	PSO3
C114	3	3	PSO3
C115	PSO1	PSO2	PSO3
C116	1.5	1	3
C201	2.2	1.2	PSO3
C202	2.2	1.2	PSO3
C203	2.8	1.4	1
C204	2.6	1.2	PSO3
C205	3	1.2	2.5
C206	3	1.6	3
C207	2.6	3	2.2
C208	2	1.33	2.6
C209	2.8	1	PSO3
C210	2.8	1.2	PSO3
C211	2.6	1.2	PSO3
C212	2.8	1.2	PSO3
C213	2.6	2.4	2
C214	2.8	1.2	2
C215	2.6	1.4	2
C216	3	1.2	2
C217	3	1.4	2
C301	3	1.2	PSO3
C302	2.8	1.6	PSO3

C303	2.8	1.6	1
C304	2.8	2.8	1
C305	1	2.4	2
C306	3	1.2	PSO3
C307	2.8	1.4	PSO3
C308	3	1.2	2
C309	2.6	2.8	2.6
C310	2	1.5	2.6
C311	2.8	1.4	PSO3
C312	2.6	1.6	PSO3
C313	2.8	1.4	PSO3
C314	2.8	1.4	PSO3
C315	2.6	1.4	PSO3
C316	2.8	1.2	2.5
C317	2.8	1.8	2
C318	2.6	1.2	PSO3
C319	2	1.5	3
C401	2.8	1.4	2
C402	2.8	1.4	PSO3
C403	2.6	1.4	1
C404	2.8	1.6	PSO3
C405	2.8	1.8	PSO3
C406	2.8	1.4	2
C407	2.6	2.6	2.8
C408	2.33	1.75	2.6
C409	2	2.5	2.8
C410	2.8	3	2.6

2 OUTCOME-BASED TEACHING LEARNING (120)

2.1 Describe Processes Followed to Ensure Quality of Teaching & Learning (20)

GF's Godavari college of Engineering, Jalgaon, affiliated with Dr. Babasaheb Ambedkar Technological University, Lonere (DBATU), has developed a robust and well-structured educational framework designed to ensure efficient and effective learning experiences fo aligned with modern pedagogical practices and focuses on delivering a curriculum that not only meets academic standards but also fosters the overall development of students, preparing them for future challenges.

GF's GCOE follows the Choice Based Credit System (CBCS), which provides students with flexibility and autonomy to choose courses based on their interests and career aspirations. This system allows students to personalize their academic journey while m necessary for success. The Institute publishes an academic schedule every semester, detailing course schedules, internal assessments for both theory and laboratory courses. The academic schedule is synchronized with the university calendar, enabling stude academic and extracurricular activities efficiently.

The Heads of Departments (HODs) assign courses to faculty members based on their areas of specialization and preferences, ensuring that the teaching load is distributed fairly. This course allocation is completed at least a month before the semester begins, g prepare. Each course has clearly defined Course Outcomes (COs), which are prescribed by the DBATU. These COs are mapped to Program Outcomes (POs) and Program-Specific Outcomes (PSOs), ensuring a cohesive and outcome-oriented approach to learning.

Each faculty prepares a course file that includes teaching schedule, study materials, lecture notes, assignments, question banks, and list of experiments. Modern teaching methodologies, including digital resources, collaborative learning, and real-world applications, a effectively. The HODs periodically monitor course progress to ensure adherence to the academic schedule and make necessary adjustments based on student feedback and performance in Continuous Assessments (CA). This process ensures the implementation (OBE) principles, ensuring that students not only understand theoretical concepts but also develop practical skills.

GF's GCOE also places significant emphasis on industry readiness of the students. In addition to classroom teaching, students visit various industries, carry out industrial internships etc. that enhance their practical skills and prepare them for real-world challenges. Th competitive edge in the job market.

To support diverse learners, GF's GCOE adopts a differentiated approach. Slow learners are provided with remedial classes and counseling to help them catch up, while fast learners are encouraged to pursue advanced topics through self-study, participation in vari conferences and seminars. This approach ensures that all students receive the support they need to succeed.

In conclusion, GF's GCOE educational framework is designed to provide students with a well-rounded education that aligns with academic, industry, and personal development goals. By focusing on flexible learning, industry engagement, and individualized support, with the knowledge, skills, and confidence necessary to excel in their careers and beyond.

Pedagogical Initiatives

The institute has included Soft Skill Development (SSD), Carrier Prospects and Planning (CPP) in the curriculum and kept one class every week to the 3rd and 4th year students. Training and placement cell every year organizing personality development training / a workshops in association with Tata consultancy (TCS), Naandi foundation, Columbus IT and management consultant etc.

Processes to improve quality of teaching and learning:

SL. NO	Teaching-Learning Processes
1	Real time Examples
2	Interactive classrooms
3	Quality of laboratory experiments with regard to conducting experiments
4	Collaborative learning
5	Encouraging bright students
6	Assisting weak students
7	Power Point Presentation (PPT)
8	Subject video lectures
9	Group Discussion
10	Assignments
11	Tutorials
12	Self-learning facility
13	Co-curricular activities
14	Internal assessment Test
15	Industrial visits and internship/ training
16	Competitions

1. Real time Examples:

The teachers are using real time examples while teaching in the classroom. It has following benefits.

- Real world examples demonstrate the complexity and unpredictability of real issues, and can stimulate critical thinking.

- Real world examples help students think more about solutions, rather than just focusing on problems.
- Content delivery for theory and laboratory courses utilizes both conventional and modern pedagogical methods these include blackboard teaching, visual aids, seminars, industrial visits. Additionally, Faculty integrate real world examples to enhance apl

2. Interactive classrooms:

Classes are made more interactive by encouraging student participation as follows:

- Asking students to elaborate something that they have learnt in the class.
- Ask students to answer other student's questions.
- Incorporating the lecture with a sample exam question.
- Asking students to interpret a statistic, a graph, a chart, or another visual image.
- Conducting a problem-solving exercise in the class.
- Conducting student presentations in the class.
- Asking questions that involve cognitive skills like comprehension, analysis and evaluation.
- Asking students to summarize the main points that they learned in class.
- Asking the students to explain the relevance, utility, or significance of the information presented in the class.

3. Quality of laboratory experiments with regard to the conduct of experiments:

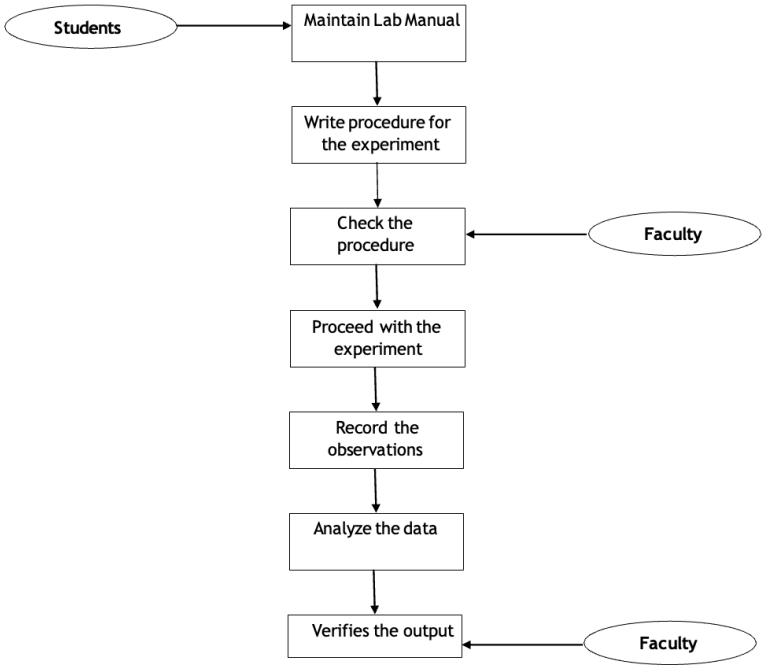
Electrical engineering department has well equipped laboratories. All experiments prescribed in the curriculum are conducted in the lab. The care is taken to maintain the lab. Details are as follows.

- A lab manual as per prescribed experimental list are prepared and kept in each laboratory.
- The objective and the procedure for all experiments in the prescribed syllabus is available in the lab manual.
- The practical is conducted as per the university scheme.
- Every batch consists of around 20-25 students. Each batch is further split into smaller groups of 4 to 5 students. Depends on strength.
- Lab manuals are given to students before start of the experiment.
- Students perform the experiments under the guidance of technical staff and faculty, so that doubts if any, related to the experiments can be clarified in the lab itself.
- Viva-voce is conducted at the end of every experiment to check the students understanding level.
- The student writes complete experiment along with observation results and these are checked by faculty.

4. Continuous Assessment in the Laboratory

- Each student maintains observation copy to record the details of work done in each laboratory session.
- The students are directed to write the step by step procedure to achieve a solution for the given experiment.
- The faculty-in-charges checks the procedure and then students can proceed with doing the experiment.
- Student records the observation in the observation copy while doing the experiment.
- Students also asked to analyze the data to plot graph or other related work.
- The final output verified by the faculty-in-charges.
- Students have to write the details of the experiments done in the laboratory to the prescribed lab journal book.
- Students can appear for the University practical Examination only if the record is certified by the faculty-in-charge.

FLOW CHART: PROCEDURE OF EXPERIMENTS AND ITS EVALUATION



5. Collaborative learning:

- Department motivates for the collaborative learning through following activities:
- Groups comprising a maximum of four to five students are formed in each course.
- Each group is assigned tasks (Activity) by the faculty and a report on the activity will be prepared by the respective group.
- An assessment on the report will be done by the faculty to analyze the expected outcome from the activity is achieved.
- The focus of the tasks is on learning new technologies, enhancing the knowledge on a particular topic, studying new tools and software to be in place with the industry, etc.

6. Encouraging Bright Students:

Student's academic achievements and excellence are recognized through by awarding medals and certificates. During annual day students who rank first and second are honored with medals/ trophy/ certificates/ cash prizes every year to highlight their outstand

- The measures taken to encourage bright students decided by the respective faculty.

The measures taken may includes

- Encouraging students for participation in seminars/ competition/ conferences
- Students achieving excellence awards are also recognized and honored at the institute.
- Recommendation of some quality references, books to be referred, e-resources.
- Introduce a new tool/software.

7. Assistance to weak students:

After identification of weak students, assistance is provided to them with following details

Theory Subjects:

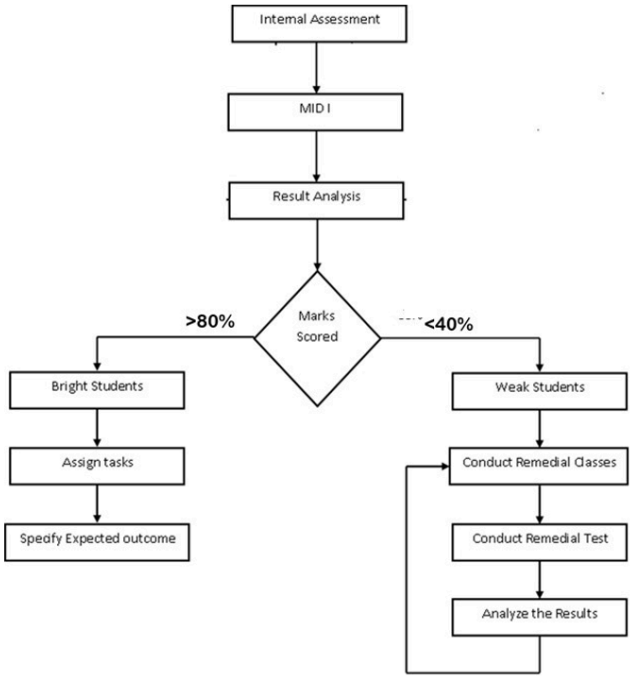
- After first mid sessional examination, the faculty will analyze the results and categorize the students into two groups.
- The students who scored less than 40% marks belong to group of weak students and above

80% belong to the group of bright students.

- Remedial classes are conducted for the weak students for each course.
- The number of hours taken for remedial classes will be decided by the faculty as required.
- A remedial test will be conducted for the weaker students thereafter and the results are analyzed to identify the impact of the remedial classes.

Additional measures will be taken by the respective faculty in cases where the students fail to achieve the objective of remedial classes.

Process to identify Weak Students and Bright Students in Theory Subjects



Process to identify Weak Students and Bright Students in Theory Subjects

8. Power Point Presentations (PPT)

Power Point Presentation (PPT) is used in courses which geared toward information exchange than skill development. The benefits of using presentations include:

- Engaging multiple learning styles.
- Increasing visual impact.
- Improving student focus.

9. Video Lectures

Video lectures have been made available to the students for the study. It has following benefits to the students

- Stimulate a focused discussion guided by the instructor.
- An archived resource is available in the library that students can access.
- For certain topics and concepts video can help students who have lower prior knowledge to process the concept more easily.
- Provide multiple perspectives of the same material rather than relying on a single viewpoint.

10. Group Discussion (GD):

Group Discussions can be an excellent strategy for

- Enhancing student motivation
- Fostering intellectual ability
- Encouraging democratic habits
- Boosts the confidence and Intrapersonal skills

It creates opportunities for students to practice and sharpen a number of skills, including the ability to articulate and defend positions, consider different points of view, and enlist and evaluate evidence. GD helps students in campus placement. T&P c campus placements also conducting employability enhancement course.

11. Assignments:

The purpose of the writing assignments is to inculcate lifelong learning and Communication Skills among the students so that they obtain the necessary information, Literacy skills to complete the Engineering Curriculum.

- Writing assignments is a flexible means of demonstrating learning as well as a method of exploring ones thinking to stimulate learning.
- Assignments are given for each subject.

12. Tutorials:

Tutorials are given to the students which are generally intended to

- Enable students to pursue their individual academic interests within the context of the subject.
- Help students to gain a deep understanding of the subject matter.
- Develop students' ability to think and act like a professional in their discipline.
- Develop students' basic academic skills like identification and evaluation of relevant

resources, effective communication, effective time-management etc.

- One hour in every week is allotted for conducting tutorials as per the prescribed university curriculum.

13. Self-Learning Facility:

The self-learning facilities provided in the Institute are as follows:

- A Common Computing Centre equipped with 230 computers with internet facility.
- Adequate computers having necessary system and application

software's is functioning is available for the students to carry out their project work.

- A Wi-Fi facility of 300 Mbps speed is available which can be accessed anywhere in the academic premises.
- A Central Library with an excellent collection of Books, Journals, e-journals, Technical magazines, News Papers materials in engineering and technology, science, humanities and management.
- The digital library provides IP enabled access to the students by which a large number of full texts on-line journal databases from the various publishers are made available.

14. Co-curricular Activities:

Department always focuses on co-curricular activities. The details are as follows.

15. Lectures/ Seminars:

- Continuous training, education and exposure to new people and ideas can lead to continuous improvement, motivation, and engagement.
- Seminars and Expert lectures add to the skill set and competency of staff and students.
- Every year a number of eminent personalities are invited from a variety of fields, articulating their thoughts and elaborating on their well known works, ranging from current rages to the age old topics.
- Lectures are known for informative and interactive sessions between speakers and the enthusiastic audience.
- A seminar/lecture is a complete learning experience as the lectures, demonstrations, visual materials, and interactive tools are appropriately networked throughout the seminar content for full educational impact.

16. Workshops/Training Programs/Conferences:

- Workshops and training programs include all the elements of the seminar but with the largest portions emphasized on hands-on practice.
- The laboratory phase is designed to reinforce, imprint and bring forward an immediate functioning dimension to the student's eyes and hands by implementing and practicing the actual concept or technique that was taught through the lecture and demonstra
- Conference is arranged Each year at Institute ICREAST – International Conference on Engineering Research Science and Technology.

17. Career Guidance/ Motivational Talks:

- Career guidance and counseling program helps students understand themselves, explore the career options available to them today and in the future, and make realistic academic and career plans and decisions.
- It also results in an increased interest in learning.
- These programs help individuals acquire the knowledge, skills, and experience necessary to identify options, explore alternatives and succeed in society.
- The purpose of the motivational talks is to encourage the personal and professional growth in the students.
- Every years T&P cell organizes career guidance program for third and final year students

18. Internal Assessment Tests:

Department regularly conducts assessment and motivates for the continuous assessment.

- one Mid sessional exam is conducted in every semester along with two test/Quiz/Presentations.
- The first test conducted after the completion of the two units of each course.
- The duration of Mid Sem Exam is 1 Hour, the duration of the first test is one hour and the second test is one hours.
- The results of every student is analyzed to identify the weak and bright students.
- The bright students will be assigned some task by the faculty to encourage their performance.
- Remedial classes and tests will be conducted for the weaker students and the remedial test results are analyzed to identify the impact.

19. Industrial Training and Industrial Visits

Every year students are going for the industrial training and also for industrial visit. The objectives of the industrial training/ Visits are

- To expose the students to the engineering practice which is specific to their course specialization and to the nature of the industry selected.
- To expose the students to the responsibility of an engineer and the engineering profession.
- To develop the students' communication skills that include daily interaction within the working environment and technical writing.

20. Competitions

Students are encouraged to take part in competitions conducted by various local bodies and other organizations so that their innovative ideas are made known to the public. The students are also motivated to visit R& D cell to see the previous projects done by t

MAPPING OF DELIVERY METHODS WITH PROGRAMME OUTCOMES

Delivery methods	PO	1	2	3	4	5	6	7	8	9	10	11	12
Classroom Lectures		□	□	□	□				□	□	□		□
PPT		□	□	□		□			□	□	□		□
Seminars		□				□		□	□	□	□		□
Tutorials		□	□	□	□				□	□	□		□
Assignments		□	□	□				□	□		□		□
Group Activity		□	□	□	□		□		□	□	□	□	□
Industrial Training/ Industrial visit		□					□	□	□	□	□		□
Videos (NPTEL and others)		□	□	□		□					□		□
Models/ Demonstration of practical cases/Simulation		□	□	□	□	□	□	□	□	□	□	□	□
Project		□	□	□	□	□	□	□	□	□	□	□	□

IMPACT ANALYSIS OF TEACHING LEARNING PROCESS

Innovations in Learning Process/ ICT Based Teaching Process	POs/PSOs Strengthened	Impact Analysis
Use of PPTs,	PO1, PO2, PO3, PO5, PO8, PO9, PO10, PO12 PSO1, PSO2	Improves conceptual clarity, visual understanding of structural/field applications.
NPTEL / SWAYAM video lectures integration	PO1, PO2, PO3, PO5, PO10, PO12, PSO1, PSO2	Encourages self-learning, exposure to advanced topics, lifelong learning skills.
Virtual labs / Software tools (e.g., Scilab, Virtual Lab IIT, Tinker CAD)	PO3, PO4, PO5, PO6, PSO1, PSO2	Enhances problem-solving & design skills; bridges theory and practice.
Case studies & group discussions	PO6, PO7, PO8, PO9, PO10, PSO1, PSO2	Improves teamwork, leadership, professional ethics, and decision-making skills
Flipped classroom / Blended learning	PO2, PO4, PO12	Increases student engagement, promotes higher-order thinking and independent learning.
Industrial training / visits	PO1, PO6, PO7, PO8, PO9, PO10, PO12 PSO1, PSO2	Enhances practical exposure, industry readiness, and professional responsibility.
Project-based learning	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12 PSO1, PSO2	Strengthens research, innovation, teamwork, and real-world problem-solving.

2.2 Quality of Student Capstone Project (25)

Final year students have the capstone project. During seventh semester they have to do the literature survey to find out the research gap and to decide the outline of the projects. During 8th semester students are working on project material and methods, results, discuss Every week projects meets to their project guide and discusses the issues. Details of selection, evaluation along with POs are given below.

- **Projects identification and guide allocation Process**

The project coordinators/ guides the 7th semester students to choose a project domain. Students are encouraged to undertake projects in industries and are advised to select projects which are creative, innovative, and offer solutions to real-world problems. Projects are application, product development, or research orientation. Factors such as environment, safety, ethics, and cost are also taken into considerations while choosing the topic. The following points provide details about project identification and guide selection process.

1. The student's projects are selected in line with department mission, vision and Program outcomes.
2. Students are provided with brief idea of various fields/specializations for selecting the project ideas.
3. The list of previous year projects is displayed on notice board which ensures no repetition of project work and also encourages students to enhance the previous works.
4. The faculties encourage the students to carry out in house projects and support will be provided with all necessary software and hardware.
5. The list of project guides along with their specialization is displayed on the notice board in order to select proper project guide by the project group.
6. The project group is selected the guide from the project guide list and then contact the project guide.
7. A project group is discussed about the project idea with project guide. The project guide signed the application of the project group and later it is submitted to the project coordinator.
8. The project groups are required to meet the project guide in the allotted project classes. The project groups are required to record the assigned tasks in the Project Dairy.

- **Projects classification**

The projects are classified in the following ways:

1. **Embedded Systems / IoT / Automation -** These projects focus on integrating microcontrollers, sensors, communication modules (Wi-Fi, Bluetooth), and automation hardware to make electrical systems smart and autonomous
2. **Power Electronics & Drives -** This category deals with the conversion, control, and switching of electrical power using solid-state electronics, as well as controlling the speed and torque of electric motors.
3. **Renewable Energy -** In this type of project, renewable energy technology (such as solar photovoltaic, wind) is utilized for energy generation, sustainability, and energy conservation. In this type of projects renewable energy technology is used for energy cor
4. **Emerging Technology (Electric Vehicles) -** This stream covers cutting-edge advancements in the transportation sector, focusing heavily on clean energy mobility, powertrain electrification, and energy storage technology.
5. **Software Development and Database Management -** This project is classified under Software Development and Database Management because it involves developing software and managing data using a database. It helps users store, update, retrieve, a

Process to ensure the quality of student projects:

Quality assurance in student projects depends on systematic planning, continuous monitoring, and adherence to technical/ethical standards, validation, and thorough documentation. This structured process ensures projects meet academic, industrial, and accreditation re

The process to ensure the quality of student projects from planning to final evaluation:

1. Clear Guidelines & Topic Selection
- Provide written project guidelines (scope, deliverables, and evaluation scheme).
- Approve topics only after checking relevance, feasibility, and originality.
- Encourage projects aligned with current industry/research trends and program outcomes (Pos/PSOs).

2. Formation of project group
- Create balanced project groups considering skills, interest areas.
- Assign a qualified faculty guide for each group.

3. Preliminary Proposal & Literature Review
- Take a Project proposal including objectives, methodology, and expected outcomes from the project groups.
- Guide ensures thorough literature survey to avoid duplication and establish novelty.

4. Regular Monitoring
- Schedule periodic reviews (weekly by guide and monthly by committee members).
- Set clear milestones: design, development, testing, documentation.

5. Technical & Ethical Standards
- Verify compliance with environmental, safety, and ethical norms.
- Encourage use of standard codes and industry best practices.

6. Interim Seminars/Presentations on selected topic
   - Conduct two internal seminars each semester.
   - Provide constructive feedback and insist on implementation of suggestions.
7. Documentation & Record Keeping
   - Enforce proper report writing format: abstract, objectives, methodology, results, conclusions.
   - Project groups maintain project dairy, design files and test data.
8. Design Validations & Testing
   - Insist on prototype/model demonstrations with performance testing.
   - Check for accuracy, reliability, and repeatability of results.
9. Final Evaluation & Viva
   - Conduct a formal department-level final evaluation before the university viva.
   - Assess individual contributions, problem-solving, and communication skills.

Continuous monitoring mechanism and evaluation

The final year project are evaluated in two steps :

1. Project phase-I
2. Project Phase-II

1. Project phase-I : 7th Semester Evaluation Project Phase-I (100 Marks –

Internal evaluation- 60 Marks + External evaluation-40 Marks)

1. Stage 1: Project Presentation (First Seminar- Project Synopsis Presentation**)**

- Purpose: To assess the initial project idea, literature review, and problem statement.
- Criteria: Content :
  - Review of literature and identification of research gap.
  - Problem statement and objectives.
  - Feasibility of proposed work.
  - Presentation:
    - Quality of slides
    - Communication skills, flow, time management.

This stage ensures that students have chosen a relevant project, studied background literature, and prepared a roadmap before execution.

2. Stage 2: Project Presentation (Second Seminar- Mid Review / Progress Seminar)

Purpose: To evaluate progress and check if the group has implemented feedback from the first seminar.

- Criteria:
- Content Improvement:
  - Incorporation of suggestions given in the 1st seminar.
  - Refinement of problem statement, methodology, and objectives.
  - Technical Work Progress:
    - Preliminary design, analysis, or data collection.
    - Initial results and feasibility checks.
  - Presentation:
    - Presentation of work.
    - Confidence in explaining technical aspects.
    - Balanced participation of all group members.

At this stage, students should show concrete progress in the project, not just theoretical study.

A. **Stage 3: Project Presentation (Seminar 3: Project Guide Evaluation)**

- Purpose: To assess individual contribution and technical growth throughout the semester.
- Criteria: Regularity and Attendance :
    - Consistent interaction with the guide.
    - Active participation during allocated timetable slots.
  - Initiative and Effort :
    - Independent work, problem-solving attitude.
    - Willingness to learn and explore beyond syllabus.
  - Technical Knowledge and Problem-Solving :
    - Understanding of Engineering fundamentals.
    - Logical approach to challenges.
  - Teamwork:
    - Cooperation among team members.
    - Timely submission of reports.

The guide's marks reflect continuous performance and sincerity of each student, not just final Outcomes.

Parameter	Stage 1 (Seminar 1) 20 Marks	Stage2 (Seminar 2) 20 Marks	Stage3 (Seminar 3) 20 Marks	Marks 60
Regularity and Attendance	5	5	5	**15**
Initiative and Effort	5	5	5	**15**
Technical Knowledge and Problem-Solving	5	5	5	**15**
Teamwork	5	5	5	**15**
Total	**20**	**20**	**20**	**60**

B. External Evaluation (40 Marks)

Description about Final evaluation:

- purpose: External and unbiased assessment of student's knowledge, teamwork, and final Output.
- Criteria:
  - Problem Understanding & Objectives: Clarity of aim, scope, and expected outcomes.
  - Technical Content & Methodology: Soundness of design, analysis, or experimentation.
  - Implementation & Results: Practical results, model working, data analysis, graphs, conclusions.
  - Demonstration of Project Model: Functionality, safety, feasibility, and reliability.
  - Communication, Team Contribution & Viva:
    - Individual oral exam performance.
    - Ability to answer technical questions.

The university examiner evaluates both project and individual knowledge, ensuring fairness across all colleges.

Parameter	Internal	External	Total End Sem Marks 40	Weightage (%)
Regularity and Attendance	5	-	5	12.5
Initiative and Effort	5	-	5	12.5
Technical Knowledge, Problem-Solving & Analysis	5	10	15	37.5
Teamwork	5	10	15	37.5
Total	**20**	**20**	**40**	**100**

B. **Project Phase-II : 8th Semester Evaluation (100 Marks)**

C. **Internal Evaluation (60 Marks)**

1. **Stage 1: Project Presentation (First Seminar)**

- Purpose: To check the progress achieved after 7th semester and ensure the group is on track.
- Criteria: Progress after 7th Semester:
    - Completion of design stage, problem analysis, or fabrication plan.
    - Documented research or CAD/simulation work.
  - Technical Depth:
    - Application of theory into design/analysis.
    - Relevance of tools/software/methodology.
  - Presentation Skills:
    - Technical/Logical presentation of results achieved so far.
    - Handling of Q&A effectively.

Students must show substantial development from their preliminary investigations.

2. **Stage 2: Project Presentation (Second Seminar)**

- Purpose: To evaluate final stage of project work, model demonstration, and incorporation of feedback.
- Criteria:
- Incorporation of Suggestions:
    - Modifications done after first seminar.
    - Improvement in design, process, or analysis.
  - Demonstration & Presentation:
    - Working demonstration of the model.
    - Clear documentation of results and conclusions.
  - Implementation:
    - Prototype/model completed and functioning.
    - Testing and validation of results.

This stage shows how well students have translated theory into practice and addressed practical challenges.

3. **Stage 3: Project Presentation (Project Guide Evaluation)**

- Purpose: To evaluate overall individual growth and final contribution.

- Criteria:
  - Consistency of Work: Regularity throughout both semesters.
  - Innovation & Creativity: Novelty of project idea and solution.
  - Technical Competence: Ability to apply engineering principles effectively.
  - Effort & Involvement: Personal contribution in design, fabrication, and report.
  - Documentation: Quality of written report and formatting.

This ensures recognition of both hard work and innovation, not just final output.

D. **External Evaluation (40 Marks)**

Description about Final evaluation:

- purpose: External and unbiased assessment of student's knowledge, teamwork, and final Output.
- Criteria:
  - Problem Understanding & Objectives: Clarity of aim, scope, and expected outcomes.
  - Technical Content & Methodology: Soundness of design, analysis, or experimentation.
  - Implementation & Results: Practical results, model working, data analysis, graphs, conclusions.
  - Demonstration of Project Model: Functionality, safety, feasibility, and reliability.
  - Communication, Team Contribution & Viva:
    - Individual oral exam performance.
    - Ability to answer technical questions.

The university examiner evaluates both project and individual knowledge, ensuring fairness across all colleges.

Parameter	Internal	External	Total End Sem Marks 40	Weightage (%)
Regularity and Attendance	5	-	5	12.5
Initiative and Effort	5	-	5	12.5
Technical Knowledge, Problem-Solving & Analysis	5	10	15	37.5
Teamwork	5	10	15	37.5
Total	**20**	**20**	**40**	**100**

Summary of Weightage

Course Name	Course Code	Semester	Mode of Evaluation	Components	Marks
Project Phase –I	BTEEP710	7th	Internal	Seminar-1 (20M) + Semimar-2 (20M) + Guide (20M)	60
Project Phase –I	BTEEP710	7th	External	External Examiner(20M) + Internal Examiner(20M)	40
Total					**100**

Project Phase-II	BTEEP803	8th	Internal	Seminar-1 (20M) + Semimar-2 (20M) + Guide (20M)	60
Project Phase-II	BTEEP803	8th	External (University)	External Examiner(20M) + Internal Examiner(20M)	40
Total					**100**

PO'S AND PSO'S MAPPED IN EACH PROJECT IS SHOWN IN THE TABLE BELOW:

Sl. No.	Project Areas	No. of main projects			Mapping with Pos	Mapping with PSOs
		2024 -25	2023 -24	2022 -23		
1	**Embedded Systems / IoT / Automation**	**3**	**4**	**8**	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10,PO11, PO12	PSO1 ,PSO2
2	**Power Electronics & Drives**	**2**	**2**	**-**	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10,PO11, PO12	PSO1 ,PSO2
3	**Renewable Energy**	**2**	**2**	**1**	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10,PO11, PO12	PSO1 ,PSO2
4	**Emerging Technology (Electric Vehicles)**	**1**	**2**	**-**	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10,PO11, PO12	PSO1 ,PSO2
5	**Software Development and Database Management**	**-**	**1**	**1**	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10,PO11, PO12	PSO1 ,PSO2
Total Projects		**8**	**11**	**10**		

Academic Year: (2024-25)

Name of the Students	Project Title	Areas of Specialization	Project Supervisor	Contribution/ Achievements / Research Output	Matching with the stated POs, PSOs	Matching with the Blooms taxonomy levels

Pradip Nitin Dhobi Ritesh kishor bavaskar Pooja sahebrao Hiray	Automatic Power Factor Controller using Arduino	Internet of Things (IoT) and Power Systems	Prof. Mahesh H. Patil	Designed a real-time reactive power compensation unit. Achieved auto-switching of capacitor banks, improving lagging power factor	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2	BT4, BT5, BT6
Gayatri subhash kale Mhaske Shubhangi Kailas Trupti Ananda Bavaskar	Home Automation Using Wifi.	Internet of Things (IoT) and Embedded Systems	Dr. Atul A. Barhate	Fabricated a smart relay node matrix integrated with a web interface. Allowed remote load toggling and optimized standby power drainage across home appliances.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2	BT4, BT5, BT6
Rashmi Ramesh Kothoke Ashwini Tukaram Bhavsar Sudhir Anil Chaudhari	Development Of Single Phase Inverter	Power Electronics & Drives	Prof. Sachin R. Maheshri	Designed and tested a 1kVA pure sine wave inverter using SPWM signaling. Successfully reduced Total Harmonic Distortion (THD) to under 4.5% for inductive loads.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2	BT4, BT5, BT6
Shubham Gopal Patil Nikita Sartale Pavan Sopan Patil	Litreture Review on Prototyping with Arduino	Embedded Systems, Microcontrollers	Prof. Amit V. Mhaskar	Developed a general-purpose automated industrial timer and relay trip switch configuration using microcontrollers to protect standard single-phase machinery.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2	BT4, BT5, BT6
Manish Kashimanth Patil Sumedh Kailas Tayde Shubham Ravindra Chavan	Ac Induction Motor Speed Controlling using Smart Phone	Power Electronics & Electrical Drives and Control Systems	Prof. Nemichand K. Saini	Implemented a v/f (voltage/frequency) speed control topology using a microcontroller-driven inverter. Enhanced operational efficiency over a 30% to 100% wide speed range.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2	BT4, BT5, BT6

Yash Prakash Chudhari Sumit Namdev Wagh Mohit Bhsakar Chaudhari	Solar power grid status monitoring and alerting with Android smart phone technology.	Renewable Energy and Smart Grid	Prof. Sachin R. Maheshri	Engineered a remote telemetry system utilizing a Wi-Fi module to stream voltage, current, and irradiance metrics to a cloud API and custom Android client application.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2	BT4, BT5, BT6
Sejal Rajendra Bharambe Vedant Nitin Rane Sachin Kishor Patil	Solar based Audio systems	Renewable Energy	Prof. Harish A. Patil	Fabricated an eco-friendly standalone audio amplifier run strictly on decentralized solar PV roof modules. Deployed zero-grid energy operations for classroom public address.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2	BT4, BT5, BT6
Wani Pranjal Pravin Patil Vivek Bapurao Patil Kundan Sunil	Battery-Management System (BMS) and SOC Development for Electrical Vehicles	Electric Vehicles (EV) and Energy Storage Systems	Prof. Mahesh H. Patil	Developed a real-time Coulomb-counting algorithm coupled with an active cell-balancing matrix. Optimized State of Charge (SOC) estimation accuracy down to margin.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2	BT4, BT5, BT6

Academic Year (2023-24)

Name of the Students	**Project Title**	**Areas of Specialization**	**Project Supervisor**	**Contribution/ Achievements / Research Output**	**Matching with the stated POs, PSOs**	**Matching with the Blooms taxonomy levels**

Deshmukh Ganesh Rajendra Dhondge Mansi Shashikant Badgujar Nisha Arun Patil Monali Ravindra	Solar Inverter	Power Electronics and Renewable Energy	Prof. Mahesh H. Patil	Studied the design, operation, efficiency, charging/discharging characteristics, and applications of solar batteries and inverters in photovoltaic systems.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2	BT4 BT5 BT6
Chaudhari Sagar Totaram Mahale Rupesh Pramod Johare Ashutosh Deepak Patil Amol Pradip	3KW Solar rooftop system for air conditioner	Renewable Energy	Prof. Mahesh H. Patil	Designed and analyzed a 3 kW solar photovoltaic system suitable for operating an air conditioner, including sizing of PV panels, inverter, and battery bank.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2	BT4 BT5 BT6
Dhobi Sanket Arvind Bhupendra Rama Chaudhari Bhamare Manish Rajendra Bhoi Raju Ramdas	Two wheeler Ev charger study for India	Emerging Technology (Electric Vehicles)	Prof. Mahesh H. Patil	Conducted a comparative study of EV charging standards, charging infrastructure, charging methods, and future prospects for two-wheelers in India.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2	BT4 BT5 BT6
Borole Paresh Kiran Patil Mahesh Bharat Zope Ketan Sunil Patil Keval Ramesh	Multicolour Scrolling LED display	Embedded Systems and Digital Electronics	Prof. Harish A. Patil	Developed a programmable multicolour scrolling LED display using a microcontroller for displaying text and graphics.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2	BT4 BT5 BT6

Sambare Rushikesh Bhagwat Fegade Tejas Anil Chaudhari Aniket Rajendra Divse Keshav Arun Thakare Akshay Gajanan	Mark Management System for GFGCOE, Jalgaon	Software Engineering and Database Management Systems	Prof. Atul A. Barhate	Developed a computerized mark management system for storing, processing, and generating student academic records and reports.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2	BT4 BT5 BT6
Patil Monal Anil Patil Jayshri Purushottam Mahajan Sayali Nivrutti Patil Devendra Hemraj	Four wheeler EV batteries study project.	Emerging Technology (Electric Vehicles)	Prof. Sachin R. Maheshri	Studied various EV battery technologies, battery management systems (BMS), charging methods, safety aspects, and performance comparison.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2	BT4 BT5 BT6
Chaudhari Vaibhav Ravindra Patil Dhiraj Prabhakar Tayade Vaibhav Bhaskar Narkhede Ritesh Vitthal	DRONE Technology	Embedded Systems	Prof. Sachin R. Maheshri	Studied drone architecture, flight control systems, communication protocols, sensors, and applications in surveillance, agriculture, and mapping.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2	BT4 BT5 BT6
Chaudhari Vaishnav Suresh Jayesh Ajay Ambekar Patil Tirtharaj Kishor Sarode Saurabh Nitin	Smart Defender	Internet of Things (IoT) and Embedded Systems	Prof. Harish A. Patil	Developed a smart security device for monitoring and protecting premises using sensors, alarms, and wireless communication.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2	BT4 BT5 BT6

Thorat Manish Sanjay Patil Hitesh Balu Patil Mohan Ishwar Nemade Shubham Manoj	Home automation	Internet of Things (IoT) and Home Automation	Prof Nemichand Saini	Developed a home automation system for controlling electrical appliances through mobile application or voice commands.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2	BT4 BT5 BT6
Dhangar Saurabh R. Patil Swapnil Sunil Salunkhe Prashant Rajendra Patil Mayur Sanjay	Solar Air Conditioner Inverter	Renewable Energy & Power Electronics	Prof. Nemichand Saini	Studied the design and operation of inverter systems used for solar-powered air conditioners with emphasis on energy efficiency.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2	BT4 BT5 BT6
Pawara Kapil Devsing Shubham Rajesh Nagla Vivek Bhushan Sangole Deshpande Hrishikesh Vijay Patil Nilesh Dinakar	Solar Air Conditioner	Renewable Energy	Prof. Amit V. Mhaskar	Studied the working principle, design considerations, energy savings, and performance analysis of solar-powered air conditioning systems.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2	BT4 BT5 BT6

Academic Year (2022-23)

Name of the Students	**Project Title**	**Areas of Specialization**	**Project Supervisor**	**Contribution/ Achievements / Research Output**	**Matching with the stated POs, PSOs**	**Matching with the Bloom s taxonomy levels**

Mahajan Mayur Suresh Kapdane Gayatri Pralhad Dhande Bhushan Tukaram Sonawane Sarika Prakash	Energy monitoring system through website	Internet of Things (IoT)	Prof. Shubhangi Tayade	Developed a mobile application for monitoring departmental energy consumption with real-time data visualization and reporting.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12 PSO1, PSO2	BT4 BT5 BT6
Mahajan Gaurav Prakash Kumbhar Akshay Arjun Shirsale Dnyaneshwar Bhagwat More Vishal Santosh	Smart Energy Meter by Using IoT	Internet of Things (IoT)	Prof. Sachin R. Maheshri	Designed an IoT-enabled smart energy meter for remote monitoring and energy consumption analysis.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12 PSO1, PSO2	BT4 BT5 BT6
Narendra Yograj Mahajan Paurnima Prabhakar Sabale Harshal Sunil Pardeshi Shashikant Digambar Yevale	Automatic Curtain Mover	Embedded Systems and Automation	Prof. Atul A. Barhate	Developed an automatic curtain control system using sensors and microcontroller	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12 PSO1, PSO2	BT4 BT5 BT6

Patil Vivek Kailas Patil Dhanashri Sunil Satpute Harshada Bhumeshwar	Student Record Management System for department	Software Development, Database Management	Prof. Shubhangi Tayade	Developed ERP software for efficient student record management and monitoring.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12 PSO1, PSO2	BT4 BT5 BT6
Sarode Rahul Dipak Maheshri Rahul Chandrabhan Patil Sujit Anil Bari Vaibhav Pandurang	Door Lock open using Fingerprint sensor	Embedded Systems and Biometric Security	Prof. Sachin R. Maheshri	Designed a biometric access control system using fingerprint authentication for enhanced security.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12 PSO1, PSO2	BT4 BT5 BT6
Bhopale Tejas Pravin Patil Kiran Laxman Mahajan Jeevan Nivrutti Rathod Savita Shahaji Patil Komal Prakash	LORA Based automatic water level controller	Internet of Things (IoT) and Automation	Prof. Atul A. Barhate	Developed a LoRa-based wireless water level monitoring and automatic pump control system.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12 PSO1, PSO2	BT4 BT5 BT6

Chaudhari Tejas Rajendra Shinde Pankaj Sanjay Katole Rohit Dnyaneshwar Patil Bhushan Sudhakar Patil Hrishikesh Prakash	Solar base mobile fast charging point at GCOE campus	Renewable Energy, Power Electronics	Prof. Mahesh H. Patil	Designed and developed a solar-powered mobile charging station; promoted green energy utilization on campus; prototype successfully demonstrated.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12 PSO1, PSO2	BT4 BT5 BT6
Patil Harshal Raju Umale Shubham Baliram Patil Kalpana Bhika Patil Rushikesh Shamsing Chaudhari Amol Shantaram	Home Automation using Amazon ALEXA	Internet of Things (IoT) and Home Automation	Prof. Mahesh H. Patil	Developed a voice-controlled home automation system using Amazon Alexa and IoT devices; demonstrated remote monitoring and control.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12 PSO1, PSO2	BT4 BT5 BT6
Bharat Devidas Rathod Patil Pravin Anil Rathod Raju Madhukar Gaykwad Rahul Santosh	Solar power monitoring system using Microcontroller	Renewable Energy, Embedded Systems	Prof. Atul A. Barhate	Developed a real-time solar parameter monitoring system using sensors and microcontroller; displayed voltage, current, and power data.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12 PSO1, PSO2	BT4 BT5 BT6

Chaudhari Sarvesh Rajendra Falak Devayani Vishnu Sartale Rudresh Pradip Dandekar Gaurav Yuvraj	Smart Agriculture security pole	Internet of Things (IoT) and Smart Agriculture	Prof. Harish A. Patil	Designed an IoT-based agriculture security system with intrusion detection and automatic alert mechanism for crop protection.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12 PSO1, PSO2	BT4 BT5 BT6

Initiatives

1. The faculties encourage students to participate in project exhibitions /competition. The project exhibition / competition is aimed to provide common platform to exhibit their innovations and their work towards excellence in latest technology.
2. The faculties encourage students to publish their project work in journals/conferences.

Implementation

1. Project topics are allotting to the students as per their area of choice
2. Faculty are providing the necessary facilities and guidance to the students,
3. Students are recording the assigned tasks in the Project diary.
4. Student groups are presenting seminars on their projects.
5. Evaluation of the projects are done based on the students attendance, performance in the seminars, preparation of the models, report writing, recording the activities in the Project diary.

Impact analysis

1. New innovative ideas are enhanced.
2. Skills or abilities of students improved.
3. Knowledge on various aspects of project management was developed.
4. Confidence level of the students was boosted.
5. Improved teamwork spirit.
6. Implementation and deployment of the project for social benefits.
7. Document preparation and presentation.
8. Opportunities to showcase their project work in project exhibition.
9. Publishing technical articles in technical journals/conferences.

2.3 Internship/Industrial Training (10)

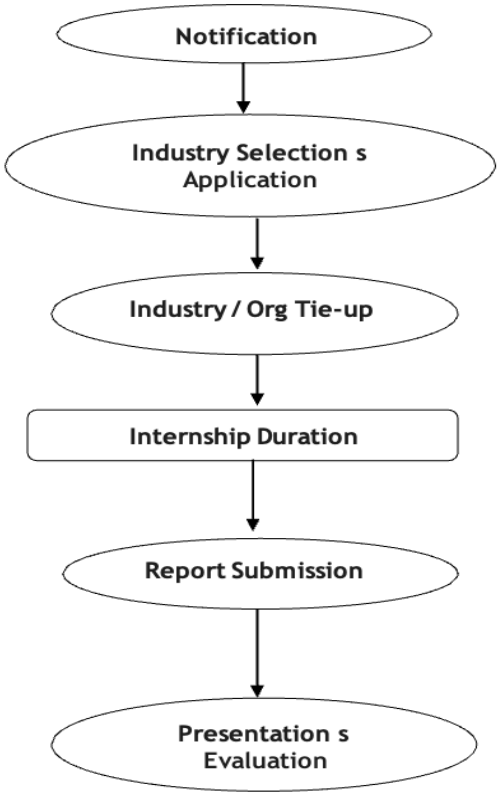
As per the DBATU, Lonare university curriculum, 4 week internship is mandatory to Electrical Engineering students. Students are going to evaluate their internship report on every odd semester. For their work done of internship of last academic year.

PROCESS DESCRIPTION –

The following procedure is adopted by the institute for Industrial internship:

1. **Notification**
   - The notice contains prescribe the format for applying to industries for internship/field training for the requirements of report submission.
2. **Industry Selection & Application**
   - Students collect an official letter from the **Training & Placement Cell (T&P)**.
   - Using this letter, they apply for internships in nearby industries related to Electronics and telecommunication Engineering.
3. **Industry Tie-ups (MOU)**
   - The Institute maintains **MoUs and strong relations** with local industries as well as reputed industries/organization to improve their practical capability to support students in getting internships.
4. **Internship Duration**
   - Each student undergoes **4 Week** Within Vacation Slot of each Year (in semester vacation gaps)**.**
5. **Report Submission**
   - At the start of the **odd semester**, every student must submit an **Internship Report (internship done in last year)** documenting their training, learning's, and exposure.
6. **Presentation & Evaluation**
   - The Department organizes **internship presentations**.
   - Students present their industrial training/Internship experience before a panel of faculty evaluators.

FLOW CHART FOR INTERNSHIP



Impact Analysis of Initiatives related to industry Internship/summer training

- Students are exposed to real time practical experience of the concepts studied in the classrooms and realized the practical importance of the subjects.
- Industrial visit creates more interest in the subjects.
- Students are inspired to do hard work and get placed in such industries.
- Students were exposed to the industry standards and workplace culture.
- Students learn professional and ethical behavior
- Students can correlate the theoretical knowledge and its practical implementation

The details of Internship / Summer Training Report evaluation is as follows

Course Name	Course Code	Semester	Mode of Evaluation	Components	Marks
Internship - I	BTES211P	3RD	External	External Examiner(50M)	50
Total					**50**
Internship - II	BTEEPE510	5TH	External	External Examiner(50M)	50
Total					**50**

Internship - III	BTEEP609	7TH	External	External Examiner(50M)	50
Total					**50**

Internship (2024 -25)

Sr. No	Name of the Student	Name of the Company	Skill Gained	Relevance to POs and PSOs
1.	Chaudhari Mohit Bhaskar Wankhede Apurva Ashok Patil Harshal Shivaji Tayade Rohit Shantaram Patil Sujit Samar Kale Aditya Santosh	Tashwita Electrical Works, Jalgaon Plot No. P-68, MIDC Area, near Godavari English School Road, Jalgaon	The industrial internship provided practical exposure to casting processes, connecting classroom concepts with real-world applications. It enhanced the student's problem-solving skills and knowledge of maintenance procedures and safety practices. The student also gained understanding of instrumentation works, Industrial Electrical Installations process, teamwork, and communication skills.	PO1, PO2, PO5, PO6, PO7, PO8, PO9, PO10, PO12, PSO2
2.	Wagh Sumit Namdev Koli Ganesh Sopan Sartale Nikita Pradip Vispute Harshal Subhash Hiwale Pavan Suresh Chavan Shubham Ravindra	Aashish engineering co. Plot No. 21, S. R. No. 81/82, MIDC Area, Ambad, Nashik	The industrial internship provided practical exposure to casting processes, connecting classroom concepts with real-world applications. It enhanced the student's problem-solving skills and knowledge of maintenance procedures and safety practices. The student also gained understanding of Moulds & Dies, Machining Jobs, Heavy Fabrication, teamwork, and communication skills.	PO1, PO2, PO3, PO5, PO9, PO10, PO12, PSO1

3.	Hiray Pooja Sahebrao Bavaskar Trupti Ananda Bharambe Sejal Rajendra Bhavsar Ashwini Tukaram Sali Bhagyashri Mahendra Baraskar Aryan Chandrakant Kurlekar Soham Ramlingappa	Priya Engineering,	The industrial internship provided practical exposure to casting processes, connecting classroom concepts with real-world applications. It enhanced the student's problem-solving skills and knowledge of maintenance procedures and safety practices. The student also gained designing and manufacturing material handling systems, industrial conveyors, and custom automation equipment is basic knowledge, teamwork, and communication skills.	PO1, PO2, PO3, PO5, PO9, PO10, PO12, PSO1, PSO2
4.	Bavaskar Ritesh Kishor Chaudhari Mayuri Sanjay Dhobi Pradip Nitin Chaudhari Yash Prakash Patil Manish Kashinath Patil Sachin Kishor Koli Rupam Nitin Patil Pavan Sopan	Soyo systems private limited, Jalgaon Plot No. M-91, MIDC Area, Behind Godavari Engineering College, Patil Nagar, Jalgaon-425003	The industrial internship provided practical exposure to solar system with installation process. Gained practical knowledge of solar panel, battery as well as installation process and this understanding specification. The student also gained designing and manufacturing material handling systems and equipment is basic knowledge, teamwork, and communication skills.	PO1, PO2, PO3, PO5, PO9, PO10, PO11, PO12; PSO1, PSO2, PSO3

5.	Tayade Sumedh Kailas Dasare Sachin Ramnath Bhoi Ravindra Shriram Chaudhari Sudhir Anil Rane Vedant Nitin Shaikh Sahil Shaikh Nasir	Chhabi Electricals Private Limited E-66, MIDC Area, Ajanta Road, Jalgaon – 425003	Gained practical knowledge of industrial automation, Battery charger, PLC-based control systems, electrical control panels, industrial sensors, and process instrumentation. Observed industrial process control, instrumentation calibration, fault diagnosis, and quality assurance practices. Developed skills in industrial documentation, system integration, teamwork, and professional work culture.	PO1, PO2, PO3, PO5, PO9, PO10, PO11, PO12; PSO1, PSO2, PSO3
6.	Kale Gayatri Subhash Mhaske Shubhangi Kailas Patil Bhushan Bapu Patil Kundan Sunil Raut Fulji Raysing Patil Shubham Gopal Mahajan Chetan Gulab Rane Vedant Nitin	Nilraj Industries Private Limited, Jalgaon P-69, Near Bharat Petroleum, MIDC, Jalgaon-425003	The industrial internship provided practical exposure to casting processes, connecting classroom concepts with real-world applications. It enhanced the student's problem-solving skills and knowledge of maintenance procedures and safety practices. The student gain basic knowledge of transformer, power transformer, DCDB etc. The student also gained understanding of A prominent industrial electrical contractor handling commercial and industrial electrical work, maintenance, and contracting, teamwork, and communication skills.	PO1, PO2, PO5, PO6, PO9, PO10, PO12; PSO1, PSO2

Internship (2023-24)

Sr. No	Name of the Student	Name of the Company	Skill Gained	Relevance to POs and PSOs

1.	Bavaskar Ritesh Kishor Dhobi Pradip Nitin Patil Manish Kashinath Patil Shubham Gopal Bharambe Sejal Rajendra Vispute Harshal Subhash	Periodic Overhaul (POH), Bhusawal Old Varangaon Road, Bhusawal, District Jalgaon, PIN-425201	An internship at the Electric Loco Workshop (ELW), Central Railway, Bhusawal provides hands-on experience with the POH and maintenance of electric locomotives. It is one of the premier facilities in India for servicing 3-phase and other electric engines, making it a highly valuable practical learning experience. The student also gained teamwork, and communication skills.	PO1, PO2, PO3, PO5, PO6, PO9, PO10, PO11, PO12; PSO1, PSO2, PSO3
2.	Chavan Shubham Ravindra Patil Pavan Sopan Tayade Sumedh Kailas Chaudhari Sudhir Anil Chaudhari Mohit Bhaskar	VK Electricals & Contractors Plot No.9, Sukhsagar Colony, Wani Nagar, Bhistabag, Ahilyanagar-414003	Practical exposure to electrical wiring, cable laying, panel installation, electrical testing, fault diagnosis, preventive maintenance, and electrical safety practices.	PO1, PO2, PO5, PO7, PO9, PSO1, PSO2
3.	Bhavsar Ashwini Tukaram Sartale Nikita Pradip Bavaskar Trupti Ananda Mhaske Shubhangi Kailas Kale Gayatri Subhash Hiray Pooja Sahebrao	Geeta solar system, Jalgaon M-132, M.I.D.C. ,behind godavari college of engineering, Jalgaon - 425003	An internship gained practical knowledge of solar photovoltaic (PV) systems, solar panel installation, system components, and renewable energy technologies. Learned solar panel mounting, inverter operation, battery systems, charge controllers, and electrical wiring practices. Observed energy efficiency practices, load analysis, safety procedures, and quality standards followed during solar system installation.	PO1, PO2, PO3, PO5, PO6, PO7, PO9, PO10, PO12; PSO1, PSO2
4.	Patil Sachin Kishor Rane Vedant Nitin Patil Kundan Sunil Patil Vivek Bapurao Koli Ganesh Sopan	Legrand India Ltd, Jalgaon Plot No. D-4, MIDC, Ajintha Road, Audyogik Vasahat, Jalgaon - 425003	Exposure to manufacturing processes, assembly of electrical accessories, quality inspection, product testing, industrial safety, and production planning	PO1, PO2, PO5, PO8, PO10, PSO1, PSO2
5.	Kurlekar Soham Ramlingappa Wani Pranjal Pravin Chaudhari Yash Prakash Wagh Sumit Namdev Tayade Rohit Shantaram	Nilraj Industries Private Limited, Jalgaon P-69, Near Bharat Petroleum, MIDC, Jalgaon - 425003	The industrial internship provided practical exposure to casting processes, connecting classroom concepts with real-world applications. It enhanced the student's problem-solving skills and knowledge of maintenance procedures and safety practices. The student also gained understanding of A prominent industrial electrical contractor handling commercial and industrial electrical work, maintenance, and contracting, teamwork, and communication skills.	PO1, PO2, PO5, PO6, PO9, PO10, PO12; PSO1, PSO2

Internship (2022-23)

Sr. No	Name of the Student	Name of the Company	Skill Gained	Relevance to POs and PSOs
1.	Bavaskar Ritesh Kishor Dhobi Pradip Nitin Patil Shubham Gopal Patil Manish Kashinath Bharambe Sejal Rajendra Bhavsar Ashwini Tukaram	MassTech Controls Pvt. Ltd, Jalgaon Plot No. G-23, MIDC Industrial Area, Ajantha Road, Jalgaon - 425003	An internship gained practical knowledge of industrial automation, PLC-based control systems, electrical control panels, industrial sensors, and process instrumentation. Observed industrial process control, instrumentation calibration, fault diagnosis, and quality assurance practices. Developed skills in industrial documentation, system integration, teamwork, and professional work culture.	PO1, PO2, PO3, PO5, PO9, PO10, PO11, PO12; PSO1, PSO2, PSO3
2.	Hiray Pooja Sahebrao Kale Gayatri Subhash Kothoke Rashmi Ramesh Mhaske Shubhangi Kailas Bavaskar Trupti Ananda Sartale Nikita Pradip	Soyo systems private limited, Jalgaon Plot No. M-91, MIDC Area, Behind Godavari Engineering College, Patil Nagar, Jalgaon - 425003	The industrial internship provided practical exposure to solar system with installation process. Gained practical knowledge of solar panel, battery as well as installation process and this understanding specification. The student also gained designing and manufacturing material handling systems and equipment is basic knowledge, teamwork, and communication skills.	PO1, PO2, PO3, PO5, PO9, PO10, PO11, PO12; PSO1, PSO2, PSO3

3.	Chaudhari Mohit Bhaskar Patil Kundan Sunil Patil Vivek Bapurao Tayade Sumedh Kailas	Nilraj Industries Private Limited, Jalgaon P-69, Near Bharat Petroleum, MIDC, Jalgaon - 425003	The industrial internship provided practical exposure to casting processes, connecting classroom concepts with real-world applications. It enhanced the student's problem-solving skills and knowledge of maintenance procedures and safety practices. The student also gained understanding of A prominent industrial electrical contractor handling commercial and industrial electrical work, maintenance, and contracting, teamwork, and communication skills.	PO1, PO2, PO5, PO6, PO9, PO10, PO12; PSO1, PSO2
4.	Chaudhari Sudhir Anil Kurlekar Soham Ramlingappa Rane Vedant Nitin Patil Sachin Kishor	Geeta solar system, Jalgaon M-132, M.I.D.C. ,behind godavari college of engineering, Jalgaon - 425003	Gained practical knowledge of solar photovoltaic (PV) systems, solar panel installation, system components, and renewable energy technologies. Learned solar panel mounting, inverter operation, battery systems, charge controllers, and electrical wiring practices. Observed energy efficiency practices, load analysis, safety procedures, and quality standards followed during solar system installation.	PO1, PO2, PO3, PO5, PO6, PO7, PO9, PO10, PO12; PSO1, PSO2
5.	Chaudhari Yash Prakash Wagh Sumit Namdev Chavan Shubham Ravindra Wani Pranjal Pravin Patil Pavan Sopan	Mahajan Industries Pvt. Ltd., Chalisgaon Plot No. 14, Chalisgaon MIDC, Khadaki, Chalisgaon - 424101	Practical knowledge of industrial electrical maintenance, motor control, machine operation, preventive maintenance, troubleshooting, and workplace safety.	PO1, PO2, PO5, PO7, PO9, PSO1, PSO2

2.4 Seminar and Mini/Micro Projects (10)

· The Electrical Engineering program incorporates seminars and mini projects as integral components of the curriculum to promote experiential learning, critical thinking, and problem-solving skills in line with the Natior These activities are designed to bridge the gap between theoretical knowledge and practical application while fostering innovation and self-directed learning.

· The process begins with planning and topic allocation, where students are guided by faculty members to select relevant topics from core areas such as power systems, electrical machines, control systems, indu technologies. Topics may be industry-oriented, research-based, or application-driven. For mini projects, students may work individually or in small groups to encourage both independent learning and teamwork.

· Students undertake literature survey, problem identification, and objective formulation as initial steps. For seminars, students prepare and present technical topics using standard presentation tools, emphasizing rece applications. For mini projects, students engage in activities such as design, simulation (using tools like Scilab, Virtual Lab IIT, Tinker CAD), hardware implementation, testing, and analysis. Emphasis is given to ha addressing practical engineering problems.

· The execution phase involves regular interaction with faculty mentors, who provide guidance on methodology, design approach, and technical validation. Students are required to maintain proper documentation, inc calculations, simulation results, and photographs (if applicable).

· A structured monitoring mechanism is followed, including periodic reviews, progress evaluations, and internal assessments. Faculty mentors ensure timely completion and adherence to defined objectives. Stuc seminars, demonstrations, or poster presentations.

· The evaluation process is carried out using well-defined rubrics and includes assessment of topic relevance, technical content, innovation, methodology, analysis, presentation skills, and report quality. For mini project design, implementation, and problem-solving approach. Evaluation is conducted through continuous assessment, presentations, and viva voce.

The details of Seminar evaluation is as follows

Course Name	Course Code	Semester	Mode of Evaluation	Components	Marks
Seminar	BTEEM609	6TH	Internal Assessment	Seminar-1 (30M) + Semimar-2 (30M)	60
Seminar	BTEEM609	6TH	End Semester Examination	External Examiner(20M) + Internal Examiner(20M)	40
Total					**100**

The details of Mini Project evaluation is as follows

Course Name	Course Code	Semester	Mode of Evaluation	Components	Marks
Mini Project -1	BTEEP308	3RD	Internal Assessment	Presentation -1 (30M) + Presentation -2 (30M)	60
Mini Project -1	BTEEP308	3RD	End Semester Examination	External Examiner(20M) + Internal Examiner(20M)	40
Total					**100**
Mini Project - 2	BTEEPE510	5TH	Internal Assessment	Presentation -1 (30M) + Presentation -2 (30M)	60
Mini Project - 2	BTEEPE510	5TH	End Semester Examination	External Examiner(20M) + Internal Examiner(20M)	40
Total					**100**

Mini Project - 3	BTEEM708	7TH	Internal Assessment	Presentation -1 (30M) + Presentation -2 (30M)	60
Mini Project - 3	BTEEM708	7TH	End Semester Examination	External Examiner(20M) + Internal Examiner(20M)	40
Total					**100**

Academic Year (2024-25)

Name of the Students	Inhouse Project part-I Title/ Miniproject title	Project Supervisor	Contribution/ Achievements / Research Output	Matching with the stated POs, PSOs	Matching with the Blooms taxonomy levels
Pradip Nitin Dhobi Ritesh kishor bavaskar Pooja sahebrao Hiray	IoT Based Smart Power Factor Control	Prof. Mahesh H. Patil	Designed a real-time reactive power compensation unit. Achieved auto-switching of capacitor banks, improving lagging power factor	PO1, PO2, PO5, PO6, PO7, PO8 PO9, PO10 PO12 PSO1	BT1 BT2 BT3 BT4
Gayatri subhash kale Mhaske Shubhangi Kailas Trupti Ananda Bavaskar	Home Automation Using Arduino Controller Wifi.	Dr. Atul A. Barhate	Fabricated a smart relay node matrix integrated with a web interface. Allowed remote load toggling and optimized standby power drainage across home appliances.	PO1, PO2, PO5, PO6, PO7, PO8 PO9, PO10 PO12 PSO1	BT1 BT2 BT3 BT4
Rashmi Ramesh Kothoke Ashwini Tukaram Bhavsar Sudhir Anil Chaudhari	Development Of Single Phase Inverter	Prof. Sachin R. Maheshri	Designed and tested a 1kVA pure sine wave inverter using SPWM signaling. Successfully reduced Total Harmonic Distortion (THD) to under 4.5% for inductive loads.	PO1, PO2, PO5, PO6, PO7, PO8 PO9, PO10 PO12	BT1 BT2 BT3 BT4

Shubham Gopal Patil Nikita Sartale Pavan Sopan Patil	Ardunio Controller For Practical Applications	Prof. Amit V. Mhaskar	Developed a general-purpose automated industrial timer and relay trip switch configuration using microcontrollers to protect standard single-phase machinery.	PO1, PO2, PO5, PO6, PO7, PO8 PO9, PO10 PO12 PSO1	BT1 BT2 BT3 BT4
Manish Kashimanth Patil Sumedh Kailas Tayde Shubham Ravindra Chavan	Ac Induction Motor Speed Controlling	Prof. Nemichand K. Saini	Implemented a v/f (voltage/frequency) speed control topology using a microcontroller-driven inverter. Enhanced operational efficiency over a 30% to 100% wide speed range.	PO1, PO2, PO5, PO6, PO7, PO8 PO9, PO10 PO12 PSO1	BT1 BT2 BT3 BT4
Yash Prakash Chudhari Sumit Namdev Wagh Mohit Bhsakar Chaudhari	Solar power grid status monitoring and alerting with Android smart phone technology.	Prof. Sachin R. Maheshri	Engineered a remote telemetry system utilizing a Wi-Fi module to stream voltage, current, and irradiance metrics to a cloud API and custom Android client application.	PO1, PO2, PO5, PO6, PO7, PO8 PO9, PO10 PO12 PSO1	BT1 BT2 BT3 BT4
Sejal Rajendra Bharambe Vedant Nitin Rane Sachin Kishor Patil	Solar based Audio systems for announcement in classrooms	Prof. Harish A. Patil	Fabricated an eco-friendly standalone audio amplifier run strictly on decentralized solar PV roof modules. Deployed zero-grid energy operations for classroom public address.	PO1, PO2, PO5, PO6, PO7, PO8 PO9, PO10 PO12 PSO1	BT1 BT2 BT3 BT4
Wani Pranjal Pravin Patil Vivek Bapurao Patil Kundan Sunil	Battery-Management System (BMS) and SOC Development for Electrical Vehicles	Prof. Mahesh H. Patil	Developed a real-time Coulomb-counting algorithm coupled with an active cell-balancing matrix. Optimized State of Charge (SOC) estimation accuracy down to margin.	PO1, PO2, PO5, PO6, PO7, PO8 PO9, PO10 PO12 PSO1	BT1 BT2 BT3 BT4

Academic Year (2023-24)

Seminar

Name of the Students	Seminar title	Seminar Supervisor	Contribution/ Achievements / Research Output	Matching with the stated POs, PSOs	Matching with the Blooms taxonomy levels
Bavaskar Ritesh Kishor	Distributed control system	Prof. Amit Mhaskar	The seminar demonstrates the application of core engineering concepts and fundamental concept of Distributed control system, type of control system and use in the distribution. Studied architecture, communication protocols, applications and advantages of DCS in industrial automation.	PO1, PO2, PO3, PO5, PO12; PSO1, PSO2	BT2 BT4 BT5
Bhavsar Ashwini Tukaram	Lithium-ion Battery	Prof. Amit Mhaskar	The seminar demonstrates the application of core engineering concepts and fundamental of Lithium-ion Battery and this battery specification and use. Reviewed battery chemistry, charging methods, BMS, safety issues and EV application.	PO1, PO2, PO7, PO12; PSO1, PSO2	BT2 BT4 BT5
Chaudhari Mohit Bhaskar	Internet of things	Prof. Amit Mhaskar	The seminar demonstrates the application of core engineering concepts and fundamental concept of IoT. Explored IoT architecture, sensors, communication technologies and smart electrical applications.	PO1, PO2, PO3, PO5, PO12; PSO2, PSO3	BT2 BT3 BT4

Chaudhari Yash Prakash	Wave energy converter	Prof. Amit Mhaskar	The seminar demonstrates the application of core engineering concepts and fundamental concept of wave energy converter Studied wave energy conversion techniques, renewable energy potential and electrical power generation.	PO1, PO2, PO3, PO7, PO12; PSO1	BT2 BT4 BT5
Kurlekar Soham Ramlingappa	Smart home automation & power factor	Prof. Amit Mhaskar	The seminar demonstrates the application of core engineering concepts and fundamental concept of Presented smart home automation techniques integrated with power factor improvement methods.	PO1, PO2, PO3, PO5, PO7; PSO2, PSO3	BT2 BT3 BT4
Patil Manish Kashinath	Solar tracking system	Prof. Amit Mhaskar	The seminar demonstrates the application of core engineering concepts and fundamental concept of Solar tracking system. Studied automatic solar tracking techniques to improve photovoltaic system efficiency.	PO1, PO2, PO3, PO5, PO7; PSO1, PSO2	BT2 BT3 BT4
Patil Pavan Sopan	Home solar roof top	Prof. Amit Mhaskar	The seminar demonstrates the application of core engineering concepts and fundamental concept of home solar roof top. Reviewed rooftop solar PV design, net metering, installation and economic feasibility.	PO1, PO2, PO3, PO7, PO11; PSO1	BT2 BT3 BT5
Patil Shubham Gopal	Electrical vehicles	Prof. Amit Mhaskar	The seminar demonstrates the application of core engineering concepts and fundamental concept of Electrical vehicles. Studied EV components, charging infrastructure, battery technologies and environmental benefits.	PO1, PO2, PO3, PO7, PO12; PSO1, PSO2	BT2 BT4 BT5

Sartale Nikita Pradip	Wireless electricity	Prof. Amit Mhaskar	The seminar demonstrates the application of core engineering concepts and fundamental concept of wireless electricity Reviewed wireless power transfer principles, inductive coupling and practical applications.	PO1, PO2, PO3, PO5; PSO2	BT2 BT4 BT5
Tayade Sumedh Kailas	All type of tariffs in electrical energy distribution	Prof. Amit Mhaskar	Studied different electricity tariff structures, billing methods and their impact on consumers.	PO1, PO2, PO10, PO11; PSO1	BT1 BT2 BT4
Wagh Sumit Namdev	Wind power plant of gujarat (veraval)	Prof. Amit Mhaskar	The seminar demonstrates the application of core engineering concepts and fundamental concept of Thyristor devices. Presented case study on wind power generation, plant configuration and performance analysis.	PO1, PO2, PO3, PO7, PO12; PSO1	BT2 BT4 BT5
Wani Pranjal Pravin	Thyristor devices	Prof. Amit Mhaskar	The seminar demonstrates the application of core engineering concepts and fundamental concept of thyristor devices. Studied construction, operation, characteristics and industrial applications of thyristor devices.	PO1, PO2, PO3, PO5; PSO1, PSO2	BT2 BT3 BT4
Bavaskar Trupti Ananda	RTPFC Panel	Prof. Amit Mhaskar	The seminar demonstrates the application of core engineering concepts and fundamental concept of RTPFC Panel. Studied the design, operation and benefits of Reactive Power Factor Correction (RTPFC) panels for improving power quality and reducing energy losses.	PO1, PO2, PO3, PO5, PO12; PSO1, PSO2	BT2 BT4 BT5

Bharambe Sejal Rajendra	Exhaust flue gas in thermal power plant	Prof. Amit Mhaskar	The seminar demonstrates the application of core engineering concepts and fundamental concept of thermal power plant. Reviewed flue gas generation, emission control techniques and environmental impact in thermal power plants.	PO1, PO2, PO7, PO12; PSO1	BT2 BT4 BT5
Chaudhari Sudhir Anil	Mono perk solar cell	Prof. Amit Mhaskar	The seminar demonstrates the application of core engineering concepts and fundamental concept of mono perk solar cell. Studied Mono PERC solar cell technology, efficiency improvement and photovoltaic applications.	PO1, PO2, PO3, PO7, PO12; PSO1, PSO2	BT2 BT4 BT5
Chavan Shubham Ravindra	Data analysis in electrical engineering	Prof. Amit Mhaskar	The seminar demonstrates the application of core engineering concepts and Explored data analysis techniques for monitoring, fault diagnosis and performance evaluation in electrical systems.	PO1, PO2, PO5, PO12; PSO2, PSO3	BT2 BT3 BT4
Dhobi Pradip Nitin	Renewable energy	Prof. Amit Mhaskar	The seminar demonstrates the application of core engineering concepts and fundamental renewable energy sources, generation technologies and sustainable power systems.	PO1, PO2, PO3, PO7, PO12; PSO1	BT2 BT4 BT5
Hiray Pooja Sahebrao	GIS system	Prof. Amit Mhaskar	The seminar demonstrates the application of core engineering concepts and fundamental concept of GIS system. Studied Gas Insulated Switchgear (GIS), its construction, operation and applications in high-voltage substations.	PO1, PO2, PO3, PO5; PSO1, PSO2	BT2 BT4 BT5

Kale Gayatri Subhash	Solar energy in refrigeration system	Prof. Amit Mhaskar	The seminar demonstrates the application of core engineering concepts and fundamental. It discusses the Reviewed the use of solar energy for refrigeration systems to improve energy efficiency and sustainability.	PO1, PO2, PO3, PO7, PO12; PSO1	BT2 BT3 BT4
Koli Ganesh Sopan	Electric vehicle	Prof. Amit Mhaskar	The seminar demonstrates the application of core engineering concepts and fundamental concept of electric vehicle. Studied electric vehicle architecture, battery technology, charging infrastructure and environmental benefits.	PO1, PO2, PO3, PO7, PO12; PSO1, PSO2	BT2 BT4 BT5
Mhaske Shubhangi Kailas	Moisture measurement technique in soil	Prof. Amit Mhaskar	The seminar demonstrates the application of core engineering concepts and fundamental concept of soil moisture sensing techniques and their applications in smart irrigation and agriculture.	PO1, PO2, PO3, PO5; PSO2, PSO3	BT2 BT3 BT4
Patil Kundan Sunil	Nuclear battery	Prof. Amit Mhaskar	The seminar demonstrates the application of core engineering concepts and fundamental concept of nuclear battery. Studied nuclear battery technology, operating principles, advantages and specialized applications.	PO1, PO2, PO7, PO12; PSO1	BT2 BT4 BT5
Patil Sachin Kishor	Energy meters	Prof. Amit Mhaskar	The seminar demonstrates the application of core engineering concepts and fundamental concept of energy meters. Reviewed conventional and smart energy meters, metering principles and billing applications.	PO1, PO2, PO3, PO5; PSO1, PSO2	BT2 BT3 BT4

Patil Vivek Bapurao	IoT (Internet of Things)	Prof. Amit Mhaskar	The seminar demonstrates the application of core engineering concepts and fundamental concept of IoT. Studied IoT architecture, communication protocols and smart electrical applications.	PO1, PO2, PO3, PO5, PO12; PSO2, PSO3	BT2 BT3 BT4
Rane Vedant Nitin	Smart grid system	Prof. Amit Mhaskar	The seminar demonstrates the application of core engineering concepts and fundamental concept of Smart grid system. smart grid technologies, communication systems and intelligent power distribution.	PO1, PO2, PO3, PO5, PO12; PSO1, PSO2	BT2 BT4 BT5
Tayade Rohit Shantaram	Vehicle-to-Grid (V2G) Integration	Prof. Amit Mhaskar	The seminar demonstrates the application of core engineering concepts and fundamental concept of V2G technology, bidirectional power flow, grid support and EV integration.	PO1, PO2, PO3, PO7, PO12; PSO1, PSO2	BT2 BT4 BT5
Vispute Harshal Subhash	Energy Audit	Prof. Amit Mhaskar	The seminar demonstrates the application of core engineering concepts and fundamental concept of Energy Audit, energy auditing procedures, energy conservation measures and efficiency improvement techniques.	PO1, PO2, PO3, PO7, PO11, PO12; PSO1, PSO2	BT2 BT4 BT5

Mini Project

Name of the Students	**Mini Project Title**	**Project Supervisor**	**Contribution/ Achievements / Research Output**	**Matching with the stated POs, PSOs**	**Matching with the Blooms taxonomy levels**

Tayade Sumedh Kailas Mhaske Shubhangi Kailas	Water heater controller using timer	Prof. Harish Patil	It discusses the literature review to understand the concept of water heater controller Designed and implemented a timer-based controller for automatic operation of a water heater to reduce energy consumption and improve safety.	PO1, PO2, PO3, PO5, PO7, PO12; PSO1, PSO2	BT3 BT4 BT6
Chavan Shubham Ravindra Kurlekar Soham Ramlingappa	Electrical tool kit	Prof. Harish Patil	Developed a compact electrical toolkit containing essential testing and maintenance tools for electrical installations and troubleshooting.	PO1, PO2, PO3, PO5, PO10; PSO1, PSO2	BT3 BT4 BT6
Dhobi Pradip Nitin Chaudhari Yash Prakash	Automation of street light	Prof. Amit Mhaskar	Designed an automatic street lighting system using light sensors to improve energy efficiency and reduce manual operation.	PO1, PO2, PO3, PO5, PO7, PO12; PSO1, PSO2	BT3 BT4 BT6
Patil Manish Kashinath Patil Pavan Sopan	Door security alarm	Prof. Amit Mhaskar	Developed a door security alarm system using sensors to detect unauthorized entry and enhance safety.	PO1, PO2, PO3, PO5, PO7; PSO2, PSO3	BT3 BT4 BT6
Wagh Sumit Namdev Chaudhari Mohit Bhaskar	Digital programmable electrical timer	Prof. Amit Mhaskar	Designed a programmable timer for automatic ON/OFF control of electrical appliances with improved operational flexibility.	PO1, PO2, PO3, PO5, PO12; PSO1, PSO2	BT3 BT4 BT6
Bhavsar Ashwini Tukaram Sartale Nikita Pradip	Remote control switch for 4 lights & 1 fan	Prof. Sachin Maheshri	Developed a remote-controlled switching system for four lights and one fan to improve user convenience and energy management.	PO1, PO2, PO3, PO5, PO7, PO12; PSO2, PSO3	BT3 BT4 BT6

Bavaskar Ritesh Kishor Chaudhari Sudhir Anil Bavaskar Trupti Ananda	Lithium-ion battery charger	Prof. Atul Barhate	Designed and developed a safe Li-ion battery charging circuit with overcharge protection, voltage regulation, charging status indication, and tested the charger for efficiency and reliable operation.	PO1, PO2, PO3, PO4, PO5, PO9, PO10, PSO1, PSO2	BT1 BT2 BT3 BT4 BT6
Bharambe Sejal Rajendra Patil Kundan Sunil Patil Shubham Gopal	Fire detection system	Prof. Sachin Maheshri	Developed a fire detection system using temperature/smoke sensors with alarm indication. Tested the system under different environmental conditions to improve response and reliability.	PO1, PO2, PO3, PO4, PO5, PO9, PO10, PO12 PSO1, PSO2	BT2 BT3 BT4 BT6
Patil Sachin Kishor Patil Vivek Bapurao Hiray Pooja Sahebrao	Solar power lighting system	Prof. Harish Patil	Designed and implemented a solar-powered LED lighting system using photovoltaic panels, rechargeable battery, and charge controller. Evaluated system performance under varying sunlight conditions.	PO1, PO2, PO3, PO4, PO5, PO7, PO9, PSO1, PSO2	BT1 BT2 BT3 BT4 BT6
Wani Pranjal Pravin Kale Gayatri Subhash Rane Vedant Nitin	Water level indicator system	Prof. Atul Barhate	Developed an automatic water level monitoring system using conductive sensors with LED and buzzer indication to prevent water overflow and dry running.	PO1, PO2, PO3, PO4, PO5, PO9, PSO1, PSO2	BT2 BT3 BT4 BT6

Koli Ganesh Sopan Tayade Rohit Shantaram Vispute Harshal Subhash	Battery monitoring system	Prof. Harish Patil	Studied the fundamentals of battery monitoring systems. Designed and developed a battery monitoring circuit to measure battery voltage and indicate battery status. Tested the system under different charging and discharging conditions and verified its performance for reliable battery health monitoring.	PO1, PO2, PO3, PO5, PO9, PSO1, PSO2	BT1 BT2 BT3 BT4 BT6

Academic Year (2022-23)

Name of the Students	**Mini Project Title**	**Mini Project Supervisor**	**Contribution/ Achievements / Research Output**	**Matching with the stated POs, PSOs**	**Matching with the Blooms taxonomy levels**
Bharambe Sejal Rajendra Kale Gayatri Subhash Bhavsar Ashwini Tukaram Sartale Nikita Pradip	230V AC to 12V DC power supply	Prof. Mahesh H. Patil	Studied AC–DC conversion techniques. Designed and developed a regulated 230V AC to 12V DC power supply using transformer, rectifier, filter and voltage regulator. Tested output voltage and load performance.	PO1, PO2, PO3, PO5, PO9, PSO1, PSO2	BT2BT3 BT4 BT6

Chaudhari Mayuri Sanjay Mahajan Chetan Gulab Patil Harshal Shivaji Koli Ganesh Sopan	Voltage regulator	Prof. Harish Patil	Designed and implemented a voltage regulator circuit to maintain constant output voltage under varying input and load conditions. Verified regulation characteristics experimentally.	PO1, PO2, PO3, PO5, PO9, PSO1, PSO2	BT2BT3 BT4 BT6
Patil Shubham Gopal Mhaske Shubhangi Kailas Koli Rupam Nitin Patil Manish Kashinath	Security alarm system	Prof. Sachin Maheshri	Developed a security alarm system using sensors and buzzer for unauthorized entry detection. Tested system response and reliability under different operating conditions.	PO1, PO2, PO3, PO5, PO9, PSO1, PSO2	BT2BT3 BT4 BT6
Hiray Pooja Sahebrao Bavaskar Trupti Ananda Sali Bhagyashri Mahendra Wankhede Apurva Ashok	Rectifier bridge unit convert AC to DC	Prof. Atul Barhate	Designed and assembled a bridge rectifier circuit for AC to DC conversion. Measured output voltage, ripple factor and verified rectifier performance using laboratory instruments.	PO1, PO2, PO3, PO5, PO9, PSO1, PSO2	BT2BT3 BT4 BT6

Shaikh Sahil Shaikh Nasir Wagh Sumit Namdev Vispute Harshal Subhash Chaudhari Yash Prakash	Temperature Monitoring System	Prof. Mahesh H. Patil	Developed a temperature monitoring system using temperature sensors and digital display. Tested the system over different temperature ranges and verified measurement accuracy.	PO1, PO2, PO3, PO5, PO9, PSO1, PSO2	BT2BT3 BT4 BT6
Tayade Rohit Shantaram Patil Pavan Sopan Chaudhari Sudhir Anil Bhoi Ravindra Shriram	Temperature Controlled Fan System	Prof. Sachin Maheshri	Studied the working principle of temperature sensors and automatic control systems. Designed and developed a temperature-controlled fan system that automatically varies the fan speed according to ambient temperature. Tested the system under different temperature conditions and verified its reliable and energy-efficient operation.	PO1, PO2, PO3, PO5, PO7, PO9, PSO1, PSO2	BT2BT3 BT4 BT6
Hiwale Pavan Suresh Patil Sachin Kishor Patil Kundan Sunil Patil Sujit Samar	Power Failure Alarm	Prof. Atul Barhate	Developed a power failure alarm circuit to provide immediate indication during mains supply interruption. Tested alarm operation under normal and fault conditions.	PO1, PO2, PO3, PO5, PO9, PSO1, PSO2	BT2BT3 BT4 BT6

Kurlekar Soham Ramlingappa Tayade Sumedh Kailas Chavan Shubham Ravindra Dhobi Pradip Nitin	DC Motor Speed Controller	Prof. Harish Patil	Designed and implemented a DC motor speed controller using variable voltage/PWM technique. Tested speed variation under different load conditions and evaluated controller performance.	PO1, PO2, PO3, PO5, PO9, PSO1, PSO2	BT2BT3 BT4 BT6
Chaudhari Mohit Bhaskar Rane Vedant Nitin Dasare Sachin Ramnath Kale Aditya Santosh	Door Bell with Automatic Light	Prof. Sachin Maheshri	Designed a doorbell system integrated with automatic lighting to improve convenience and energy efficiency. Demonstrated automatic light operation during doorbell activation.	PO1, PO2, PO3, PO5, PO9, PSO1, PSO2	BT2BT3 BT4 BT6
Patil Bhushan Bapu Raut Fulji Raysing Baraskar Aryan Chandrakant Bavaskar Ritesh Kishor	Motion Sensor-Based Light Controller	Prof. Atul Barhate	Developed a motion sensor-based lighting system using PIR sensor for automatic ON/OFF control. Verified system performance for energy conservation in indoor applications.	PO1, PO2, PO3, PO5, PO7, PO9, PSO1, PSO2	BT2BT3 BT4 BT6

2.5 Case Studies and Real-Life Examples (10)

Case studies and real-life examples illustrate how concepts and theories apply in practice, showing results and specific situations. They offer practical, hands-on learning by examining complex scenarios, enhancing critical thinking and decision-making skills for professio world applications show the actual impact, which can include improved efficiency, cost savings, and other quantifiable results.

Impact of case studies and real-life Examples -

- **To demonstrate value:** Businesses use case studies to provide proof of their products or services effectiveness to potential customers.
- **To facilitate learning:** Educational programs use case studies to help students apply theoretical knowledge to practical, complex situations and develop problem-solving skills.
- **To inspire innovation:** By analyzing past successes and failures, case studies can spark new ideas and motivate creative thinking for future projects.
- **To showcase outcomes:** Case studies often include data and quantifiable results, such as efficiency gains or cost savings, to provide concrete evidence of benefits.

Sl. No.	Title / Topic	Name of the Guide	Program Outcome (PO)/PSO Mapped	Description of Case Studies / Real life Example	Application Area / Domain/ Type of Complexity
1	Airport Authority of India, Jalgaon	Prof. Atul A. Barhate	PO1, PO2, PO3, PO4, PO5, PO7, PO11, PO12 PSO1, PSO2	Students studied the electrical power distribution network of Airport Authority of India, including HT/LT substations, DG backup systems, airfield lighting, UPS systems, earthing, and safety practices. The case study emphasized the reliability, uninterrupted power supply, and preventive maintenance required for airport operations. Students observed real-time operation of electrical equipment and analyzed the importance of safety standards and energy management in critical infrastructure.	Electrical Power Systems, Industrial Electrical Engineering, Critical Infrastructure, Real-life Engineering Problem

Apart from the above the real life examples are expreienced through the experientaial learning like Industry interaction, Mini and Capstone projects.

2.6 SWAYAM/NPTEL/MOOC/Self Learning (10)

Institute has NPTEL/ Swayam Chapter and students are motivated for the participation in NPTEL courses and also motivated for the participation in national / state level competition. Following are the details.

SWAYAM / NPTEL Courses Registration / Certification

Sr. No.	Name of the student	Activity Details	Date	POs/PSOs addressed
1	Phalak Vineet Ashok	Project Management-Online	Jul - Dec 2021 26/09/2021	PO2, PO9, PO11, PO12 PSO1, PSO2
2	Dinesh Dharma Vasave	Advances in UHV Transmission and Distribution	Jul - Dec 2022 25/09/2022	PO1, PO2, PO5, PO11, PSO1, PSO2
3	Rahul Jamsing Pawara	Introduction to Smart Grid	Jul - Dec 2022 25/09/2022	PO1, PO2, PO3, PO5, PO11, PO12, PSO1, PSO2
4	Tulja Gajanan Mahajan	Enhancing Soft Skills and Personality	Jan - Apr 2024 20/04/2024	PO9, PO10, PO11, PO12, PSO1, PSO2

2.7 Solving Complex Engineering Problems Incorporating Sustainability Goals (20)

- Project Models with CO relation with SDG mapping. Mini project/ Major project/ Capstone project/ Hackathon etc.
- SDG mapping table can be made.

Sl. No	Problem Title / Scenario	Course Name & Code	Program Outcome (PO) Mapped	Sustainability Goal Addressed (SDG)	Description of Problem	Engineering Approach / Methodology	Tools / Technologies Used	Solution Proposed	Impact on Society / Environment	Assessment Method
1	Automatic power factor controller using arduino	Project BTEEP802	PO1 to PO12 PSO1, PSO2	SDG7, SDG9, SDG12	Low power factor causes increased losses and penalties in power systems.	Industrial Automation/Embedded Systems / IoT	IoT & Arduino IDE	Automatic monitoring and correction of power factor.	Reduced energy losses, improved power quality, efficient energy utilization.	Report /Practical test / Viva
2	Home Automation Using Wifi.	Project BTEEP802	PO1 to PO12 PSO1, PSO2	SDG7, SDG9, SDG11	Manual control of home appliances leads to energy wastage and inconvenience.	Industrial Automation/Embedded Systems / IoT	Arduino IDE	Smart control of electrical appliances through smartphone.	Energy conservation and improved living comfort.	Report / Viva Simulation
3	Development Of Single Phase Inverter	Project BTEEP802	PO1 to PO12 PSO1, PSO2	SDG7, SDG9	Need for AC supply from DC sources in backup and renewable systems.	Power Electronics & Drives	MATLAB	Conversion of DC power into AC power.	Supports renewable energy and backup power systems.	Report / Viva
4	Literature review on prototyping with Arduino	Project BTEEP802	PO1 to PO12 PSO1, PSO2	SDG4, SDG9	Need for low-cost automation and control systems.	Industrial Automation/Embedded Systems / IoT	Arduino IDE and devices	Implementation of practical automation and monitoring systems.	Enhances technical skills and innovation capabilities.	Report / Viva
5	Ac Induction Motor Speed Controlling using smart phone	Project BTEEP802	PO1 to PO12 PSO1, PSO2	SDG7, SDG9, SDG12	Fixed-speed motors consume excess energy in variable-load applications.	Power Electronics & Drives	MATLAB	Efficient motor speed regulation.	Energy savings and increased industrial productivity.	Report / Viva

6	Solar power grid status monitoring and alerting with Android smart phone technology.	Project BTEEP802	PO1 to PO12 PSO1, PSO2	SDG7, SDG9, SDG13	Difficulty in monitoring solar plant performance remotely.	Renewable Energy	Arduino IDE and electrical devices.	Real-time monitoring and fault alerts.	Improved reliability of renewable energy systems and reduced carbon emissions.	Report / testing and analysis / Viva
7	Solar power Audio systems	Project BTEEP802	PO1 to PO12 PSO1, PSO2	SDG7, SDG4, SDG13	Conventional announcement systems depend entirely on grid electricity.	Renewable Energy	Arduino IDE and electrical devices.	Solar-powered announcement system for educational institutions.	Green energy utilization and uninterrupted communication.	Report / testing and demonstration / Viva
8	Battery-Management System (BMS) and SOC Development for Electrical Vehicles	Project BTEEP802	PO1 to PO12 PSO1, PSO2	SDG 7, SDG 9, SDG11, SDG13	Battery safety and accurate charge estimation are major EV challenges.	Emerging Technology (Electric Vehicles)	Arduino IDE, Battery Monitoring Software	Safe battery operation and accurate SOC monitoring.	Promotes electric mobility and reduction in greenhouse gas emissions.	Report and practical test
9	230V AC to 12V DC power supply	Project BTEEP802	PO1, PO2, PO3, PO5, PO9, PSO1, PSO2	SDG 7	Need for safe low-voltage DC supply for electronic devices.	Step-down transformer, rectifier, filter and voltage regulator design.	Transformer, Bridge Rectifier, Capacitor, IC 7812, PCB, Multimeter	Designed a regulated 12V DC power supply from 230V AC.	Standalone solar-powered lighting system.	Report/testing and demonstration/ Viva
10	Temperature Controlled Fan System	Project BTEEP802	PO1, PO2, PO3, PO5, PO7, PO9, PSO1, PSO2	SDG 7, SDG13	Conventional fans waste energy due to manual operation	Temperature sensing and automatic speed control using controller.	Sensor, Arduino/Comparator, Relay, DC Fan	Fan speed automatically varies according to temperature.	Saves electricity, improves comfort, and reduces energy consumption.	Report/testing and demonstration/ Viva

11	DC Motor Speed Controller	Project BTEEP802	PO1, PO2, PO3, PO5, PO9, PSO1, PSO2	SDG 9	Need for efficient speed control of DC motors	PWM-based speed control using power electronics.	DC Motor, Arduino, Potentiometer	Smooth and efficient motor speed regulation.	Improves energy efficiency and industrial motor control.	Report/testing and demonstration/ Viva
12	water heater controller using timer	Project BTEEP802	PO1, PO2, PO3, PO5, PO7, PO12; PSO1, PSO2	SDG 7, SDG12	Water heaters consume unnecessary electricity if left ON.	Timer-based automatic switching of heater load.	Timer Module, Relay, Microcontroller, Heater	Automatic ON/OFF control according to preset time.	Conserves electrical energy and enhances user safety.	Report/testing and demonstration/ Viva
13	remote control switch for 4 lights & 1 fan	Project BTEEP802	PO1, PO2, PO3, PO5, PO7, PO12; PSO2, PSO3	SDG 9, SDG11	Manual control of home appliances is inconvenient.	Wireless switching using RF/Bluetooth/IR technology.	Arduino, Relay Module, Bluetooth Module, Mobile App	Remote operation of four lights and one fan.	Improves convenience, supports smart home automation, and saves energy.	Report/testing and demonstration/ Viva
14	Fire detection system	Project BTEEP802	PO1, PO2, PO3, PO4, PO5, PO9, PO10, PO12 PSO1, PSO2	SDG 3, SDG11	Early detection of fire hazards to minimize loss of life and property.	Smoke/temperature sensing with alarm generation.	Flame Sensor, Smoke Sensor, Buzzer, Arduino, LCD	Automatic fire detection with audio/visual alert.	Enhances public safety and reduces accident risks.	Report/testing and demonstration/ Viva
15	Solar power lighting system	Project BTEEP802	PO1, PO2, PO3, PO4, PO5, PO7, PO9, PSO1, PSO2	SDG 7, SDG13	Dependence on conventional electricity for lighting.	Solar PV generation with battery storage and LED lighting.	Solar Panel, Battery, Charge Controller, LED Lamp	Standalone solar-powered lighting system.	Promotes renewable energy, reduces carbon emissions, and lowers electricity cost.	Report/testing and demonstration/ Viva

2.8 Steps Taken for Enhancing Industry Institute Partnerships (15)

1. Initiation from the Training and Placement Cell of the institute.
2. Department with T & P cell arranges industrial visits to the students. Faculty will accompany the students during their visit.
3. Student groups prepare report related to manufacturing activities, material control, and quality control activities of the industries and submit it to the department.
4. Industry professional are visiting the institute and delivering the guest talks related to latest technologies.

Tables for 2022-23, 2023-24 and 2024-25 Industrial MOUs:

Name of the Industry	MOU	Activities Conducted	Impact Analysis (To be written in relevance to POs and PSOs)
Soyo systems private limited, Jalgaon Plot No. M-91, MIDC Area, Behind GF's GCOE, Patil Nagar, Jalgaon, Maharashtra 425003	Industrial Training & Visits, Guest Lectures, Placement of training of students	Industrial Training & Visits	PO7, PO9, PO10, PO11, PO12, PSO1, PSO2
Nilraj Industries Private Limited, Jalgaon P-69, Near Bharat Petroleum, MIDC, Jalgaon, Maharashtra - 425003	Industrial Training & Visits, Guest Lectures Placement of training of students	Industrial Training & Visits	PO7, PO9, PO10, PO11, PO12, PSO1, PSO2
MassTech Private Limited, Jalgaon Plot No. G-23, MIDC Industrial Area, Ajantha Road, Jalgaon - 425003	Industrial Training & Visits, Placement of training of students	Industrial Training & Visits	PO7, PO9, PO10, PO11, PO12, PSO1, PSO2
Electrosoft system, Jalgaon. 1st Floor, Near 90 Degree, Girana Taki Road, near M.J. College Road	Industrial Training & Visits, Guest Lectures, Placement of training of students	Industrial Training, Guest lecture	PO7, PO9, PO10, PO11, PO12, PSO1, PSO2
Tech Flow Pvt Ltd., Jalgaon Plot No. C-5/1, MIDC, Ajanta Road, Jalgaon - 425003	Industrial Training & Visits, Guest Lectures, Placement of training of students	Industrial Placement	PO7, PO9, PO10, PO11, PO12, PSO1, PSO2

Sai Lee Electrotekniks Pvt. Ltd, Pune S. R. No. 44/9, Narhe-Dhayari Road, Pune - 411041	Industrial Training & Visits, Guest Lectures, Placement of training of students	Industrial Placement	PO6, PO7, PO9, PO10, PO11, PO12, PSO1, PSO2
Softaid Systems, Jalgaon Shop No. 56, Monalisa Arcade, Shivram Nagar, near M. J. College Road, Jalgaon - 425001	Industrial Training & Visits, Guest Lectures, Placement of training of students	Guest lecture	PO7, PO9, PO10, PO11, PO12, PSO1, PSO2
Sumadhu Industries Plot No. M-138, Additional MIDC, behind Godavari Engineering College, Jalgaon	Industrial Training & Visits, Guest Lectures, Placement of training of students	Industrial Placement	PO7, PO9, PO10, PO11, PO12, PSO1
Prameya Industries Plot No. N-23, MIDC Area, Jalgaon	Industrial Training & Visits, Guest Lectures, Placement of training of students	Industrial Placement	PO7, PO9, PO10, PO11, PO12, PSO1, PSO2
Chinmay Engineers Pvt. Ltd., Jalgaon Plot No. W-56, BPCL Road, MIDC, Jalgaon	Industrial Training & Visits, Guest Lectures, Placement of training of students	Industrial Placement	PO7, PO9, PO10, PO11, PO12, PSO1
Parikshit Engineering works, MIDC, Jalgaon Plot No. M-136, MIDC, Jalgaon	Industrial Training & Visits, Guest Lectures, Placement of training of students	Industrial Placement	PO7, PO9, PO10, PO11, PO12, PSO1
Dronarthra Engergy Flight Pvt Ltd, Thane	Industrial Training & Visits, Guest Lectures, Placement of training of students	Industrial Placement	PO4, PO7, PO9, PO10, PO11, PO12, PSO1, PSO2
Greatway sofware PVT LTD S.No. 6, H.No. 2/1 (P 2/22A), Stellar Spaces, Office No. 101, Vadgaon Sheri, Pune	Industrial Training & Visits, Guest Lectures, Placement of training of students	Industrial Placement	PO7, PO9, PO10, PO11, PO12, PSO1, PSO2

Godavari Institute of Management & Research, Jalgaon GIMR Campus, P-54, near Bharat Petroleum, Additional MIDC, Bhusawal Road, Jalgaon - 425003	Sister institute	Faculty Interaction, Student Exchange, Workshops	PO4, PO9, PO10, PO12, PSO1, PSO2
Dr Varsha Patil Womens College of Computer Application, Jalgaon Building No. 02, Plot No. P-54, Additional MIDC, near Bharat Petroleum, Jalgaon	Sister institute	Academic Collaboration, Workshop	PO4, PO9, PO10, PO12, PSO1, PSO2
Airport Authority of India, Jalgaon	Industrial Training & Visits, Guest Lectures, Placement of training of students	Industrial Training & Placement	PO6, PO7, PO9, PO10, PO11, PO12, PSO1
Government College of Engineering, Jalgoan	Sister institute	Faculty Development Programmes, Workshops, Student Interaction	PO4, PO9, PO10, PO12, PSO1, PSO2
Leva Bhratrumandal Office No. 106 B, Prime Square Commercial Complex, Pimple Saudagar, Pune	Provide co-operation to the poor students regarding their future	Provide cooperation to the poor students regarding their future	PO6, PO8, PO9, PO12, PSO3
MKCL	Industrial Training Course	Guest lecture	PO7, PO9, PO10, PO11, PO12, PSO1, PSO2

Industrial Visit:

Industrial visits are conducted which enable students to integrate theory and practical knowledge. Industrial visit has its own importance in a career of a student who is pursuing a professional degree. It is considered as a part of college curriculum. Industrial visits provide companies. We know theoretical knowledge is not enough for making a good professional career. With an aim to go beyond academics, industrial visit provides student a practical perspective on the world of work. It provides students with an opportunity to learn practicall practices.

Name of the Industry	Date/Duration	Gaps Addressed	Impact Analysis (To be written in relevance to Pos and PSOs)
The Raymond LTD, Jalgaon plant Tah. Jalgaon, Dist. Jalgaon	11/05/2022	Exposure to Equipment and processes in the industry	PO1, PO5, PO6, PO7, PO8, PO9,PO10, PO11, PO12, PSO1, PSO2
RAJESH ELECTROFAB, Jalgaon, Tah. Jalgaon, Dist. Jalgaon	10/06/2022	Exposure to Equipment and processes in the industry	PO1, PO5, PO6, PO7, PO8, PO9,PO10, PO11, PO12, PSO1, PSO2
Bhusawal Thermal Power Station Deepnagar, Taluk: Bhusawal District: Jalgaon	04/12/2023	Exposure to Equipment and processes in the industry	PO1, PO5, PO6, PO7, PO8, PO9,PO10, PO11, PO12, PSO1, PSO2
Ashish Electricals Jalgaon, Tah. Jalgaon, Dist. Jalgaon	02/01/2024	Exposure to Equipment and processes in the industry	PO1, PO5, PO6, PO7, PO8, PO9,PO10, PO11, PO12, PSO1, PSO2
Nilraj Enterprises MIDC, Jalgaon P-69, Near Bharat Petroleum, MIDC, Jalgaon, Maharashtra - 425003	03/05/2024	Exposure to Equipment and processes in the industry	PO1, PO5, PO6, PO7, PO8, PO9,PO10, PO11, PO12, PSO1, PSO2
Ashish Electricals Jalgaon, Tah. Jalgaon, Dist. Jalgaon	03/05/2024	Exposure to Equipment and processes in the industry	PO1, PO5, PO6, PO7, PO8, PO9,PO10, PO11, PO12, PSO1, PSO2
Soyo System, Jalgaon Plot No. M-91, MIDC Area, Behind GF's GCOE, Patil Nagar, Jalgaon - 425003	06/05/2024	Exposure to Equipment and processes in the industry	PO1, PO5, PO6, PO7, PO8, PO9,PO10, PO11, PO12, PSO1, PSO2

Jain Valley, Jain Food Park, Shirsoli Road, Jalgaon - 425001	06/08/2024	Exposure to Equipment and processes in the industry	PO1, PO5, PO6, PO7, PO8, PO9,PO10, PO11, PO12, PSO1, PSO2

Industrial Guest Lectures

Resource Person	**Title/Topic Addressed**
Er. Nilesh Wagh Co-Founder & CEO, ElectroSoft Technologies, Pune, Maharashtra	Five days Workshop on “Basic PLC and Drone Technology”
Mr. Kaushik Waghulde Kumar Electricals regd. Govt. Electrical Contractor	Practical industry knowledge, career opportunities, and essential skills

Er. Nilesh Wagh Co-Founder & CEO, ElectroSoft Technologies, Pune, Maharashtra	Workshop on Innovative Project Development
Prof. Amit Mhaskar (https://www.facebook.com/hashtag/prof_amit_mhaskar?__eep__=6&__cft__%5b0%5d=AZVtcJ_wKNj7Q8Hz339kqMtlwdnYwq1tO4GnBgzME0MqjMt-HrefZBYT1_Ns5hhBy_3WpKNQJE9YsBgcTyCt6IVz1c_nQtrWRWm7W7gvNtCkLJL9LtLyrjRbGy2Ze_UNPgCxowZVaV1cgmQGmUrsKEm6LIRXYAJeDjNMsv0akthyDhzOngK5F-Ie73FYRGsA-Z0&__tn__=*NK-R) GFs GCOE Jalgaon	Workshop (https://www.facebook.com/hashtag/week_workshop?__eep__=6&__cft__%5b0%5d=AZVtcJ_wKNj7Q8Hz339kqMtlwdnYwq1tO4GnBgzME0MqjMt HrefZBYT1_Ns5hhBy_3WpKNQJE9YsBgcTyCt6IVz1c_nQtrWRWm7W7gvNtCkLJL9LtLyrjRb XYAJeDjNMsv0akthyDhzOngK5F-Ie73FYRGsA-Z0&__tn__=*NK-R) on MATLAB (https://ww __eep__=6&__cft__%5b0%5d=AZVtcJ_wKNj7Q8Hz339kqMtlwdnYwq1tO4GnBgzME0MqjMt HrefZBYT1_Ns5hhBy_3WpKNQJE9YsBgcTyCt6IVz1c_nQtrWRWm7W7gvNtCkLJL9LtLyrjRb XYAJeDjNMsv0akthyDhzOngK5F-Ie73FYRGsA-Z0&__tn__=*NK-R) ELECTRICAL (https://w __eep__=6&__cft__%5b0%5d=AZVtcJ_wKNj7Q8Hz339kqMtlwdnYwq1tO4GnBgzME0MqjMt HrefZBYT1_Ns5hhBy_3WpKNQJE9YsBgcTyCt6IVz1c_nQtrWRWm7W7gvNtCkLJL9LtLyrjRb XYAJeDjNMsv0akthyDhzOngK5F-Ie73FYRGsA-Z0&__tn__=*NK-R)
Prof Mahesh H. Patil GFs GCOE Jalgaon	Behavior of Engineering Students at campus

Prof. A. D. Vishwakarma, Prof. V. D. chaudhari, Prof. Hemant Nehete, Prof. Nemichand Saini GF's GCOE Jalgaon	Aurdino workshop, Introduction to IoT
Prof. A. A. Barhate (EE Department) GF's GCOE Jalgaon	Blooms taxanomy
Prof. Daniel C Hindustan Institute of Technology and Science (HITS) Padur, Chennai–603103	Entrepreneurship and Innovation as Carrier Opportunities

Mr. Gaurav Waghulde Assistant Engineer, MSEDCL, Jalgaon, MH	Energy Conservation for the Future
Prof. A. A. Barhate (EE Department) GF's GCOE Jalgaon	Application Of Power Electronics in Electrical Engineering
Prof. Nemichand Saini and Prof. Sachin Maheshri GF's GCOE Jalgaon	Basic IoT & Sensors Workshop

Prof. A. S. Zope Government poly. Jalgaon	Fundamentals of Machines
Vinod Tupe and Dinesh Gawali	Entrepreneurship Development Program
Prof. A. A. Barhate (EE Department) GF's GCOE Jalgaon	Energy conservation day

Prof. Vijay Chaudhary Director bio-medical engineering	Problem solving fit and ideation
Mr. Rajesh Thakare Co-Founder & CEO Electrosoft System	Converting Innovation into a Startup
Mr. Tushar Chaudhari Assistant System Engineer TCS	How to Prepare and Face TCS Ninja Technical Interview
Prof. Mahesh H. Patil GFs GCOE, Jalgaon	Washington accord

Other Industrial Activity

Name of the Activity	Date/Duration	No. of students Participated	Gaps Addressed	Impact Analysis (To be written in relevance to POs and PSOs)
Visit at Bramhaganga Hydro power plant kasol Project	14/03/2025 4 Hours	33 students 4th and 6th Sem	Exposure to Equipment and processes in the plant project	PO1, PO2, PO4, PO5, PO6, PO7, PO9, PO10, PO11, PO12 PSO1, PSO2

Impact analysis of Initiatives related to industry interaction

- New innovative ideas from students on the basis of some projects.
- Students gained from this exposure to incorporate an entrepreneurial spirit and project- based thinking.
- Skills or abilities of students improved.
- Knowledge on various aspects of project management was developed.
- Confidence level of the students was boosted.
- Improved teamwork spirit.
- Implementation and deployment of the project for social benefits.
- Document preparation and presentation.
- Opportunities to showcase their project work in project exhibition.
- Students picked up what they learnt at the workshops to implement their own mini project and also final year projects.

3 OUTCOME-BASED ASSESSMENT (120)

3.1 Evaluation of Continuous Assessment: Assignments, Unit Tests, Mid-Term, etc. (10)

Continuous assessment is conducted throughout the semester to monitor student learning progress and ensure consistent academic performance. It incorporates multiple evaluation components to assess knowledge, application, analytical thinking, and communication s

The institution strictly follows the evaluation process prescribed by the Dr. Babasaheb Ambedkar Technological University (DBATU) under the CBCS pattern, wherein:

- 40% of marks are reserved for internal assessment
- 60% of marks are allotted to the university examination (End Semester Examination).

The Dean (Examination) and officer In-charge are responsible for smooth and transparent conduct of all examinations.

During the Orientation/Induction Program, newly admitted students are briefed about the continuous assessment guidelines, marking scheme, and evaluation procedures.

- **Objectives of Internal Assessment:**
- Continuous Evaluation – To assess student performance regularly throughout the semester rather than only at the end.
- Identify Learning Gaps – To diagnose students' strengths and weaknesses at an early stage and provide scope for improvement.
- Promote Active Learning – To encourage students to consistently engage with the subject through assignments, projects, seminars, and presentations.
- Develop Critical Skills – To evaluate not only theoretical knowledge but also problem-solving, analytical, communication, and practical skills.
- Accountability – To make students responsible for their own learning through continuous monitoring.

Component	Frequency	Details	Weightage
CA-1	1	Test / **Assignment** / Quiz based on **Unit 1 & Unit 2**	**10 Marks**
Mid Semester Examination	1 per semester	Written examination covering **Unit 1 & Unit 2** (Descriptive and Numerical questions)	**20 Marks**
CA-2	1	Test/Seminar (PPT)/**Assignment /** Activity based on **Unit 3, 4 & 5**	**10 Marks**
Total			**40 Marks**

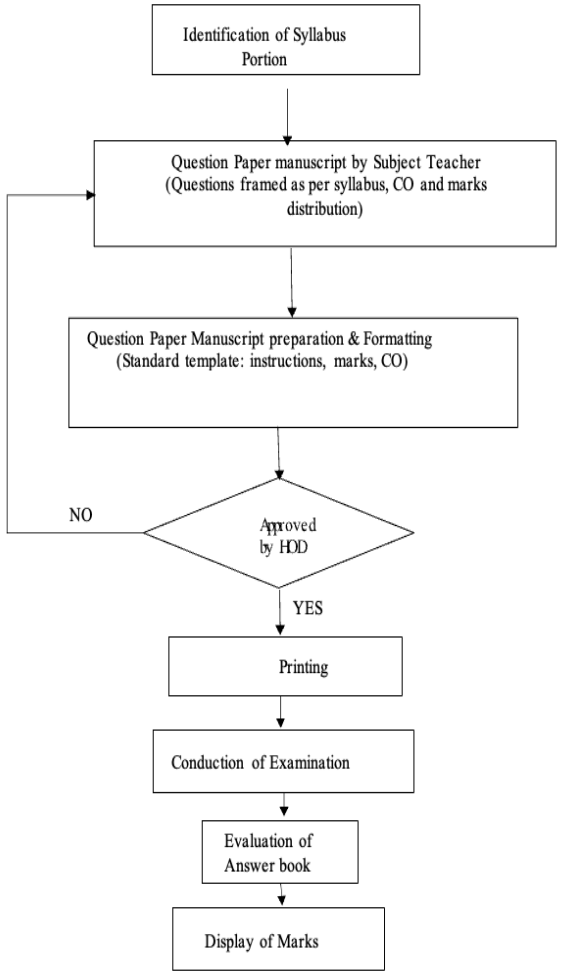
Internal Assessment Structure

1. **Mid Semester Examination:b**Covers Unit 1 & Unit 2, Weightage: 20 Marks
2. **Process of Preparing Mid Semester Examination Question paper:**
    - Identification of Syllabus Portion
    - The subject teacher prepares the question paper as per the given examination guidelines by exam cell.
    - Preparation of Question paper manuscript.
    - The concerned faculty prepare manuscript of question paper based on the syllabus.
    - Paper Typing & Formatting

    The manuscript is prepared using the standard institution template, including proper formatting. This covers general instructions and mark distribution.

- **Approval of HOD**: The Head of Department reviews the manuscript for correctness, coverage of syllabus, quality of questions, mapping of COs and compliance with the guidelines. Approval is granted after required modifications if any.
- **Printing**: The approved question paper is confidentially printed in the required number of copies. It is then packed and stored securely to maintain exam confidentiality until the scheduled date.
- **Conduction of Examination**: The examination is conducted as per the time table under proper invigilation. Standard procedures are followed to ensure fairness, discipline, and transparency.

Flow Diagram: of Mid Semester Examination



1.**Assignment Evaluation Process for CA1 and CA2 (20 Marks)**

1. Assignment Design

- Faculty prepares assignments aligned with **Course Outcomes (COs)**.
- Questions are designed to assess different cognitive levels such as: Knowledge, Understanding, Application, Analysis

2. Assignment Announcement

- Assignments are communicated through: WhatsApp, Classroom announcement
- Submission deadline is clearly specified.
- Students are required to submit assignments within the stipulated time.

- Submission is done in **hard copy format**.

3. Evaluation Criteria (Rubrics)

Assignments are evaluated based on predefined rubrics:

- Understanding of concepts
- Accuracy of content / solution
- Timely submission

4. Assessment

- Faculty evaluates assignments using a structured **marking scheme/rubric**.
- Constructive feedback is provided to students for improvement.
- Evaluated assignments are returned to students.

5. Record of Submission: Proper record of submitted assignments is maintained by the faculty for documentation and verification.

6. Review & Improvement

- Students discuss feedback with faculty to clarify doubts.
- Faculty reviews the effectiveness of assignments.
- Necessary modifications are made in future assignments to improve learning outcomes.

1.Mid Semester **Evaluation Process (20 Marks)**

1.Assessment

- Faculty evaluates answer scripts according to the approved marking scheme.
- Marks are awarded fairly and consistently based on the expected answers.
- Constructive feedback is provided to students wherever required.
- Evaluated answer books are shown to students for transparency and discussion.

2. Record of Examination

- Proper records of attendance and marks obtained in the Mid-Sem examination are maintained by the faculty.
- Marks are entered in the departmental examination record/ERP for documentation and verification.
- Evaluated answer scripts are preserved as per institutional norms.

2.Review & Improvement

- Students discuss their performance and clarify doubts with the faculty.
- Faculty analyzes students performance with respect to Course Outcomes (COs).

3.2 Evaluation of the Semester End Exam (SEE) Question Paper (10)

The End Semester Examination (ESE) is conducted strictly as per the guidelines of Dr. Babasaheb Ambedkar Technological University (DBATU), to which the institute is affiliated.

Faculty members are nominated as paper setters, who prepare the question papers in accordance with the prescribed syllabus, academic regulations, and examination guidelines of the university. The question papers are designed to ensure appropriate coverage of all units the defined Course Outcomes (COs) and mapped with Program Outcomes (POs) and Program Specific Outcomes (PSOs).

A structured moderation process is carried out at the university level to ensure the quality, fairness, and validity of the question papers. This process verifies:

- Adequate syllabus coverage
- Appropriate difficulty level
- Clear and unambiguous questions
- Proper alignment with COs and learning objectives

The evaluation of answer scripts is carried out as per university norms, ensuring transparency and consistency in marking. The assessment process focuses on evaluating students' understanding, analytical ability, and problem-solving skills.

All relevant documents such as question papers, CO mapping, scheme of marking, and result analysis are systematically maintained in the course files for academic audit and NBA accreditation purposes.

End Semester Examination Sample Question Paper:

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

Bachelor of Technology (Electrical Engineering) SEMESTER - 7 Summer 2025 (Supply.)

Course :Bachelor of Technology (Electrical Engineering) Branch : Engineering and Technology

Semester : SEMESTER - 7

Subject Code & Name: BTEEOE705B - ELECTRIC AND HYBRID ELECTRIC VEHICLES

Time : 3 Hours] **[Total Marks : 60**

Instructions to the Students:

1.Each question carries 12 marks.

2.Question No. 1 will be compulsory and include objective-type questions.

3.Candidates are required to attempt any four questions from Question No. 2 to Question No.6

4.Use of non-programmable scientific calculators is allowed.

5.Assume suitable data wherever necessary and mention it clearly.

Q1. Objective type questions. (Compulsory Question) 12

1 A hybrid vehicle combines any type of two power (energy) sources. Possible combinations include

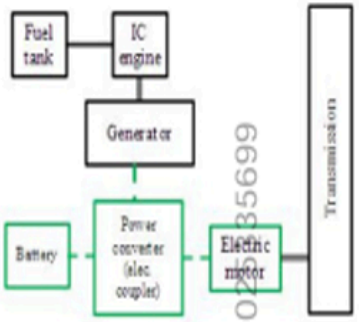
A)Diesel/ electric. B)gasoline/fly wheel.

C)fuel cell (FC)/battery. D)All Above.

2 When the vehicle moves, it encounters a resistive force that tries to retard its motion. The resistive forces area.

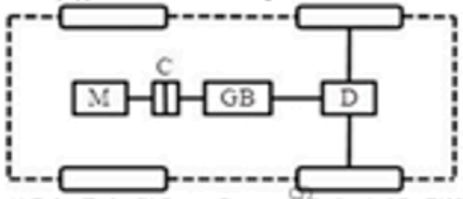
A) Rolling resistance. B)Aerodynamic drag. C)Uphill resistance. D) All Above.

3 The figure shown below indicates which of the following HEV configuration?



A)Series Hybrid B)Parellel Hybrid C)Combined Hybrid D)All Above

4 Identify type of Alternative configuration of EV based on



A) Drive Train. B) Power Source. C)Bothe A &B. D)None of Above

5 The fundamental requirement for traction _____ used in EVs is to generate propulsion torque over a wide speed range.
A)Gear Box. B)Motor C)Clutch D) All above

6 In a DC motor drive, which of the following techniques is most commonly used to control the speed of the motor?
A) Adjusting the frequency of the input supply. B)Changing the flux linkage.
C)Varying the voltage supplied to the armature. D)Using phase-angle control.

7 During regenerative braking, which component primarily converts kinetic energy into electrical energy?
A)Battery. B)Electric motor acting as a generator.
C)Power controller. D)Energy recovery circuit.

8 What is the primary byproduct of a hydrogen fuel cell during energy generation?
A)Carbon dioxide. B)Oxygen. C)Water. D)Nitrogen.

9 What is the main component that stores electrical energy in an electric vehicle?
A)Radiator. B)Battery pack. C)Carburetor. D)Exhaust pipe

10 Which type of battery is commonly used in modern electric vehicles due to its high energy density and efficiency?
A)Nickel Cadmium(NiCd). B)Lead-Acid. C)Lithium-Ion (Li-ion). D)Alkaline

11 In a pure electric vehicle, the primary focus of energy management strategies is on
A)Maximizing battery cycle life and range.
B)Improving thermal stability of the motor.
C)Reducing the weight of the battery pack.
D)Synchronizing multiple motors for higher efficiency.

12 In rule-based energy management strategies, decisions are typically based on:
A) Predefined conditions and simple logic rules.
B)Complex optimization algorithms.
C) Machine learning predictions.
D)Real-time fuel consumption monitoring

Q2. Solve the following.

A) Economic and Environmental Impact of Electric Hybrid Vehicle 6

B) Compare the performance of EV and HEV 6

Q3. Solve the following.

A)	Explain different power flow control in series HEVs with neat sketch	6
B)	Draw electric vehicle drive train configurations based on power source and brief it	6

Q4. Solve Any Two of the following.

A)	Describe the principal of operation induction motor with Mathematical treatment	6
B)	What is Switch Reluctance motor drives with advantages	6
C)	Explain the forward motoring and regenerative (forward)Braking control of a dc motor with single chopped, Give Circuit diagram and Show quadrants of Operation	6

Q5. Solve Any Two of the following.

A)	Describe the phenomenon of state of Charge and Depth of Charge	6
B)	What are the different novel alternative energy sources may be used in electric vehicle	6
C)	Mathematical Modeling of Lead acid Battery	6

Q6. Solve Any Two of the following.

A)	Describe the function of Control system in HEVs and EVs and elements of control theory	6
B)	Show the core components of the fuzzy logic controller and the input and output relevant to HEVs	6
C)	Explain typical control architecture of HEV for The Electronic Control Unit(ECU)	6

End

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3.3 Evaluation of Laboratory Work and Workshop (Continuous and SEE) (10)

1. Internal Continuous Assessment (CA)

Purpose of Laboratory Evaluation The evaluation process in laboratories ensures that students not only perform experiments but also understand underlying concepts, develop problem-solving skills, and apply theoretical knowledge in It aims to:

a. Assess students' ability to conduct experiments with accuracy and safety.
b. Evaluate understanding of experimental principles and procedures.
c. Encourage teamwork, discipline, and effective documentation.
d. Test analytical thinking through viva and interpretation of results.
e. Ensure continuous learning through maintenance of laboratory files.

- **Methodology:**

a. Experiment/Practical Performance: Students perform experiments as per the syllabus under faculty supervision, demonstrating procedural understanding and application of theoretical concepts.
b. Laboratory Records: Evaluation of timely and accurate documentation of experiments, observations, and results in the laboratory journal.
c. Viva-Voce during Practical Sessions: Short oral examinations to assess conceptual clarity and understanding of experiment objectives.
d. Attendance and Participation: Regularity and active participation in laboratory sessions.

CO–PO Mapping:

Laboratory tasks are directly mapped to relevant COs and linked to appropriate POs/PSOs.

Internal evaluation is carried out through a written test, performance assessment, and viva voce at the end of the course, as per DBATU guidelines. The laboratory record is evaluated on the same day of completing each experiment assessment parameters for the evaluation:

Internal evaluation Assessment Parameters:

Parameter	**Weightage (%)**	**40**	**60**
Laboratory Journal/Records	25	10	15
Written Test/Performance	25	10	15
Attendance	25	10	15
Viva-Voce	25	10	15
Total	100	40	60

2. **End Semester Examination (ESE**)

The ESE for laboratories is conducted as per Dr. Babasaheb Ambedkar Technological University (DBATU) guidelines to assess comprehensive practical skills acquired during the semester.

Procedure:

a. Exam Duration: Typically, 2–3 hours for each practical subject.
b. Execution and Demonstration: Students are evaluated on their ability to set up, conduct, and obtain results independently.
c. Final Viva-Voce: Conducted jointly by internal and external examiners to assess theoretical knowledge, practical skills, and interpretation of results.

ESE Assessment Parameters:

Parameter	Internal	External	40
Performance/Written Examination/ Viva-Voce	20	20	40
Total			**40**

3.4 Evaluation of Industrial Training/ Internship (Continuous and SEE) (10)

The following procedure is adopted by the institute for evaluation of Industrial internship:

1. **Notification**
    a. The Department displays a notice for sixth-semester students regarding internship opportunities.
    b. The notice contains the procedure for applying to industries and requirements for report submission.
2. **Industry Selection & Application**

a. Students collect an official letter from the Training & Placement Office (T&P).

b. Using this letter, they apply for internships in nearby industries related to Electrical Engineering.

3. **Industry Tie-ups**
    a. The Institute maintains MoUs and strong relations with local industries to support students in getting internships.
4. **Internship Duration**
    a. Each student undergoes industrial training as per university guidelines.
5. **Report Submission**
    a. At the start of next academic year, every student must submit an Internship Report documenting their training, learnings, and exposure.
6. **Presentation & Evaluation**

a. The Department organizes internship presentations.

b. Students present their industrial training experience before a panel of faculty evaluators.

Evaluation of Internship (50 Marks – Semester VII)

Criteria	**Description**	**Weightage (%)**
Report Quality	Clarity, depth of industrial processes explained, technical Content, formatting, and originality of the report.	40%
Presentation Performance& Learning	Communication skills, use of visuals, explanation of work done, and confidence in answering questions. Understanding of industrial practices, application of electrical engineering concepts, overall exposure, and discipline during Internship.	40%
Question-Answers	Ability to answer questions related to internship, technical Concepts, and observations.	20%

Total		**100%**

Training Evaluation Rubric:

Criteria	Weightage	Excellent (Full Weightage)	Good (75% Weightage)	Average (50% Weightage)	Poor (25% or less Weightage)
Internship Report Quality	40%	Report is well-structured, technically sound, with detailed process explanation, neat formatting, and originality.	Report covers most processes, technically correct, minor formatting errors.	Report has limited technical details, lacks clarity, some copied content.	Incomplete/poorly written report, little or no technical understanding shown.
Presentation Skills, Performance & Learning from Industry	40%	Clear, confident delivery; good use of visuals/diagrams; explains concepts well; answers questions convincingly. Demonstrates deep understanding of industrial practices and relates theory to practice.	Good presentation, clear voice, minor issues in visuals or explanation. Shows good understanding of industry practices.	Presentation lacks flow, limited visuals, and difficulty in explaining concepts. Limited understanding of processes.	Poor delivery, unprepared, unable to explain work done. No evidence of learning.
Viva / Q&A	20%	Answers all questions correctly, demonstrates strong technical knowledge and observation skills.	Answers most questions with reasonable accuracy.	Struggles to answer questions, shows partial understanding .	Unable to answer questions, no clarity of concepts.

Internship (2024 -25)

Sr. No	Name of the Student	Name of the Company	Skill Gained	Relevance to POs and PSOs

1	Shweta Gadhave ME21002 Harsh Marghade ME21007 Aarju Meshram ME21010	Jayaswal Neco Industries Ltd (JNL)	The industrial internship provided practical exposure to casting processes, connecting classroom concepts with real-world applications. It enhanced the student's problem-solving skills and knowledge of maintenance procedures and safety practices. The student also gained understanding of waste-material utilization, professional engineering norms, teamwork, and communication skills.	PO1, PO2, PO5, PO6, PO7, PO8, PO9, PO10, PO12, PSO1, PSO2

3.5 Evaluation of Projects (20)

The final year project are evaluated in two steps:

1. Project phase-I (7th)
2. Project Phase-II (8th)

1. Project phase-I : 7th Semester Evaluation Project Phase-I

(100 Marks = Internal evaluation- 60 Marks + External evaluation-40 Marks)

A. **Internal Evaluation (60 Marks)**

- **Stage 1: Project Presentation (First Seminar-** Project Synopsis Presentation**)**
- Purpose: To assess the initial project idea, literature review, and problem statement.
- Criteria: Content :
    - Review of literature and identification of research gap.
    - Problem statement and objectives.
    - Feasibility of proposed work.
    - Presentation
    - Quality of slides
    - Communication skills, flow, time management.

This stage ensures that students have chosen a relevant project, studied background literature, and prepared a roadmap before execution.

- **Stage 2: Project Presentation (Second Seminar-** Mid Review / Progress Seminar)

Purpose: To evaluate progress and check if the group has implemented feedback from the first seminar.

- Criteria: Content Improvement:
    - Incorporation of suggestions given in the 1st seminar.
    - Refinement of problem statement, methodology, and objectives.
- Technical Work Progress:
    - Preliminary design, analysis, or data collection.
    - Initial results and feasibility checks.
- Presentation:
    - Presentation of work.
    - Confidence in explaining technical aspects.
    - Balanced participation of all group members.

At this stage, students should show concrete progress in the project, not just theoretical study.

Stage 3: Project Presentation (Seminar 3: Project Guide Evaluation)

- Purpose: To assess individual contribution and technical growth throughout the semester.
- Criteria: Regularity and Attendance :
    - Consistent interaction with the guide.
    - Active participation during allocated timetable slots.
- Initiative and Effort :
    - Independent work, problem-solving attitude.

- Willingness to learn and explore beyond syllabus.

- Technical Knowledge and Problem-Solving :
  - Understanding of Engineering fundamentals.
  - Logical approach to challenges.
- Teamwork:
  - Cooperation among team members.
  - Timely submission of reports.

The guide's marks reflect continuous performance and sincerity of each student, not just final Outcomes.

Project Phase-I : Internal evaluation- 60 Marks

Parameter	Stage 1 (Seminar 1) 20 Marks	Stage2 (Seminar 2) 20 Marks
Regularity and Attendance	5	5
Initiative and Effort	5	5
Technical Knowledge and Problem-Solving	5	5
Teamwork	5	5
Total	**20**	**20**

B. External Evaluation (40 Marks)

Description about Final evaluation:

- purpose: External and unbiased assessment of student's knowledge, teamwork, and final Output.
- Criteria:
  - Problem Understanding & Objectives: Clarity of aim, scope, and expected outcomes.
  - Technical Content & Methodology: Soundness of design, analysis, or experimentation.
  - Implementation & Results: Practical results, model working, data analysis, graphs, conclusions.
  - Demonstration of Project Model: Functionality, safety, feasibility, and reliability.
  - Communication, Team Contribution & Viva:
    - Individual oral exam performance.
    - Ability to answer technical questions.

The university examiner evaluates both project and individual knowledge, ensuring fairness.

Project Phase-I : External evaluation-40 Marks

Parameter	Internal	External	End
Regularity and Attendance	5	-	

Initiative and Effort	5	-	
Technical Knowledge, Problem-Solving & Analysis	5	10	
Teamwork	5	10	
Total	**20**	**20**	

2. Project Phase-II : 8th Semester Evaluation (100 Marks)

A. **Internal Evaluation (60 Marks)**

- **Stage 1: Project Presentation (First Seminar)**
  - Purpose: To check the progress achieved after 7th semester and ensure the group is on track.
  - Criteria: Progress after 7th Semester:
    - Completion of design stage, problem analysis, or fabrication plan.
    - Documented research / simulation work/ expected results.
  - Technical Depth:
    - Application of theory into design/analysis.
    - Relevance of tools/software/methodology.
  - Presentation Skills:
    - Technical/Logical presentation of results achieved so far.
    - Handling of Q&A effectively.

Students must show substantial development from their preliminary investigations.

- **Stage 2: Project Presentation (Second Seminar)**
  - Purpose: To evaluate final stage of project work, model demonstration, and incorporation of feedback.
  - Criteria:
  - Incorporation of Suggestions:
    - Modifications done after first seminar.
    - Improvement in design, process, or analysis.
- Demonstration & Presentation:
  - Working demonstration of the model.
  - Clear documentation of results and conclusions.
- Implementation:
  - Prototype/model completed and functioning.
  - Testing and validation of results.

This stage shows how well students have translated theory into practice and addressed practical challenges.

- **Stage 3: Project Presentation (Project Guide Evaluation)**

- Purpose: To evaluate overall individual growth and final contribution.
- Criteria:

- Consistency of Work: Regularity throughout both semesters.
- Innovation & Creativity: Novelty of project idea and solution.
- Technical Competence: Ability to apply engineering principles effectively.
- Effort & Involvement: Personal contribution in design, fabrication, and report.
- Documentation: Quality of written report and formatting.

This ensures recognition of both hard work and innovation, not just final output.

Project Phase-II :Internal Evaluation (60 Marks)

Parameter	Stage 1 (Seminar 1) 20 Marks	Stage2 (Seminar 2) 20 Marks
Regularity and Attendance	5	5
Initiative and Effort	5	5
Technical Knowledge and Problem-Solving	5	5
Teamwork	5	5
Total	**20**	**20**

B. External Evaluation (40 Marks)

Description about Final evaluation:

- purpose: External and unbiased assessment of student's knowledge, teamwork, and final Output.
- Criteria:
  - Problem Understanding & Objectives: Clarity of aim, scope, and expected outcomes.
  - Technical Content & Methodology: Soundness of design, analysis, or experimentation.
  - Implementation & Results: Practical results, model working, data analysis, graphs, conclusions.
  - Demonstration of Project Model: Functionality, safety, feasibility, and reliability.
  - Communication, Team Contribution & Viva:
    - Individual oral exam performance.
    - Ability to answer technical questions.

The university examiner evaluates both project and individual knowledge, ensuring fairness .

Project Phase-II : External Evaluation (40 Marks)

Parameter	Internal	External	End
Regularity and Attendance	5	-	
Initiative and Effort	5	-	

Technical Knowledge, Problem-Solving & Analysis	5	10	
Teamwork	5	10	
Total	**20**	**20**	

Summary of Weightage

Course Name	Course Code	Semester	Mode of Evaluation	Components	Marks
Project Phase -I	BTEEP710	7th	Internal	Seminar-1 (20M) + Semimar-2 (20M) + Guide (20M)	60
Project Phase -I	BTEEP710	7th	External	External Examiner(20M) + Internal Examiner(20M)	40
Total					**100**
Project Phase-II	BTEEP803	8th	Internal	Seminar-1 (20M) + Semimar-2 (20M) + Guide (20M)	60
Project Phase-II	BTEEP803	8th	External (University)	External Examiner(20M) + Internal Examiner(20M)	40
Total					**100**

Project Evaluation Rubric

Performance Levels

- Excellent (4) = Outstanding performance, exceeds expectations
    - Good (3) = Above average, meets expectations well
    - Average (2) = Satisfactory, but improvements needed
    - Poor (1) = Below expectations, lacks preparation/effort

7th Semester (60 Marks – Department)

Criteria	Sub-Criteria	Weight	Excellent (Full Marks)	Good (75% Marks)	Average (50% Marks)	Poor (25% or less)
First Seminar (20 Marks)	Content	10	Problem well-defined, strong literature review, feasible objectives	Clear problem with some gaps	Problem vague, weak review	No clarity, copied content
	Presentation	5	Highly structured, confident, effective visuals	Clear presentation with minor flaws	Some clarity, weak flow	Disorganized, hard to follow
	Team Contribution	5	Equal participation, answers confidently	Most members contribute	Few members active	Single member dominates

Second Seminar (20 Marks)	Content Improvement	10	Fully implemented suggestions	Mostly implemented	Partially implemented	No improvements
	Technical Progress	5	Strong design/prototype evidence	Moderate progress	Basic progress	Minimal progress
	Presentation	5	Professional, engaging, confident	Clear, minor issues	Limited clarity	Poorly delivered
Guide Evaluation (20 Marks)	Regularity	5	Always regular, active	Mostly regular	Irregular	Rarely present
	Initiative	5	Independent, proactive	Usually takes effort	Needs prompting	Passive
	Technical Knowledge	5	Excellent understanding, problem-solving	Good knowledge	Limited understanding	Very poor
	Teamwork & Discipline	5	Strong collaboration, responsible	Cooperative, minor issues	Some conflicts	Poor teamwork

8th Semester – Department (60 Marks)

Criteria	**Sub-Criteria**	**Weight**	**Excellent (Full Marks)**	**Good (75% Marks)**	**Average (50% Marks)**	**Poor (25% or less)**
First Seminar (20 Marks)	Content	10	Problem well-defined, strong literature review, feasible objectives	Clear problem with some gaps	Problem vague, weak review	No clarity, copied content
	Presentation	5	Highly structured, confident, effective visuals	Clear presentation with minor flaws	Some clarity, weak flow	Disorganized, hard to follow
	Team Contribution	5	Equal participation, answers confidently	Most members contribute	Few members active	Single member dominates
Second Seminar (20 Marks)	Content Improvement	10	Fully implemented suggestions	Mostly implemented	Partially implemented	No improvements
	Technical Progress	5	Strong design/prototype evidence	Moderate progress	Basic progress	Minimal progress
	Presentation	5	Professional, engaging, confident	Clear, minor issues	Limited clarity	Poorly delivered

Guide Evaluation (20 Marks)	Regularity	5	Always regular, active	Mostly regular	Irregular	Rarely present
	Initiative	5	Independent, proactive	Usually takes effort	Needs prompting	Passive
	Technical Knowledge	5	Excellent understanding, problem-solving	Good knowledge	Limited understanding	Very poor
	Teamwork & Discipline	5	Strong collaboration, responsible	Cooperative, minor issues	Some conflicts	Poor teamwork

Academic Year: (2024-25)

Name of the Students	**Project Title**	**Areas of Specialization**	**Project Supervisor**	**Contribution/ Achievements / Research Output**	**Matching with the stated POs, PSOs**	**Matching with the Blooms taxonomy levels**
Pradip Nitin Dhobi Ritesh kishor bavaskar Pooja sahebrao Hiray	Automatic Power Factor Controller using Arduino	Internet of Things (IoT) and Power Systems	Prof. Mahesh H. Patil	Designed a real-time reactive power compensation unit. Achieved auto-switching of capacitor banks, improving lagging power factor	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2	BT4, BT5, BT6
Gayatri subhash kale Mhaske Shubhangi Kailas Trupti Ananda Bavaskar	Home Automation Using Wifi.	Internet of Things (IoT) and Embedded Systems	Dr. Atul A. Barhate	Fabricated a smart relay node matrix integrated with a web interface. Allowed remote load toggling and optimized standby power drainage across home appliances.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2	BT4, BT5, BT6

Rashmi Ramesh Kothoke Ashwini Tukaram Bhavsar Sudhir Anil Chaudhari	Developme nt Of Single Phase Inverter	Power Electronics & Drives	Prof. Sachin R. Maheshri	Designed and tested a 1kVA pure sine wave inverter using SPWM signaling. Successfully reduced Total Harmonic Distortion (THD) to under 4.5% for inductive loads.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2	BT4, BT5, BT6
Shubham Gopal Patil Nikita Sartale Pavan Sopan Patil	Litreture Review on Prototyping with Arduino	Embedded Systems, Microcontroll ers	Prof. Amit V. Mhaskar	Developed a general-purpose automated industrial timer and relay trip switch configuration using microcontrollers to protect standard single-phase machinery.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2	BT4, BT5, BT6
Manish Kashimanth Patil Sumedh Kailas Tayde Shubham Ravindra Chavan	Ac Induction Motor Speed Controlling using Smart Phone	Power Electronics & Electrical Drives and Control Systems	Prof. Nemichand K. Saini	Implemented a v/f (voltage/frequency) speed control topology using a microcontroller-driven inverter. Enhanced operational efficiency over a 30% to 100% wide speed range.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2	BT4, BT5, BT6

Yash Prakash Chudhari Sumit Namdev Wagh Mohit Bhsakar Chaudhari	Solar power grid status monitoring and alerting with Android smart phone technology.	Renewable Energy and Smart Grid	Prof. Sachin R. Maheshri	Engineered a remote telemetry system utilizing a Wi-Fi module to stream voltage, current, and irradiance metrics to a cloud API and custom Android client application.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2	BT4, BT5, BT6
Sejal Rajendra Bharambe Vedant Nitin Rane Sachin Kishor Patil	Solar based Audio systems	Renewable Energy	Prof. Harish A. Patil	Fabricated an eco-friendly standalone audio amplifier run strictly on decentralized solar PV roof modules. Deployed zero-grid energy operations for classroom public address.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2	BT4, BT5, BT6
Wani Pranjal Pravin Patil Vivek Bapurao Patil Kundan Sunil	Battery-Management System (BMS) and SOC Development for Electrical Vehicles	Electric Vehicles (EV) and Energy Storage Systems	Prof. Mahesh H. Patil	Developed a real-time Coulomb-counting algorithm coupled with an active cell-balancing matrix. Optimized State of Charge (SOC) estimation accuracy down to margin.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2	BT4, BT5, BT6

Academic Year (2023-24)

Name of the Students	Project Title	Areas of Specialization	Project Supervisor	Contribution/ Achievements / Research Output	Matching with the stated POs, PSOs	Matching with the Blooms taxonomy levels
Deshmukh Ganesh Rajendra Dhondge Mansi Shashikant Badgujar Nisha Arun Patil Monali Ravindra	Solar Inverter	Power Electronics and Renewable Energy	Prof. Mahesh H. Patil	Studied the design, operation, efficiency, charging/discharging characteristics, and applications of solar batteries and inverters in photovoltaic systems.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2	BT4 BT5 BT6
Chaudhari Sagar Totaram Mahale Rupesh Pramod Johare Ashutosh Deepak Patil Amol Pradip	3KW Solar rooftop system for air conditioner	Renewable Energy	Prof. Mahesh H. Patil	Designed and analyzed a 3 kW solar photovoltaic system suitable for operating an air conditioner, including sizing of PV panels, inverter, and battery bank.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2	BT4 BT5 BT6

Dhobi Sanket Arvind Bhupendra Rama Chaudhari Bhamare Manish Rajendra Bhoi Raju Ramdas	Two wheeler Ev charger study for India	Emerging Technology (Electric Vehicles)	Prof. Mahesh H. Patil	Conducted a comparative study of EV charging standards, charging infrastructure, charging methods, and future prospects for two-wheelers in India.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2	BT4 BT5 BT6
Borole Paresh Kiran Patil Mahesh Bharat Zope Ketan Sunil Patil Keval Ramesh	Multicolour Scrolling LED display	Embedded Systems and Digital Electronics	Prof. Harish A. Patil	Developed a programmable multicolour scrolling LED display using a microcontroller for displaying text and graphics.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2	BT4 BT5 BT6
Sambare Rushikesh Bhagwat Fegade Tejas Anil Chaudhari Aniket Rajendra Divse Keshav Arun Thakare Akshay Gajanan	Mark Management System for GFGCOE, Jalgaon	Software Engineering and Database Management Systems	Prof. Atul A. Barhate	Developed a computerized mark management system for storing, processing, and generating student academic records and reports.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2	BT4 BT5 BT6

Patil Monal Anil Patil Jayshri Purushottam Mahajan Sayali Nivrutti Patil Devendra Hemraj	Four wheeler EV batteries study project.	Emerging Technology (Electric Vehicles)	Prof. Sachin R. Maheshri	Studied various EV battery technologies, battery management systems (BMS), charging methods, safety aspects, and performance comparison.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2	BT4 BT5 BT6
Chaudhari Vaibhav Ravindra Patil Dhiraj Prabhakar Tayade Vaibhav Bhaskar Narkhede Ritesh Vitthal	DRONE Technology	Embedded Systems	Prof. Sachin R. Maheshri	Studied drone architecture, flight control systems, communication protocols, sensors, and applications in surveillance, agriculture, and mapping.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2	BT4 BT5 BT6
Chaudhari Vaishnav Suresh Jayesh Ajay Ambekar Patil Tirtharaj Kishor Sarode Saurabh Nitin	Smart Defender	Internet of Things (IoT) and Embedded Systems	Prof. Harish A. Patil	Developed a smart security device for monitoring and protecting premises using sensors, alarms, and wireless communication.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2	BT4 BT5 BT6

Thorat Manish Sanjay Patil Hitesh Balu Patil Mohan Ishwar Nemade Shubham Manoj	Home automation	Internet of Things (IoT) and Home Automation	Prof Nemichand Saini	Developed a home automation system for controlling electrical appliances through mobile application or voice commands.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2	BT4 BT5 BT6
Dhangar Saurabh R. Patil Swapnil Sunil Salunkhe Prashant Rajendra Patil Mayur Sanjay	Solar Air Conditioner Inverter	Renewable Energy & Power Electronics	Prof. Nemichand Saini	Studied the design and operation of inverter systems used for solar-powered air conditioners with emphasis on energy efficiency.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2	BT4 BT5 BT6
Pawara Kapil Devsing Shubham Rajesh Nagla Vivek Bhushan Sangole Deshpande Hrishikesh Vijay Patil Nilesh Dinakar	Solar Air Conditioner	Renewable Energy	Prof. Amit V. Mhaskar	Studied the working principle, design considerations, energy savings, and performance analysis of solar-powered air conditioning systems.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2	BT4 BT5 BT6

Academic Year (2022-23)

Name of the Students	Project Title	Areas of Specialization	Project Supervisor	Contribution/ Achievements / Research Output	Matching with the stated POs, PSOs	Matching with the Blooms taxonomy levels
Mahajan Mayur Suresh Kapdane Gayatri Pralhad Dhande Bhushan Tukaram Sonawane Sarika Prakash	Energy monitoring system through website	Internet of Things (IoT)	Prof. Shubhangi Tayade	Developed a mobile application for monitoring departmental energy consumption with real-time data visualization and reporting.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12 PSO1, PSO2	BT4 BT5 BT6
Mahajan Gaurav Prakash Kumbhar Akshay Arjun Shirsale Dnyaneshwar Bhagwat More Vishal Santosh	Smart Energy Meter by Using IoT	Internet of Things (IoT)	Prof. Sachin R. Maheshri	Designed an IoT-enabled smart energy meter for remote monitoring and energy consumption analysis.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12 PSO1, PSO2	BT4 BT5 BT6

Narendra Yograj Mahajan Paurnima Prabhakar Sabale Harshal Sunil Pardeshi Shashikant Digambar Yevale	Automatic Curtain Mover	Embedded Systems and Automation	Prof. Atul A. Barhate	Developed an automatic curtain control system using sensors and microcontroller	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12 PSO1, PSO2	BT4 BT5 BT6
Patil Vivek Kailas Patil Dhanashri Sunil Satpute Harshada Bhumeshwar	Student Record Management System for department	Software Development, Database Management	Prof. Shubhangi Tayade	Developed ERP software for efficient student record management and monitoring.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12 PSO1, PSO2	BT4 BT5 BT6
Sarode Rahul Dipak Maheshri Rahul Chandrabhan Patil Sujit Anil Bari Vaibhav Pandurang	Door Lock open using Fingerprint sensor	Embedded Systems and Biometric Security	Prof. Sachin R. Maheshri	Designed a biometric access control system using fingerprint authentication for enhanced security.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12 PSO1, PSO2	BT4 BT5 BT6

Bhopale Tejas Pravin Patil Kiran Laxman Mahajan Jeevan Nivrutti Rathod Savita Shahaji Patil Komal Prakash	LORA Based automatic water level controller	Internet of Things (IoT) and Automation	Prof. Atul A. Barhate	Developed a LoRa-based wireless water level monitoring and automatic pump control system.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12 PSO1, PSO2	BT4 BT5 BT6
Chaudhari Tejas Rajendra Shinde Pankaj Sanjay Katole Rohit Dnyaneshwar Patil Bhushan Sudhakar Patil Hrishikesh Prakash	Solar base mobile fast charging point at GCOE campus	Renewable Energy, Power Electronics	Prof. Mahesh H. Patil	Designed and developed a solar-powered mobile charging station; promoted green energy utilization on campus; prototype successfully demonstrated.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12 PSO1, PSO2	BT4 BT5 BT6

Patil Harshal Raju Umale Shubham Baliram Patil Kalpana Bhika Patil Rushikesh Shamsing Chaudhari Amol Shantaram	Home Automation using Amazon ALEXA	Internet of Things (IoT) and Home Automation	Prof. Mahesh H. Patil	Developed a voice-controlled home automation system using Amazon Alexa and IoT devices; demonstrated remote monitoring and control.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12 PSO1, PSO2	BT4 BT5 BT6
Bharat Devidas Rathod Patil Pravin Anil Rathod Raju Madhukar Gaykwad Rahul Santosh	Solar power monitoring system using Microcontroller	Renewable Energy, Embedded Systems	Prof. Atul A. Barhate	Developed a real-time solar parameter monitoring system using sensors and microcontroller; displayed voltage, current, and power data.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12 PSO1, PSO2	BT4 BT5 BT6
Chaudhari Sarvesh Rajendra Falak Devayani Vishnu Sartale Rudresh Pradip Dandekar Gaurav Yuvraj	Smart Agriculture security pole	Internet of Things (IoT) and Smart Agriculture	Prof. Harish A. Patil	Designed an IoT-based agriculture security system with intrusion detection and automatic alert mechanism for crop protection.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12 PSO1, PSO2	BT4 BT5 BT6

3.6 Evidence of Addressing Sustainable Development Goals (SDG) (10)

The Electrical Engineering Department is committed to contribute towards the achievement of the United Nations Sustainable Development Goals (SDGs) through education, research, innovation, and social outreach activities. Electrical Engineers play a vital role in technologies, optimizing energy use, and designing systems that reduce environmental impact.

The department integrates sustainability principles into its curriculum design, laboratory practices, student projects, and community engagement activities. Through this approach, students are encouraged to apply engineering knowledge for solving real-life problems conservation, waste reduction, clean technology development, and sustainable industrial practices.

In alignment with the vision of Outcome-Based Education (OBE) and accreditation standards of the National Board of Accreditation, the Department of Electrical Engineering actively promotes collaborative research and project-based learning among faculty and st global challenges. The department focuses on thrust areas such as renewable energy generation, climate resilience, smart and efficient manufacturing systems, and eco-friendly production technologies. These initiatives are strategically mapped with the United Nations S Goals (SDGs), which were established in 2015 as part of the 2030 Agenda for Sustainable Development. Through interdisciplinary innovation, industry interaction, and sustainable engineering practices, the department ensures that graduates are not only technically com responsible contributors towards sustainable global development.

- **Here are the SDGs with Electrical Engineering:**

1. **No Poverty** – Rural electrification to create employment opportunities and support economic development.
2. **Zero Hunger** – Use of electric pumps, smart irrigation systems, and automation in agriculture.
3. **Good Health and Well-being** – Reliable power supply for hospitals and development of medical equipment (ECG, MRI, ventilators).
4. **Quality Education** – Providing electricity and ICT infrastructure for digital and remote learning.
5. **Gender Equality** – Development of smart lighting and safety systems to enhance women's safety and access to technology.
6. **Clean Water and Sanitation** – Automation of water treatment plants and pumping systems.
7. **Affordable and Clean Energy** – Development of solar, wind energy systems, and smart grids *(core Electrical Engineering domain)* .
8. **Decent Work and Economic Growth** – Industrial automation and job creation through electrical technologies.
9. **Industry, Innovation, and Infrastructure** – Development of smart grids, IoT-based systems, and electrical infrastructure.
10. **Reduced Inequalities** – Electrification of rural and remote areas to ensure equal opportunities.
11. **Sustainable Cities and Communities** – Smart city solutions, EV charging stations, and energy-efficient systems.
12. **Responsible Consumption and Production** – Energy auditing and efficient electrical system design.
13. **Climate Action** – Integration of renewable energy and reduction of carbon emissions.
14. **Life Below Water** – Use of sensors and monitoring systems for marine environment protection.
15. **Life on Land** – Environmental monitoring and technology for forest and biodiversity protection.
16. **Peace, Justice, and Strong Institutions** – Development of surveillance and secure communication systems.
17. **Partnerships for the Goals** – Industry-academia collaboration and research initiatives.

·Evidence of Addressing Sustainable Development Goals (SDGs) in Electrical Engineering Department

Sr. No.	SDG Goal	Evidence / Departmental Activities
1	SDG 4 – Quality Education Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.	• The institute is accredited by NAAC • Implementation of NEP 2020 from the academic session 2024–25. • Adoption of Outcome-Based Education (OBE) practices in teaching-learning processes. • Conduct of value-added courses, skill development programs, and technical workshops to enhance employability. • Strengthening industry–academia interaction through internships, expert lectures, and industrial visits.

2	SDG 7 – Affordable and Clean Energy Ensure access to affordable, reliable, sustainable, and modern energy for all.	• Student projects on energy-efficient HVAC systems, electric vehicles, and green energy technologies. • Establishment of Laboratories for hands-on training and innovation in power systems and renewable energy.
3	SDG 8 – Decent Work and Economic Growth Promote sustained, inclusive, and sustainable economic growth, full and productive employment, and decent work for all.	• Entrepreneurship development initiatives through incubation centers and student startups. • Skill development programs to enhance technical competency and employability of students.
4	SDG 9 – Industry, Innovation, and Infrastructure Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation.	• Active involvement of faculty and students in patents, research publications, and product development. • Promotion of innovation-driven research and participation in national-level technical competitions and projects.
5	SDG 11 – Sustainable Cities and Communities Make cities and human settlements inclusive, safe, resilient, and sustainable.	• Student projects on smart mobility solutions such as electric rickshaws, hybrid vehicles, and EV infrastructure. • Community-based projects including solar rooftop systems, and wind-powered solutions.
6	SDG 12 – Responsible Consumption and Production Ensure sustainable consumption and production patterns.	• Organization of awareness programs on energy conservation, recycling, and waste management. • Implementation of efficient material utilization practices in laboratories and workshops.
7	SDG 13 – Climate Action Take urgent action to combat climate change and its impacts.	• Installation of a 5KWp solar rooftop system to reduce carbon footprint and promote green energy usage. • Student and faculty projects focusing on emission reduction, carbon footprint analysis, and eco-friendly technologies.
8	SDG 17 – Partnerships for the Goals Strengthen the means of implementation and revitalize global partnerships for sustainable development.	• Collaborations with industries, research organizations, and government agencies for joint research and training. • Signing of MoUs with industrial sectors for internships, training programs, and industry-oriented problem-solving projects.

- **The program subjects are meeting SDG goal as follows.**

Subject Code	Subject Name	Relevant SDG(s)
BTBS101	Engineering Mathematics-I	SDG 4 (Quality Education)
BTBS102	Engineering Chemistry	SDG 6, 7, 12, 13
BTES103	Engineering Mechanics	SDG 9
BTES104	Computer Programming in C	SDG 4, 9
BTES105L	Workshop Practices	SDG 8, 9
BTBS107L	Engineering Chemistry Lab	SDG 6, 12, 13
BTES108L	Engineering Mechanics Lab	SDG 9
BTBS201	Engineering Mathematics-II	SDG 4
BTBS202	Engineering Physics	SDG 7, 9, 13
BTES203	Engineering Graphics	SDG 9, 11
BTHM204	Communication Skills	SDG 4, 17
BTES205	Energy and Environment Engineering	SDG 7, 11, 12, 13
BTBS207L	Engineering Physics Lab	SDG 7, 9

BTES208L	Engineering Graphics Lab	SDG 9
BTHM209L	Communication Skills Lab	SDG 4, 17
BTES210S	Seminar	SDG 4, 17
BTBS301	Engineering Mathematics-III	SDG 4
BTEEC302	Electrical Machines-I	SDG 7, 9
BTEEC303	Electrical and Electronics Measurement	SDG 7, 9, 12
BTES305	Engineering Material Science	SDG 9, 12, 13
BTEEL306	Electrical Machines-I Lab	SDG 7, 9
BTEEL307	Electrical and Electronics Measurement Lab	SDG 7, 9, 12
BTEEP308	Mini Project-I	SDG 9, 17
BTES211P	Internship-I Evaluation	SDG 8, 9, 17
BTEEC401	Network Theory	SDG 7, 9
BTEEC402	Power System	SDG 7, 9, 11
BTEEC403	Electrical Machine-II	SDG 7, 9
BTEEC404	Analog and Digital Electronics	SDG 3, 9, 11
BTEEPE405	Advance Renewable Energy Sources	SDG 7, 11, 13
BTEEL406	Network Theory Lab	SDG 7, 9
BTEEL407	Power System Lab	SDG 7, 9, 11
BTEEL408	Electrical Machine-II Lab	SDG 7, 9
BTEEL409	Analog and Digital Electronics Lab	SDG 3, 9
BTEEC501	Power System Analysis	SDG 7, 9, 11, 13
BTEEC502	Microprocessor and Microcontroller	SDG 9, 11
BTEEC503	Power Electronics	SDG 7, 9, 13
BTEEPLE504	Industrial Automation	SDG 8, 9
BTEEOE505	Electrical Safety	SDG 3, 8
BTEEL507	Power System Analysis Lab	SDG 7, 9
BTEEL508	Microprocessor and Microcontroller Lab	SDG 9, 11
BTEEL509	Power Electronics Lab	SDG 7, 13
BTEEPE510	Mini Project-II	SDG 7, 9, 17
BTEEP410	Internship-II Evaluation	SDG 8, 9, 17
BTEEC601	Switchgear and Protection	SDG 7, 9, 11
BTEEC602	Electrical Machine Design	SDG 7, 9, 12
BTEEC603	Control System Engineering	SDG 7, 9, 11
BTEEPE604	Flexible AC Transmission System	SDG 7, 9, 13
BTEEOE605	Power Plant Engineering	SDG 7, 9, 13
BTEEL606	Switchgear and Protection Lab	SDG 7, 9
BTEEL607	Electrical Machine Design Lab	SDG 7, 9
BTEEL608	Control System Engineering Lab	SDG 7, 9
BTEEM609	Seminar	SDG 4, 17

BTEEC701	High Voltage Engineering	SDG 7, 9
BTEEC702	Power System Operation & Control	SDG 7, 9, 11, 13
BTEEPE703	Electrical Utilization	SDG 7, 11, 12
BTEEOE704	Mechatronics	SDG 8, 9
BTEEOE705	Electric and Hybrid Electric Vehicles	SDG 7, 11, 13
BTEEL707	High Voltage Engineering Lab	SDG 7, 9
BTEEM708	In-house Project Part-I / Mini Project-III / Internship-III Evaluation	SDG 7, 8, 9, 17
BTEEP610	Internship-III Evaluation	SDG 8, 9, 17
BTEEPE801	NPTEL Online Courses	SDG 4, 17
BTEEP802	In-house Project Part-II / Internship in Industry	SDG 7, 8, 9, 17

Project carried out in the session 2024-25

Sr. No.	Project Title	Related SDGs	Link with SDG Goals
1	IoT Based Smart Power Factor Control	SDG7, SDG9, SDG12	Improves power factor, reduces energy losses, enhances energy efficiency, and supports sustainable industrial systems.
2	Home Automation Using Arduino Controller Wifi.	SDG7, SDG9, SDG11	Enables smart energy usage, reduces power consumption, promotes IoT-based learning, and supports sustainable living.
3	Development Of Single Phase Inverter	SDG7, SDG9	Converts DC to AC efficiently, supports renewable energy integration, and ensures reliable power supply.
4	Ardunio Controller For Practical Applications	SDG4, SDG9	Enhances technical skills, promotes innovation, and enables automation-based solutions for smart systems.
5	Ardunio Controller For Practical Applications	SDG7, SDG9, SDG12	Encourages project-based learning, supports embedded system development, and promotes interdisciplinary innovation.
6	Solar power grid status monitoring and alerting with Android smart phone technology.	SDG7, SDG9, SDG13	Enables real-time monitoring of solar systems, improves grid efficiency, and promotes smart renewable energy management.
7	Solar based Audio systems for announcement in classrooms	SDG7, SDG4, SDG13	Utilizes solar energy for communication systems, reduces electricity consumption, and supports sustainable campus infrastructure.

8	Battery-Management System (BMS) and SOC Development for Electrical Vehicles	SDG 7, SDG 9, SDG11, SDG13	Enhances EV performance, ensures battery safety, supports clean transportation, and reduces carbon emissions.

3.7 Attainment of Course Outcomes (25)

3.7.1. Describe the Assessment Tools and Processes Used to Gather the Data for the Evaluation of Course Outcome (5)

Course Outcome (CO) attainment at the Institute is measured entirely through Direct Assessment Tools, i.e., through measurable, evidence-based student performance rather than perception. Depending on the nature of the course — Theory, Laboratory, Industrial Training, more of the following direct assessment tools are used to generate CO-wise performance data:

- Internal Assessment (IA): Class Assessments (CA1, CA2) / Mid-Sessional Examinations
- Assignments and Activities
- Laboratory Experiments (Journal/Records, Written Test/Performance, Attendance, Viva-Voce)
- University (End-Semester) Examinations
- Industrial Internship / Training / Visits
- Project Phase-I
- Project Phase-II

Each of these tools is mapped to specific Course Outcomes at the question/component level, so that every CO is assessed by at least one internal and one university-level instrument, giving a balanced and verifiable basis for attainment computation.

Setting Target (Threshold) Levels

Before the semester begins, course-in-charge faculty set a Threshold (target) percentage of marks for each CO, based on the difficulty level of the course and historical performance. Student attainment is then benchmarked against this threshold using a three-level rubric, ap Internal Assessment and to the University (End-Semester) Examination, in view of their differing pass/rigor standards:

Rubric for Internal Assessment	Criterion
Level 1	Less than 60% of students scoring above the Threshold
Level 2	60% to 80% of students scoring above the Threshold
Level 3	More than 80% of students scoring above the Threshold

Rubric for End-Semester Assessment	Criterion
Level 1	Less than 50% of students scoring above the Threshold
Level 2	50% to 70% of students scoring above the Threshold
Level 3	More than 70% of students scoring above the Threshold

Data Collection

- CO-wise marks are recorded from the Mid-Semester Exam, CA1, CA2, Assignments, Activities, Laboratory records, and the University Examination for every student.
- Standardised rubrics are used for evaluating projects, presentations, and laboratory performance to ensure consistency of scoring across faculty and batches.

Data Analysis

- Direct Attainment is calculated from actual student performance measured against the pre-set target (threshold) levels described above.
- Overall CO Attainment is obtained as the weighted average of the direct attainment values from each contributing assessment component.

CO–PO Mapping

Every Course Outcome is mapped to the relevant Program Outcomes (POs) and Program Specific Outcomes (PSOs) at three correlation levels — Low (1), Medium (2), and High (3) — capturing the strength of contribution of that course toward each outcome. This mapping allows CO attainment data to be rolled up into PO/PSO attainment (Section 3.2).

Continuous Improvement Process

- Gaps between the targeted and achieved attainment levels are identified for every CO, every semester.
- Corrective actions are planned and executed based on the nature of the gap — e.g., focused workshops, seminars, expert/guest lectures, and project/paper competitions — and their effect is tracked in the following cycle.

Summary of Assessment Tools and Maximum Marks

The table below summarises the assessment instruments and their maximum marks across course types, exactly as prescribed by the Institutes evaluation scheme:

Sr. No.	Assessment Tools	Maximum Marks
1	Theory Course	100 (40 Internal + 60 University)
2	Laboratory Course	40 (20 Internal + 20 University)
3	Industrial Training	50
4	Project Phase-I	100 (60 Internal + 40 University)
5	Project Phase-II	100 (60 Internal + 40 University)

Pictorial Representation - CO Attainment Process

The process by which CO attainment is computed for a Theory course and for a Laboratory course is shown below. Note: the flow-chart shapes in the original file (built as a Word drawing canvas) were not visible in the exported layout — they have been faithfully reconstructe exact same weightages, labels and CO-coverage stated inside those shapes (Direct Attainment 100% split as External Assessment 60% + Internal Assessment 40% for Theory, verified against the Institutes evaluation scheme in the table above).

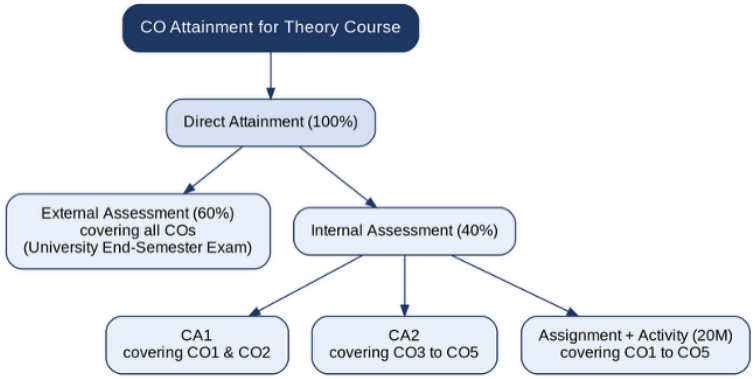


Fig. 3.1(a): Flow Chart of Course Outcome Attainment Process for Theory Courses

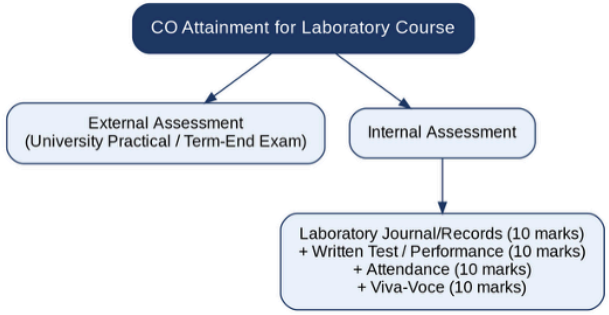


Fig. 3.1(b): Flow Chart of Course Outcome Attainment Process for Laboratory Courses

PO and PSO attainment is evaluated through a structured process that combines Direct Assessment (actual student performance, rolled up from CO attainment) and Indirect Assessment (stakeholder perception, gathered through surveys). The two are combined in a fixed 8(the Overall PO/PSO Attainment for every outcome, for every batch.

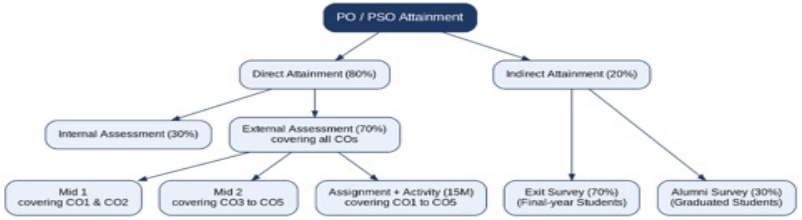


Fig. 3.2(a): Flow Chart of PO/PSO Attainment Computation using Direct and Indirect Assessment Tools

Assessment Tools Used

Assessment Type	Tools Used
Direct Assessment	Course Outcome (CO) attainment through Internal Assessment and End-Semester (University) Examinations
Indirect Assessment	Exit Survey (final-year students) and Alumni Survey (graduated students)

Direct PO/PSO Attainment

Direct PO/PSO attainment is built up from course-level data in four steps:

1. Each Course Outcome (CO) is mapped to the relevant Program Outcomes (POs) using a three-point correlation scale — 1 (Low), 2 (Medium), 3 (High).
2. CO attainment for each course is calculated from Internal Assessment (IA) and the End-Semester Examination (ESE), as described in Section 3.1.
3. Course-level PO attainment is obtained by combining the CO attainment values with the CO–PO correlation levels for that course.
4. Program-level Direct PO Attainment is the average of the course-level PO attainment values across all courses that map to that PO.

PO Attainment Rubric

Attainment Level	Description
3	Attained — 60% or more students scoring above the Threshold
2	Attained — 50% to 59% of students scoring above the Threshold
1	Attained — Less than 50% of students scoring above the Threshold

The target PO attainment level for each program is set based on the previous three years performance trend together with the difficulty level of the subjects contributing to that PO.

Indirect PO/PSO Attainment

Indirect PO/PSO attainment captures students and alumnis perception of how well the Program Outcomes have been achieved, as a complement to direct exam-based evidence. It is gathered using two survey instruments, combined in a fixed ratio:

Tool	Respondents	Weightage
Exit Survey	Final-year students	70%
Alumni Survey	Graduated students	30%

Respondents rate each PO-mapped survey question on a 3-point scale: 3 – Excellent, 2 – Good, 1 – Satisfactory. The resulting average score is converted into an attainment level using the rubric below:

Average Score (out of 3)	Attainment Level	Interpretation
≥ 2.5	Level 3 (High)	PO is Strongly Attained
2.0 – 2.49	Level 2 (Moderate)	PO is Moderately Attained
1.5 – 1.99	Level 1 (Poor)	PO is Low Attained
< 1.5	Level 0	PO is Not Attained

Attainment Calculation Formulae

Indirect Attainment (per PO):

- Exit Survey — Average Score for PO = (Sum of scores given by all respondents) ÷ (Number of respondents)
- Alumni Survey — PO Attainment (Alumni) = Average Score for that PO from alumni responses
- Final Indirect PO Attainment = 0.7 × PO Attainment (Exit Survey) + 0.3 × PO Attainment (Alumni Survey)

Overall Attainment (combining Direct and Indirect):

- Direct PO/PSO Attainment Weightage: 80%
- Indirect PO/PSO Attainment Weightage: 20%

Overall PO/PSO Attainment = 0.8 × Direct PO/PSO Attainment + 0.2 × Indirect PO/PSO Attainment

This overall value is computed independently for every PO and PSO, each academic year, and is trended over successive years to confirm that the program continues to meet or exceed its targeted attainment levels.

The Attainment for PO1 to PO 12 and PSO 1,2,3 has been calculated for the batch 2021-2025. But due to portal constrain the Values of PO1- PO6 and PO8- PO12 is entered in PO1 to PO11.

3.7.2 Record the Attainment of Course Outcomes of all Courses with Respect to Set Attainment Levels (20)

As per the process explained in section 3.7.1 the attainment of COs for each subject for the batch 2021-2025 is calculated. The average of all COs for the subject is recorded and given in the following table

Course code	NBA Course code	Course name	Co Attainm ent Value
BTBS101	C101	Engineering Mathematics- I	2.88
BTBS102	C102	Engineering Chemistry	3
BTES103	C103	Engineering Mechanics	3
BTES104	C104	Computer Programming in C	3
BTES105L	C105	Workshop Practices	3
BTBS107L	C106	Engineering Chemistry Lab	3
BTES108L	C107	Engineering Mechanics Lab	3
BTBS201	C108	Engineering Mathematics-II	1.26
BTBS202	C109	Engineering Physics	2.04
BTES203	C110	Engineering Graphics	2.12
BTHM204	C111	Communication Skills	1.12
BTES205	C112	Energy and Environment Engineering	2.84
BTBS207L	C113	Engineering Physics Lab	3
BTES208L	C114	Engineering Graphics Lab	3
BTHM209L	C115	Communication Skills Lab.	3
BTES210S	C116	Seminar	2.8

BTBS301	C201	Engineering Mathematics-III	1
BTEEC302	C202	Electrical Machines - I	1
BTEEC303	C203	Electrical and Electronics Measurement	1
BTES305	C204	Engineering Material Science	1.04
BTEEL306	C205	Electrical Machines-I Lab	2.92
BTEEL307	C206	Electrical and Electronics Measurement Lab	3
BTEEP308	C207	Mini Project-I	2.92
BTES211P	C208	Internship-I Evaluation	
BTEEC401	C209	Network Theory	1.2
BTEEC402	C210	Power System	1.24
BTEEC403	C211	Electrical Machine-II	1.2
BTEEC404	C212	Analog and Digital Electronics	1.24
BTEEPE405	C213	Advance Renewable Energy Sources	1.2
BTEEL406	C214	Network Theory Lab	2.8
BTEEL407	C215	Power System Lab	2.8
BTEEL408	C216	Electrical Machine-II Lab	2.8
BTEEL409	C217	Analog and Digital Electronics lab	2.8
BTEEC501	C301	Power System Analysis	1
BTEEC502	C302	Microprocessor and Microcontroller	1

BTEEC503	C303	Power Electronics	1
BTEEPLE504	C304	Industrial Automation	1
BTEEOE505	C305	Electrical Safety	1
BTEEL507	C306	Power System Analysis Lab	3
BTEEL508	C307	Microprocessor and Microcontroller Lab	3
BTEEL509	C308	Power Electronics Lab	3
BTEEPE510	C309	Mini project-II	3
BTEEP410	C310	Internship-II Evaluation	3
BTEEC601	C311	Switchgear and Protection	1.18
BTEEC602	C312	Electrical Machine Design	1.18
BTEEC603	C313	Control System Engineering	1.18
BTEEPE604	C314	Flexible AC Transmission System	1.18
BTEEOE605	C315	Power Plant Engineering	1.34
BTEEL606	C316	Switchgear and Protection Lab	3
BTEEL607	C317	Electrical Machine Design Lab	2.8
BTEEL608	C318	Control System Engineering Lab	3
BTEEM609	C319	Seminar	2.2
BTEEC701	C401	High Voltage Engineering	1.26
BTEEC702	C402	Power System Operation & Control	1.4
BTEEPE703	C403	Electrical Utilization	1.26
BTEEOE704	C404	Mechatronics	1.26
BTEEOE705	C405	Electric and Hybrid Electric Vehicles	1.4

BTEEL707	C406	High Voltage Engineering Lab	3
BTEEM708	C407	Inhouse Project Part-I /Miniproject-III Internship-III Evaluation	3
BTEEP610	C408	Internship-III Evaluation	2.4
BTEEPE801	C409	NPTEL online courses	1.4
BTEEP802	C410	Inhouse Project Part-II /Internship in Industry.	3

3.8 Attainment of Program Outcomes and Program Specific Outcomes (25)

PO Attainment

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
C101	2.69	2.5	1.2	0.96	0.96	0.96	0.96	1.44	0.96	1.25
C102	2.8	2.4	1.6	1.4	1	1.6	1.6	1	2	1.2
C103	3	2.6	1.8	1.6	1.8	2	PO7	PO8	PO9	PO10
C104	2.4	2.2	2.25	2	2.25	2	PO7	PO8	3	2.5
C105	3	1.8	1.6	1.8	2.8	1	1.5	1	PO9	PO10
C106	2.8	2.8	1.6	2.8	2.6	1.2	1	2	2	1
C107	2.8	2.6	1.4	3	1.4	PO6	PO7	1	1.2	PO10
C108	1.18	1.01	0.76	0.42	0.59	0.42	PO7	0.63	0.67	0.53
C109	2.04	1.63	1.36	1.36	1.36	1.36	0.82	0.68	1.36	0.68
C110	2.12	1.27	1.55	0.28	0.71	PO6	PO7	0.14	1.41	PO10
C111	0.22	0.22	0.15	0.15	0.3	0.45	0.67	0.82	3	0.22
C112	2.84	2.6	2.13	1.18	1.18	1.89	1.66	1.18	1.89	1.18
C113	2.8	2.8	1.6	2.8	2.6	1.2	1	2	2	1
C114	3	2.2	2	0.4	3	PO6	PO7	0.2	2	PO10
C115	0.6	0.6	0.6	0.4	0.8	1.2	1.8	1.8	3	0.4
C116	1.87	2.33	1.87	1.87	1.87	1.87	2.33	2.17	2.43	1.4
C201	2.2	2.6	2.2	1.8	2	PO6	PO7	1.4	1.4	1.4
C202	1	0.93	0.47	0.47	0.4	PO6	PO7	PO8	0.33	0.07
C203	1	0.8	0.47	0.4	0.67	PO6	PO7	PO8	0.33	PO10
C204	1.04	0.83	0.49	0.35	0.55	PO6	PO7	PO8	0.35	PO10
C205	2.73	2.34	1.17	2.92	2.14	PO6	PO7	1.36	1.36	0.19
C206	2.8	2.4	1	2.8	2.2	PO6	PO7	1.4	1.4	0.2
C207	2.2	2.6	2.2	1.8	2	PO6	PO7	1.4	1.4	1.4
C208	0.62	0.8	0.53	0.53	0.53	0.62	0.67	0.62	0.8	0.4
C209	1.2	1.12	0.56	0.48	0.56	PO6	PO7	PO8	0.4	PO10
C210	1.24	1.16	0.66	0.74	0.74	PO6	PO7	PO8	0.41	PO10
C211	1.2	1.04	0.56	0.48	0.64	PO6	PO7	PO8	0.4	PO10
C212	1.24	1.16	0.74	0.58	0.74	PO6	PO7	PO8	0.41	PO10
C213	1.12	1.04	0.56	0.56	0.72	0.08	0.08	0.08	0.4	0.08
C214	2.43	2.24	0.75	2.67	1.68	PO6	PO7	1.49	1.49	0.19
C215	2.43	2.24	0.75	2.61	1.68	PO6	PO7	1.49	1.49	0.19

C216	2.61	2.24	1.12	2.8	2.05	PO6	PO7	1.49	1.49	0.19
C217	2.61	2.43	1.12	2.61	2.24	PO6	PO7	1.49	1.49	0.19
C301	1	1	0.6	0.87	0.73	PO6	PO7	PO8	0.33	PO10
C302	1	0.87	0.73	0.4	0.67	PO6	PO7	PO8	0.33	PO10
C303	1	0.93	0.73	0.6	0.67	PO6	PO7	PO8	0.33	PO10
C304	1	0.87	0.6	0.47	0.73	PO6	PO7	0.27	0.33	0.27
C305	0.13	0.6	0.2	0.13	PO5	1	1	0.33	0.67	0.4
C306	3	2.8	1.4	2.8	2.6	PO6	PO7	0.2	1	0.2
C307	3	2.6	2.2	2.8	2.2	PO6	PO7	1.4	1.4	0.2
C308	2.8	2.6	1.4	3	2.4	PO6	PO7	1.2	1.2	0.2
C309	2.6	2.6	2.6	2.2	2	PO6	PO7	2	1.4	2.2
C310	1.87	2.4	1.6	1.6	1.6	1.87	2	1.87	2.4	1.2
C111	1.18	1.1	0.87	0.71	0.71	PO6	PO7	PO8	0.39	PO10
C312	1.18	1.02	1.02	0.79	0.63	PO6	PO7	PO8	0.39	PO10
C313	1.18	1.1	0.79	0.71	0.71	PO6	PO7	PO8	0.39	PO10
C314	1.18	1.02	0.47	0.47	0.55	PO6	PO7	PO8	0.39	0.47
C315	1.34	1.16	0.54	0.67	0.63	PO6	PO7	PO8	0.45	0.54
C316	2.6	2.2	0.8	2.8	2.2	PO6	PO7	1.6	1.6	0.2
C317	2.61	2.24	2.24	1.12	2.05	PO6	PO7	0.93	2.05	0.19
C318	2.8	2.6	1.6	2.8	2.6	PO6	PO7	0.6	1.2	0.2
C319	1.47	1.65	1.47	1.47	1.47	1.47	1.83	1.71	1.91	1.1
C401	1.26	1.09	0.67	0.76	0.84	0.5	PO7	PO8	0.42	PO10
C402	1.4	1.31	0.93	0.75	0.93	PO6	PO7	PO8	0.47	0.75
C403	1.26	1.09	0.67	0.5	0.5	PO6	PO7	PO8	0.42	0.59
C404	1.26	1.18	0.92	0.76	0.92	PO6	PO7	0.34	0.5	0.08
C405	1.4	1.31	0.93	0.75	0.93	PO6	PO7	PO8	0.47	0.56
C406	2.8	2.6	1.2	2.8	2	2.6	PO7	1	1.2	0.2
C407	2.8	2.8	2.4	2.2	1.8	PO6	PO7	1.8	1.4	2
C408	2.13	1.87	2.4	1.6	1.6	2	2.4	2	2.4	2
C409	1.05	1.05	0.93	0.93	1.05	PO6	PO7	PO8	PO9	0.93
C410	2.8	2.8	2.8	2.4	2	1.4	0.6	1.8	1.4	2.2

PO Attainment Indirect

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10

Program Exit	2.8	2.7	2.7	2.4	2.7	2.4	2.4	2.4	2.7	2.7

PO Attainment Level

Note: The Institution can fix the weightage of the indirect attainment maximum up to 20%.

Define the Weightage for Indirect Attainment:

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
Direct Attainment	1.89	1.74	1.20	1.40	1.38	1.30	1.29	1.18	1.17	0.74
InDirect Attainment	2.8	2.7	2.7	2.4	2.7	2.4	2.4	2.4	2.7	2.7
Overall Attainment	2.07	1.93	1.5	1.6	1.64	1.52	1.51	1.42	1.48	1.13

PSO Attainment

Course	PSO1	PSO2	PSO3
C101	PSO1	PSO2	PSO3
C102	PSO1	PSO2	PSO3
C103	3	1	PSO3
C104	PSO1	2.8	2.6
C105	2.8	2	PSO3
C106	PSO1	PSO2	PSO3
C107	2.8	2.6	PSO3
C108	PSO1	PSO2	PSO3
C109	PSO1	PSO2	PSO3
C110	2.12	1.55	PSO3
C111	PSO1	PSO2	PSO3
C112	2.37	1.18	PSO3
C113	PSO1	PSO2	PSO3
C114	3	3	PSO3
C115	PSO1	PSO2	PSO3
C116	1.4	0.93	2.8
C201	2.6	3	2.2
C202	0.73	0.4	PSO3
C203	0.93	0.47	PSO3
C204	0.9	0.42	PSO3
C205	2.92	1.17	2.43
C206	3	1.6	3

C207	2.6	3	2.2
C208	0.53	0.36	0.69
C209	1.12	0.4	PSO3
C210	1.16	0.5	PSO3
C211	1.04	0.48	PSO3
C212	1.16	0.5	PSO3
C213	1.04	0.96	0.8
C214	2.61	1.12	1.87
C215	2.61	1.12	1.87
C216	2.8	1.2	1.87
C217	2.8	1.31	1.87
C301	1	0.4	PSO3
C302	0.93	0.53	PSO3
C303	0.93	0.53	0.33
C304	0.93	0.93	0.33
C305	0.13	0.8	0.67
C306	3	1.2	PSO3
C307	2.8	1.4	PSO3
C308	3	1.2	2
C309	2.6	2.8	2.6
C310	1.6	1.07	2.08
C311	1.1	0.55	PSO3
C312	1.02	0.63	PSO3
C313	1.1	0.55	PSO3
C314	1.02	0.55	PSO3
C315	1.16	0.63	PSO3
C316	2.8	1.2	2.5
C317	2.61	1.68	1.87
C318	2.6	1.2	PSO3
C319	1.47	1.65	1.47
C401	1.18	0.59	0.84
C402	1.31	0.65	PSO3
C403	1.09	0.59	0.42
C404	1.18	0.67	PSO3
C405	1.31	0.84	PSO3

C406	2.8	1.4	2
C407	2.6	2.6	2.8
C408	1.87	1.4	2.08
C409	0.93	1.17	1.31
C410	2.8	3	2.6

PSO Attainment Indirect

Survey	PSO1	PSO2	PSO3
Program Exit Survey	2.8	2.7	2.7
Alumni Survey	2.7	2.52	2.68

PSO Attainment Level

Course	PSO1	PSO2
Direct Attainment	1.83	1.21
InDirect Attainment	2.75	2.61
Overall Attainment	2.01	1.49

4 STUDENTS' PERFORMANCE (120)

Table No. 4A: Admission details for the program excluding those admitted through multiple entry and exit points.

Item (Information to be provided cumulatively for all the shifts with explicit headings, wherever applicable)	2025-26 (CAY)	2024-25 (CAYm1)	2023-24 (CAYm2)	2022-23 (CAYm3)	2021-22 (CAYm4)
N=Sanctioned intake of the program (as per AICTE /Competent authority)	60	60	60	60	60
N1=Total no. of students admitted in the 1st year minus the no. of students, who migrated to other programs/ institutions plus no. of students, who migrated to this program	43	20	14	25	20
N2=Number of students admitted in 2nd year in the same batch via lateral entry including leftover seats	0	53	29	26	23
N3=Separate division if any	0	0	0	0	0
N4=Total no. of students admitted in the 1st year via all supernumerary quotas	0	0	0	2	0
Total number of students admitted in the program (N1 + N2 + N3 + N4) - excluding those admitted through multiple entry and exit points.	43	73	43	53	43

Table No. 4B: Admission details for the program through multiple entry and exit points.

	Item (No. of students admitted/exited through multiple entry and exit points) in the respective batch	2025-26 (CAY)	2024-25 (CAYm1)	2023-24 (CAYm2)	2022-23 (CAYm3)
N52=No. of students admitted in 2nd year via multiple entry and exit points in same batch	N52=No. of students admitted in 2nd year via multiple entry and exit points in same batch	0	0	0	0
N53=No. of students admitted in 3rd year via multiple entry and exit points in same batch	N53=No. of students admitted in 3rd year via multiple entry and exit points in same batch	0	0	0	0
N54=No. of students admitted in 4th year via multiple entry and exit points in same batch	N54=No. of students admitted in 4th year via multiple entry and exit points in same batch	0	0	0	0
N5=N52+N53+N54	N5=N52+N53+N54	0	0	0	0
N61=No. of students exits after 1st year via multiple entry and exit points in same batch	N61=No. of students exits after 1st year via multiple entry and exit points in same batch	0	0	0	0
N62=No. of students exit after 2nd year via multiple entry and exit points	N62=No. of students exit after 2nd year via multiple entry and exit points	0	0	0	0
N63=No. of students exit after 3rd year via multiple entry and exit points in same batch	N63=No. of students exit after 3rd year via multiple entry and exit points in same batch	0	0	0	0
N6=N61+N62+N63	N6=N61+N62+N63	0	0	0	0

Table No. 4C: No. of students graduated within the stipulated period of the program.

Year of entry	Total no. of students (N1 + N2 + N3+ N4 + N5 - N6 as defined above)	Number of students who have successfully graduated in stipulated period of study) [Total of with Bac		
		I year	II year	III year
2025-26 (CAY)	43			
2024-25 (CAYm1)	73	15		
2023-24 (CAYm2)	43	5	28	
2022-23 (CAYm3)	53	17	36	34
2021-22 (LYG)	43	14	25	22
2020-21 (LYGm1)	68	4	54	47
2019-20 (LYGm2)	67	6	65	58

4.1 Enrolment Ratio (20)

Get Details from Table 4.1

Table No.4.1.1: Student enrolment ratio in the 1st year.

Year of entry	N (From Table 4.1)	N1 (From Table 4.1)	N4 (From Table 4.1)	Enrollment Ratio [(N1/N)*
2025-26 (CAY)	60	43	0	71.67
2024-25 (CAYm1)	60	20	0	33.33
2023-24 (CAYm2)	60	14	0	23.33

Average [(ER1 + ER2 + ER3) / 3] = 42.78 ≡ 5.00

Assessment : 5.00

4.2 Success Rate of the Students in the Stipulated Period of the Program (15)

Table No.4.2.1: The success rate in the stipulated period of a program.

Item
A*= (No. of students admitted in the 1st year of that batch and those actually admitted in the 2nd year via lateral entry, plus the number of students admitted through multiple entry (if any) and separate division if applicable, minus the number of students who exited through multiple entry (if any).
B=No. of students who graduated from the program in the stipulated course duration
Success Rate (SR)= (B/A) * 100

Average SR of three batches ((SR_1+ SR_2+ SR_3)/3): 47.66

SR Points : 7.15

Note *: If the value of A in Table No. 4.2.1 is less than the sum of the sanctioned intake (N) and the lateral entry including leftover seats (N2), then the value of A in Table No. 4.2.1 should be the sum of the sanctioned intake (N) and the l 10 % of N)).

4.3 Academic Performance of the First-Year Students of the Program (10)

Table No.4.3.1: Academic Performance of the First-Year Students of the Program.

Academic Performance	CAYm1(2024-25)	CAYm2(2023-24)
Mean of CGPA or mean percentage of all successful students(X)	5.21	5.83
Y=Total no. of successful students	15.00	5.00
Z=Total no. of students appeared in the examination	15.00	5.00
API [X*(Y/Z)]	5.21	5.83

Average API[(AP1+AP2+AP3)/3] : 5.94

Assessment = Average API : 5.94

4.4 Academic Performance of the Second Year Students of the Program (10)

Table No.4.4.1: Academic Performance of the Second Year Students of the Program.

Academic Performance	CAYm1 (2024-25)	CAYm2 (2023
X=(Mean of 2nd year grade point average of all successful students on a 10-point scale) or (Mean of the percentage of marks of all successful students in 2rd year/10)	6.46	6.64
Y=Total no. of successful students	28.00	36.00
Z=Total no. of students appeared in the examination	34.00	43.00
API [X * (Y/Z)]	5.32	5.56

Average API [(AP1 + AP2 + AP3)/3] : 5.10

Assessment [AverageAPI] : 5.10

4.5 Academic Performance of the Third Year Students of the Program (10)

Table No.4.5.1: Academic Performance of the Third Year Students of the Program

Academic Performance	CAYm1 (2024-25)	CAYm2 (2023
X=(Mean of 3rd year grade point average of all successful students on a 10-point scale) or (Mean of the percentage of marks of all successful students in 3rd year/10)	6.69	6.84
Y=Total no. of successful students	34.00	22.00
Z=Total no. of students appeared in the examination	36.00	25.00
API [X*(Y/Z)]:	6.32	6.02

Average API [(AP1 + AP2 + AP3)/3] : 6.12

Assessment [1.5 * AverageAPI] : 6.12

4.6 Placement, Higher Studies and Entrepreneurship (30)

Table No. 4.6.1: Placement, higher studies, and entrepreneurship details.

Item	LYG (2021-22)	LYGm1(2020-21)	LYGm2(2
FS*=Total no. of final year students	66.00	68.00	67.00
X=No. of students placed	20.00	32.00	31.00
Y=No. of students admitted to higher studies	0.00	0.00	0.00
Z= No. of students taking up entrepreneurship	1.00	0.00	7.00
Placement Index(P) = (((X + Y + Z)/FS) * 100):	31.82	47.06	56.72

Average Placement Index = (P_1 + P_2 + P_3)/3: 45.20

Placement Index Points: 13.56

4.7 Professional Activities (25)

4.7.1 Professional Societies/ Bodies, Chapters, Clubs, and Professional Engineering Events Organized (5)

Table No. 4.7.1.1: List of active professional societies/bodies/chapters/clubs.

S.No	Name of the Professional Societies/Bodies, Chapters, Clubs
1	Electrical Engineering Students Association (EESA)

Table No. 4.7.1.2: List of events/programs organized.

(CAYm1) 2024-25

S.No	Name of the Professional Societies/Bodies, Chapters, Clubs	Name of the Event	National/International level	D
1	Electrical Engineering Students Association (EESA)	Basic PLC and Drone Technology	National	0
2	Electrical Engineering Students Association (EESA)	Project Exhibition	National	0
3	Electrical Engineering Students Association (EESA)	Innovative Project Development	National	2
4	Electrical Engineering Students Association (EESA)	Poster Competition	National	1

(CAYm2) 2023-24

S.No	Name of the Professional Societies/Bodies, Chapters, Clubs	Name of the Event	National/International level
1	Electrical Engineering Students Association (EESA)	Workshop on Basic IoT and Sensors	National
2	Electrical Engineering Students Association (EESA)	Expert talk Fundamental of Machine Today & Tomorrow	National
3	Electrical Engineering Students Association (EESA)	Practical industry knowledge career opportunities and essential skills	National
4	Electrical Engineering Students Association (EESA)	Awareness sessions on AI tools	National

(CAYm3) 2022-23

S.No	Name of the Professional Societies/Bodies, Chapters, Clubs	Name of the Event	National/International level
1	Electrical Engineering Students Association (EESA)	Workshop on “MATLAB”	National
2	Electrical Engineering Students Association (EESA)	Workshop on Arduino UNO	National
3	Electrical Engineering Students Association (EESA)	Awareenss on MOOC Certification	National
4	Electrical Engineering Students Association (EESA)	Seminar on Recent Trends of Electrical Engineering	National

4.7.2 Student’s Participations in Professional Events (10)

Table No. 4.7.2.1: List of students participated in professional events.

(CAYm1) 2024-25

S.No	Name of the Student	Name of the Event	State /State /National/International level	Date of Event (DD/MM/YYYY)
1	Chandan Sandeep Bendale	SCIMIT 25,	National Level	28/02/2025
2	Divesh kishor Baviskar	SCIMIT 25,	National Level	28/02/2025
3	Sarang Lalit Patil	SCIMIT 25,	National Level	28/02/2025
4	Jivesh Ashok Attarde	IET K. K. Wagh EXPO 2025	National Level	01/03/2025
5	Khagesh Narkhede	PRAKALP 3.0 At IEEE WIE CRCE	National level	16/04/2025
6	Jivesh Attarde	PRAKALP 3.0 At IEEE WIE CRCE	National level	16/04/2025
7	Mahesh Narkhede	PRAKALP 3.0 At IEEE WIE CRCE	National level	16/04/2025
8	Sarang Lalit Patil	PRAKALP 3.0 At IEEE WIE CRCE	National level	16/04/2025

(CAYm2) 2023-24

S.No	Name of the Student	Name of the Event	State /National/International level	Date of Event (DD/MM/YYYY)	Name
1	Jivesh Ashok Attarde	PRAKALP 2.0	National level	16/04/2024	Partic
2	Mahesh Narkhede	PRAKALP 2.0	National level	16/04/2024	Partic
3	Khagesh Narkhede	PRAKALP 2.0	National level	16/04/2024	Partic
4	Sarang Lalit Patil	PRAKALP 2.0	National level	16/04/2024	Partic
5	Pravin patil	The Maharashtra Student Innovation Challenge (MSIC), organized by the Maharashtra State Innovation Society (MSInS),	State	21/12/2023	Get se
6	Jay Khadse	The Maharashtra Student Innovation Challenge (MSIC), organized by the Maharashtra State Innovation Society (MSInS),	State	21/12/2023	Get se
7	Vaishnav Chaudhari	The Maharashtra Student Innovation Challenge (MSIC), organized by the Maharashtra State Innovation Society (MSInS),	State	21/12/2023	Get se
8	Jivesh Ashok Attarde	Technovation'24 Finale	State	18/04/2024	Partic
9	Vaishnav chaudhari	Ideathon a national level techfest TECHNORION 2024	National level	16/03/2024	Partic

(CAYm3) 2022-23

S.No	Name of the Student	Name of the Event	State /National/International level	Date of Event (DD/MM/YYYY)
1	Sarvesh Chaudhari	TECHNOVATION- 2023	State Level	15/04/2023
2	Vaishnav Caudhari	TECHNOVATION- 2023	State Level	15/04/2023
3	Narendra Mahajan	TECHNOVATION- 2023	State Level	15/04/2023
4	Devyani Falak	TECHNOVATION- 2023	State Level	15/04/2023

4.7.3 Publication of Journals, Magazines, Newsletters, etc. in the Department (5)

Table No. 4.7.3.1: List of students involved in publication of journals, magazines, and newsletters, etc. in the Department.

(CAYm1) 2024-25

S.No	Name of the Journal, Magazine, Newsletter	Name of the Editor	Name of the Student	Semes
1	POWERLINE: 2024-25 Department News Letter	Atul A. Barhate (Editor), Harish A. Patil (Co- Editor)	Manish Patil (VII), Jay Khadse (V), Aditi Pawar (V) , Chandan Bendale (III)	7
2	IGNITE: 2024-25 Department Magazine	Atul A. Barhate (Editor), Harish A. Patil (Co- Editor	Shubhangi Mhaske (VII) Prajwal Chudiwale (V) Vivek Anasane (V) Jivesh Attarde (III)	7

(CAYm2) 2023-24

S.No	Name of the Journal, Magazine, Newsletter	Name of the Editor	Name of the Student	Semeste
1	POWERLINE: 2023-24 Department News Letter	Atul A. Barhate (Editor), Harish A. Patil (Co- Editor)	Pradip Dhobi (V) Tirthraj Patil (VII) Sayali Mahajan (VII) Shruti Sonar (III)	7
2	IGNITE: 2023-24 Department Magazine	Atul A. Barhate (Editor), Harish A. Patil (Co- Editor	Digambar Patil (III) Ritesh Bavaskar (V) Shubham Patil (V) Monali Patil (VII)	7

(CAYm3) 2022-23

S.No	Name of the Journal, Magazine, Newsletter	Name of the Editor	Name of the Student	Seme
1	POWERLINE: 2022-23 Department News Letter	Atul A. Barhate (Editor), Harish A. Patil (Co- Editor)	Narendra Mahajan (VII) Vaishnav Chaudhari (V) Ashwini Bhavsar (III) Mohit Chaudhari (III)	7
2	IGNITE: 2022-23 Department Magazine	Atul A. Barhate (Editor), Harish A. Patil (Co- Editor	Sarvesh Chaudhari (VII) Devyani Falak (VII) Pradip Dhobi (III) Rushikesh Sambare(V)	7

4.7.4 Student Publications (5)

Table No. 4.7.4.1: List of student publications.

(CAYm1) 2024-25

S.No	Name of the Paper	Name of the Student	Semester	Name of the Publisher	Name of the Journal/ Conference, etc.	Vo
1	Home Automation Using Wi - Fi	Trupti Bavaskar, Shubhangi Mhaske, Gayatri Kale	8	Godavari College of Engineering, Jalgaon	International Journal of Innovations in Engineering and Science, www.ijies.net	10

(CAYm2) 2023-24

S.No	Name of the Paper	Name of the Student	Semester	Name of the Publisher	Name of the Journal/ Conference, etc.	Volume N
1	Marks Management System	Arun Divse, Aniket Rajendra Chaudhari, Tejas Anil Fegde, Akshay Gajanan Thakre	8	Godavari College of Engineering, Jalgaon	International Journal of Innovations in Engineering and Science, www.ijies.net	10

(CAYm3) 2022-23

S.No	Name of the Paper	Name of the Student	Semester	Name of the Publisher	Name of the Journal/ Conference, etc.
1	Design and Implementation of Solar Powered Mobile Phone Fast Charging Station for Campus	Tejas R. Chaudhari, Pankaj S. Shinde, Rohit D. Katole, Bhushan S. Patil, Hrishikesh P. Patil	8	Godavari College of Engineering, Jalgaon	International Journal for Research in Applied Science & Engineering Technology (International Peer Reviewed and Refereed Journal)

5 FACULTY INFORMATION (100)

Sr.No	Name of the Faculty	PAN No.	APAAR faculty ID*(if any)	Highest degree	University	Area of Specialization	Date of Joining in this Institution	Experience in years in current institute	Designation at Time Joining in this Institution	Present Designation	The date on which Designated as Professor/ Associate Professor if any	Nature of Association (Regular/ Contract/ Ad hoc)	Currently Associated (Y/N)	In case of NO, Date of Leaving	IS HOD?	Date of Joining in the Dept. (incase of dept. transfer)
1	Dr.Atul Ashok Barhate	AJTPB9269J	NA	M.E. and Ph.D.	KBCNMU, Jalgaon	Electrical Engg	16/12/2009	16.6	Lecturer	Associate Professor	11/06/2024	Regular	Yes		Yes	
2	Mr. Mahesh Hiralal Patil	ARUPP3982F	NA	M.Tech	Mumbai University	Electrical Engg	01/12/2010	15.6	Assistant Professor	Assistant Professor		Regular	Yes		No	
3	Dr. Sachin Rambhau Maheshri	BFWPM8030E	NA	M.Tech and Ph.D.	LNCTU, Bhopal	Electrical Engg	15/02/2017	9.4	Assistant Professor	Associate Professor	09/02/2026	Regular	Yes		No	
4	Dr.Harish Ashok Patil	BSAPP8951N	NA	M.E. and Ph.D.	LNCTU, Bhopal	Electrical Engg	01/05/2019	7.1	Assistant Professor	Associate Professor	09/02/2026	Regular	Yes		No	
5	Mr. Amit Vasant Mhaskar	DCCPM4762A	NA	M.Tech	DBATU Lonere	Electrical Engg	01/03/2023	3.3	Assistant Professor	Assistant Professor		Regular	Yes		No	
6	Mr. Vijay Vasant Chaudhari	AKFPC7548C	NA	M.E.	NMU, Jalgaon	Electrical Engg	27/12/2008	17.5	Assistant Professor	Assistant Professor		Regular	Yes		No	
7	Mr. Nitin Chandrakant Patil	BMYPP1646N	NA	M.Tech	RGPV, Bhopal	Electrical Engg	16/03/2023	3.3	Assistant Professor	Assistant Professor		Regular	Yes		No	
8	Mrs. Harshal Mayur Patil	BFXPC8605N	NA	M.E.	KBCNMU, Jalgaon	Electrical Engg	01/08/2023	2.10	Assistant Professor	Assistant Professor		Regular	Yes		No	
9	Mr. Rohit Prakash Nemade	BIBPN1437L	NA	M.Tech	Bhabha University Bhopal	Electrical Engg	01/08/2025	0.10	Assistant Professor	Assistant Professor		Regular	Yes		No	
10	Ms. Komal Mohan Lokhande	BMKPL1312F	NA	M.Tech	NMU, Jalgaon	Electrical Engg	01/08/2024	1.10	Assistant Professor	Assistant Professor		Regular	Yes		No	
11	Mrs. Dnyanda Dinkar Kolhe	FQJPK5243M	NA	M.E.	NMU, Jalgaon	Electrical Engg	03/06/2019	5.11	Assistant Professor	Assistant Professor		Regular	No	30/05/2025	No	
12	Mr. Nemichand Kaluram Saini	DOVPS4481B	NA	M.Tech	RAJASTHAN TECHNICAL UNIVERSITY	Electrical Engg	21/03/2023	2.5	Assistant Professor	Assistant Professor		Regular	No	21/08/2025	No	
13	Mrs. Subhangi Nitesh Tayade	CNTPM2682N	NA	M.E.	KBCNMU, Jalgaon	Electrical Engg	16/01/2019	6.9	Assistant Professor	Assistant Professor		Regular	No	30/10/2025	No	

5.1 Student-Faculty Ratio (SFR) (30)

No. of UG(Engineering) programs in Department including allied departments/ clusters (UGn):
UG1=1st UG program
UGn=nth UG program
B= No. of Students in UG 2nd year (ST)
C= No. of Students in UG 3rd year (ST)
D= No. of Students in UG 4th year (ST)
No. of PG (Engineering) programs in Department including allied departments/ clusters (PGm):
PG1=1st PG program.
PGm=mth PG program
A= No. of Students in PG 1st year
B= No. of Students in PG 2nd year
Student Faculty Ratio **(SFR)** = S/F
S= No. of students of all programs in the Department including all students of allied departments/clusters.
No. of students (ST)=Sanctioned Intake (SA)+ Actual admitted students via lateral entry including leftover seats (L) if any (limited to 10 % of SA)
Students who admitted under supernumerary quotas (SNQ, EWS, etc) will not be considered in calculating SFR value. Those students are exempted.
F=Total no. of regular or contractual faculty members (Full Time) in the Department, including allied departments/clusters (excluding first year faculty (The faculty members who have a 100% teaching load in the first-year courses)).

UG

No. of UG(Engineering) programs in Department including allied departments/clusters(UGn): 1

	Electrical Engineering					
Year of Study	**CAY**		**CAYm1**			
	(2025-26)		**(2024-25)**			
	Sanction Intake	**Actual admitted through lateral entry students**	**Sanction Intake**	**Actual admitted through lateral entry students**	**Sanction Intake**	**Actual adm**
2nd Year	60	6	60	6	60	6
3rd Year	60	6	60	6	60	6
4th Year	60	6	60	6	60	6
Sub-Total	**180**	**18**	**180**	**18**	**180**	**18**
Total	**198**		**198**		**198**	

Grand Total	198	198	198

PG

No. of PG Programs in the Department 0

Grand Total			

SFR

No. of UG Programs in the Department 1
No. of PG Programs in the Department 0

Electrical Engineering

Description	CAY(2025-26)	CAYm1 (2024-25)
UG1.B	66	66
UG1.C	66	66
UG1.D	66	66
UG1: Electrical Engineering	**198**	**198**
DS=Total no. of students in all UG and PG programs in the Department	198	198
AS=Total no. of students of all UG and PG programs in allied departments	0	0
S=Total no. of students in the Department (DS) and allied departments (AS)	**S1=** 198	**S2=** 198
DF=Total no. of faculty members in the Department	10	12
AF= Total no. of faculty members in the allied Departments	0	0
F=Total no. of faculty members in the Department (DF) and allied Departments (AF)	**F1=** 10	**F2=** 12
FF=The faculty members in F who have a 100% teaching load in the first-year courses	1	1
Total no. of PoP in the Department (DF) and allied Departments (AF)	0 **PoP1**	0 **PoP2**
Total faculty (TF = (F + PoP) - FF)	**TF1= 9**	**TF2= 11**
Student Faculty Ratio (SFR)=S/(TF)	**SFR1= 22.00**	**SFR2= 18.00**
Average SFR for 3 years	**SFR= 19.93**	

Average SFR for three assessment years : 19.93

Assessment SFR : 18

5.2 Faculty Qualification (25)

Year	X	Y	RF	FQ = 2.5 x [(10X + 4Y) / RF)]
2025-26(CAY)	1	9	9.00	12.78
2024-25(CAYm1)	1	11	9.00	15.00
2023-24(CAYm2)	0	11	9.00	12.22

Average Assessment : 13.33

5.3 Faculty Cadre Proportion (25)

Year	Professors		Associate Professors		
	Required F1	Available	Required F2	Available	Required F3
CAY(2025-26)	1.00	0.00	2.00	1.00	7.00
CAYm1(2024-25)	1.00	0.00	2.00	1.00	7.00
CAYm2(2023-24)	1.00	0.00	2.00	0.00	7.00
Average Numbers	1.00	0.00	2.00	0.67	7.00

Cadre Ratio Marks [(AF1 / RF1) + [(AF2 / RF2) * 0.6] + [(AF3 / RF3) * 0.4]] * 12.5 : 12.00

5.4 Visiting/Adjunct/Emeritus Faculty etc. (10)

Table No. 5.4.1: List of visiting/adjunct faculty/professor of practice and their teaching and practical loads.
(CAYm1) 2024-25

S.No	Name of the Person	Designation	Organization	Name of the Course
1	Rajesh B. Thakare	Co-Founder & CEO Electrosoft System	Electrosoft System, Jalgaon	Microprocessor and Microcontroller, Analog and Digital Electronics

(CAYm2) 2023-24

S.No	Name of the Person	Designation	Organization	Name of the Course
1	Nilesh S. Wagh	Co-Founder & MD of Electrosoft System	Electrosoft System, Jalgaon	Microprocessor and Microcontroller, Analog and Digital Electronics

(CAYm3) 2022-23

S.No	Name of the Person	Designation	Organization	Name of the Course
1	Rajesh B. Thakare	Co-Founder & CEO Electrosoft System	Electrosoft System, Jalgaon	Microprocessor and Microcontroller, Analog and Digital Electronics

5.5 Faculty Retention (10)

Description	2025-26
RF=No. of required faculty in the Department to adhere to the 20:1 Student-Faculty ratio, with calculations based on both student numbers and faculty requirements as per section 5.1 of SAR; (RF=DS/20).	9
AF=The no. of available faculty members in the Department including allied Departments	10
A= The no. of faculty members at the current institute with less than 1 year of experience (A in AF)	1
B= The no. of faculty members at the current institute with more than 1 year and less than 2 years of experience (B in AF)	1
C= The no. of faculty members at the current institute with more than 2 years and less than 3 years of experience (C in AF)	1
D= The no. of faculty members at the current institute with more than 3 years and less than 4 years of experience (D in AF)	2
E= The no. of faculty members at the current institute with more than 4 years of experience (E in AF)	5
FR=(((A*0) +(B*1)+(C*2)+(D*3)+(E*4))/RF) *2.50 (points limited to 10)	8

Average : 9.00

Assessment Marks : 9.00

6 FACULTY CONTRIBUTIONS (120)

6.1 Professional Development Activities (60)

6.1.1 Memberships in Profession Societies at National/International Levels (5)

Table No. 6.1.1.1: List of faculty members and their memberships.

S.No	Name of the Faculty	Name of the Professional Society /Body at National and International Level	Nat
1	Dr Atul Barhate	The Indian Society for Technical Education LM64044, IFERP Institute for Engineering research & publications PROF-45919021,IEEE-Member ID98485541	Life
2	Prof Mahesh H Patil	IEEE young Profession membership, IEEE member -Membership no.90655372	Me
3	Dr Sachin Maheshri	All India Council For Technical Skill Development AICTSD/PROFESSOR/68512, Institute for Engineering research & publications ID-PM02647185	Me
4	Dr Harish Patil	All India Council For Technical Skill Development AICTSD/PROFESSOR/05144	Col
5	Rohit Prakash Nemade	All India Council For Technical Skill Development AICTSD/PROFESSOR/04736	Col
6	Harshal Mayur Patil	All India Council For Technical Skill Development AICTSD/PROFESSOR//04737	Col
7	Amit Vasant Mhaskar	All India Council For Technical Skill Development AICTSD/PROFESSOR//04738	Col

6.1.2 Faculty as Resource Persons or Participants in STTPs/FDPs (15)

6.1.2.1 Faculty as Resource Persons in STTPs/FDPs (5)

Table No. 6.1.2.1: List of faculty members as resource person in STTP/FDP events.
(CAYm1) 2024-25

S.No	Name of the Faculty as Resource Person	Name of the STTP/FDP	Date (DD/MM/YYYY)	Location	Organized by
1	Dr Atul Barhate	Risk Mitigation in Renewable Power Systems	07/10/2024	Bhubaneswar	KIST, BBSR
2	Prof Harish A Patil	Risk Mitigation in Renewable Power Systems	07/10/2024	Bhubaneswar	KIST, BBSR
3	Prof. Sachin Maheshri	EV Charging Infrastructure and Grid Impact	17/03/2025	Nagpur	Suryodaya college of engineering
4	Prof Mahesh H Patil	EV Charging Infrastructure and Grid Impact	17/03/2025	Nagpur	Suryodaya college of engineering

(CAYm2) 2023-24

S.No	Name of the Faculty as Resource Person	Name of the STTP/FDP	Date (DD/MM/YYYY)	Location	Organized by
1	Dr Atul Barhate	E-Mobility Powered by Renewable Sources	18/09/2023	Bhubaneswar	KIST–BBQR Konark Institute of Science and Technolo
2	Prof Harish A Patil	E-Mobility Powered by Renewable Sources	18/09/2023	Bhubaneswar	KIST–BBQR Konark Institute of Science and Technolo
3	Prof Mahesh H Patil	IoT for Smart Energy Management	20/09/2023	Nagpur	Engineering & Technology, Nagpur
4	Prof. Sachin Maheshri	IoT for Smart Energy Management	20/09/2023	Nagpur	Engineering & Technology, Nagpur

(CAYm3) 2022-23

S.No	Name of the Faculty as Resource Person	Name of the STTP/FDP	Date (DD/MM/YYYY)	Location	Organized by
1	Prof Atul Barhate	Decarbonization Pathways in Transport & Industry	20/02/2023	Nagpur	Suryodaya College of Engine
2	Prof Mahesh H Patil	Decarbonization Pathways in Transport & Industry	20/02/2023	Nagpur	Suryodaya College of Engine
3	Prof.Vijay Vasant Chaudhari	FDP on ICT Integration in Pedagogical Transformation	12/12/2022	Bhubaneswar	KIST BBSR
4	Prof. Sachin Maheshri	FDP on ICT Integration in Pedagogical Transformation	12/12/2022	Bhubaneswar	KIST BBSR

6.1.2.2 Faculty Members' Participation in STTPs/FDPs (10)

Name of the faculty	Max 5 Per Faculty		
	2024-25(CAYm1)	2023-24(CAYm2)	2022-23(CAYm3)
Dr Atul Ashok Barhate	5.00	5.00	5.00
Prof Mahesh Hiralal Patil	5.00	3.00	5.00
Dr Sachin Rambhau Maheshri	5.00	5.00	5.00
Dr Harish Ashok Patil	3.00	5.00	5.00
Mr. Amit Vasant Mhaskar	5.00	3.00	0.00
Mr. Vijay Vasant Chaudhari	5.00	3.00	3.00
Mr. Nitin Chandrakant Patil	0.00	3.00	3.00
Mrs. Harshal Mayur Patil	5.00	3.00	0.00
Mr. Rohit Prakash Nemade	5.00	0.00	0.00
Ms. Komal Mohan Lokhande	5.00	0.00	0.00
Mrs. Dnyanda Dinkar Kolhe	0.00	0.00	3.00
Mr. Nemichand Kaluram Saini	0.00	0.00	3.00
Sum	43.00	30.00	32.00
RDF = Number of faculty required to comply with the 20:1 student - faculty ratio in the Department alone, as per section 5.1 of SAR(RDF= DS / 20).	9.90	9.90	9.90
Assessment Points (AP)= 2 * (Sum/(0.5* RDF)) (Points limited to 5 for each assessment year)	10.00	10.00	10.00

Average assessment over 3 years: 10.00

6.1.3 Faculty Certification of MOOCs through SWAYAM, etc. (10)

Table No. 6.1.4.1: List of faculty members obtained certification of MOOCs for the past 3 years.

S.No	Name of the Faculty	Name of Course Passed	Course Offered by (agency)
1	Prof Mahesh h Patil	Classroom Management & teaching Competency	SWAYAM
2	Dr Atul Ashok Barhate	Advance Power Electronics and Control	NPTEL
3	Dr Atul Ashok Barhate	Fuzzy Logic and Neural Networks	NPTEL

6.1.4 FDP/STTP Organized by the Department (10)

Table No. 6.1.5.1: List of FDPs/STPs organized by Department for the past 3 years.

(CAYm1) 2024-25

S.No	Name of the Program	Date of the Program(DD/MM/YYYY)	Duration	Name of the Speaker & Designation and Organization
1	Five days Workshop on “Basic PLC and Drone Technology	06/05/2025	5 days	Er. Nilesh Wagh Er. Rahul Dekate
2	Five workshop on Innovative Project Development	24/10/2024	5 days	Er. Nilesh Wagh Er. Ashis Polke

(CAYm2) 2023-24

S.No	Name of the Program	Date of the Program(DD/MM/YYYY)	Duration	Name of the Speaker & Designation and Or
1	One Week Workshop on MATLAB ELECTRICAL	11/03/2024	6 days	Er. Prasanna Titarmare, Dr. S K Gochayyat
2	Sessions of Electrical Engineering Department students on Behaviour of Engineering Students at camp	17/10/2023	5 days	Prof Mahesh H Patil Prof Atul Barhate
3	Fiveday Aurdino workshop Introduction to IoT	15/06/2023	5 days	A D Vishwakarma Er. Rahul Dekate

(CAYm3) 2022-23

S.No	Name of the Program	Date of the Program(DD/MM/YYYY)	Duration	Name of the Speaker & Designation and Organizati
1	FDP on Basic IoT & Sensors	11/11/2022	5 days	Prof Nemichand Saini Prof Sachin Maheshri
2	Blooms taxanomy by Prof.A.A Barhate.EE department GFs GCOE Jalgaon for Staff	03/02/2023	5 days	Prof.A.A Barhate.EE department, S K Gocchayat

6.1.5 Faculty Support in Student Innovative Projects (10)

Table No. 6.1.6.1: List of faculty members involved in student innovative projects.

(CAYm1) 2024-25

S.No	Name of the Faculty	Name of the Event	Date of the Event(DD/MM/YYYY)	Place of Event
1	Dr Sachin Maheshri Student name Jivesh Attarde Khagesh Narkhede	22nd National level working model competition IET K K Wagh EXPO'25	28/02/2025	IET K K Wagh EXPO'25 Nasik
2	Prof Mahesh H Patil Student name Mahesh Narkhede, Jivesh Attarde Khagesh Narkhede	Avishkar 2025 Research Competition	18/10/2024	GF's Godavari College of Engineering Jal
3	Dr Sachin Maheshri Student Name Divesh Kishor Bavisker, Chandan Bendale, Sarang Lalit Patil	National Science Day Celebration SCIMIT '25 (Mega Project Contest) 15th Project EXPO event	28/02/2025	Manakula Vinayagar Institute Of Technolc Puducherry-605107
4	Dr Sachin Maheshri Khagesh Narkhede Jivesh Attarde Mahesh Narkhede Sarang Lalit Patil	PRAKALP 3.0 At IEEE WIE CRCE	16/04/2025	PRAKALP 3.0 At IEEE WIE CRCE Fr.Cor Engineering,Bandra

(CAYm2) 2023-24

S.No	Name of the Faculty	Name of the Event	Date of the Event(DD/MM/YYYY)	Place of Eve
1	Dr Harish Ashok Patil Students name - Pravin patil, Jay Khadse	The Maharashtra Student Innovation Challenge (MSIC), organized by the Maharashtra State Innovation S	21/12/2023	Government Jalgaon
2	Dr Harish Ashok Patil Students name Vaishnav chaudhari	The Maharashtra Student Innovation Challenge (MSIC), organized by the Maharashtra State Innovation S	21/12/2023	Government Jalgaon
3	Dr Sachin Maheshri Student name Jivesh Attarde	Dynamic wireless EV charging State level project competition	20/03/2024	Gramin Tech Nanded
4	Dr Sachin Maheshri Student name Jivesh Attarde Mahesh Narkhede Sarang Patil Khagesh Narkhede	PRAKALP 2.0 At IEEE WIE CRCE	16/04/2024	PRAKALP 2.
5	Dr Sachin Maheshri Student name Jivesh Attarde	Technovation'24	03/04/2024	GF's Godava
6	Dr Sachin Maheshri Student name Jivesh Attarde	Technovation'24 Finale	18/04/2024	Amrutvahini Jalgaon
7	Dr Harish Ashok Patil Students name Vaishnav chaudhari	Ideathon a national level techfest TECHNORION 2024	16/03/2024	G H Raisoni Jalgaon
8	Prof Mahesh H Patil Student name-Aditi Pawar	Internal Hackthon SIH 2023	17/09/2023	GF's Godava Jalgaon

(CAYm3) 2022-23

S.No	Name of the Faculty	Name of the Event	Date of the Event(DD/MM/YYYY)	Place of Event
1	Dr Harish Ashok Patil Students name Vaishnav chaudhari	Technovation 2023 Project Smart security pole	25/03/2023	GF's Godavari College of Engine
2	Dr Harish Ashok Patil Students name Vaishnav chaudhari	Technovation 2023 IEEE Bombay section GRAND FINALE Project Smart security pole	15/04/2023	Sanjivani college of Engineering

6.1.6 Faculty Internship/Training/Collaboration with Industry (10)

Table No. 6.1.7.1: Faculty internship/training/collaboration details.

S.No	Name of the Faculty	Name of the Internship/ Training/ Collaboration	Name of the Company & Place	Duration	Outcomes of Internship/ Training/ Collaboration
1	Dr. Sachin Rambhau Maheshri	Colaboration	Dronastra Energy Flights Pvt Ltd. Pune	5 days	One Major Project completed by LY Btech Electrical
2	Mr. Amit Vasant Mhaskar	Colaboration	ABC CAD Centre Jalgaon	45 days	One Major Project simulation work running by LYBE
3	Mr. Nemichand Kaluram Saini	Collaboration	MIT chtt. Sambhajinagar	1 days	Organzed Avishkar 2024 for Students
4	Mr. Nemichand Kaluram Saini	Implementation of Arduino & R-Pi	NITTR ,Chandigarh	5 days	Organized workshop on Arduino IoT for students

6.2 Research and Development Activities (60)

6.2.1 Academic Research (10)

Table No. 6.2.1.1: Faculty publication details.

S.No.	Item	2024-25 (CAYm1)	2023-24 (CAYm2)	2022-23 (CAYm3)
1	No. of peer reviewed journal papers published	0	0	0
2	No. of peer reviewed conference papers published	1	6	1
3	No. of books/book chapters published	2	0	1

6.2.2 Development Activities (10)

Sr. No.	Name of Faculty Member(s)	Academic Year	Title of Patent	Category	Patent / Application / Design No.	
1	Prof. M. H. Patil, Prof. Harish Patil, Prof. Amit Mhaskar, Prof. Sachin Maheshri, Prof. N. K. Saini	2024–25	Charging Station for Hybrid Electric Vehicle	Design Patent	Design No. **419578-001**	11/0
2	Dr. Atul Barhate	2024–25	Artificial Intelligence and Solar Powered Antenna	Design Patent	Design No. **414312-001**	20/0
3	Prof. M. H. Patil	2023–24	Wind and Solar Power Charging Station	Design Patent	Design No. **381771-001**	19/0
4	Prof. Sachin Maheshri, Prof. Harish Patil	2024–25	An Efficient Approach for Synchronous Generator Based Diesel PV Hybrid Microgrid with Power Quality Controller	Patent	Application No. **202521042983**	23/0
5	Prof. Harish Patil, Prof. Sachin Maheshri	2024–25	Grid-Connected Hybrid PV-Wind-Battery Based System for Household Applications	Patent	Application No. **202521042999**	30/0
6	Dr. Sachin Maheshri, Dr. Harish Patil	2025	Sustainable Battery Health Prediction Framework for Next-Generation Electric Vehicles	Patent	Application No. **202621016634 A**	Publ Date 03/0

Sr. No.	Faculty Member	Prototype / Working Model Developed 2022-2023	Area of Application	Status
1	Prof. Mahesh H. Patil	1. Solar Power Monitoring System	Renewable Energy	Develop ed
		2. Home Automation Using Google / Alexa	Smart Home Automation	Develop ed
		3. Design and Control Logic Development for Auto Mains Failure Between Electrical Board and Diesel Generator	Power System Automation	Develop ed
		4. Solar Mobile Fast-Charging Station at Campus	Electric Vehicle & Renewable Energy	Develop ed
2	Prof. Sachin R. Maheshri	1. Smart Energy Meter Using IoT	Smart Metering / IoT	Develop ed
		2. Fingerprint Door Lock	Security System / Embedded Systems	Develop ed
3	Dr. Atul A. Barhate	1. Automatic Tea Vending Machine	Industrial Automation	Develop ed
		2. Automatic Curtain Mover	Home Automation	Develop ed
		3. Automatic Water Level Controller (LoRa) for Overhead Tank	IoT & Water Management	Develop ed
5	Prof. Shubhangi Tayade	1. Student Record Monitoring System (ERP Software)	Educational Software / ERP	Develop ed
		2. App Development for Energy Monitoring at Each Department	Energy Management / IoT	Develop ed

6	Prof. Harish A. Patil	1. Multicolour Seven Segment Display	Embedded Systems	Developed
		2. Solar DC Microgrid	Renewable Energy / Smart Grid	Developed

Sr. No.	Faculty Member	Prototype / Working Model Developed 2023-2024	Area of Application	Status
1	Prof. Mahesh H. Patil	1. Solar Batteries / Inverter	Renewable Energy & Power Electronics	Developed
		2. 1 kW Solar System for Solar Air Conditioner	Solar Energy Systems	Developed
		3. Solar Air Conditioner Inverter	Renewable Energy & Power Electronics	Developed
2	Prof. Harish A. Patil	1. Two-Wheeler EV Charger Study for India	Electric Vehicle Charging Infrastructure	Developed
		2. Multicolour Scrolling LED Display	Embedded Systems & Display Technology	Developed
		3. Smart Defender	Smart Security System	Developed
3	Dr. Atul A. Barhate	1. Mark Management System for GFGCOE Jalgaon	Educational Software / ERP	Developed
		2. Home Automation	Home Automation & IoT	Developed
4	Prof. Sachin R. Maheshri	1. Four-Wheeler EV Battery Study Project	Electric Vehicle Technology	Developed
		2. Drone Technology	UAV & Embedded Systems	Developed
5	Prof. Amit V. Mhaskar	1.Solar Air Conditioner	Renewable Energy Applications	Developed

Sr. No.	Faculty Member	Prototype / Working Model Developed 2024-2025	Area of Application	Status

1	Prof. Mahesh H. Patil	1. IoT Based Smart Power Factor Control	Power System Automation	Developed
		2. Battery Management System (BMS) and SOC Development for Electric Vehicles	Electric Vehicles	Developed
		3. IR Remote Sensor	Embedded Systems	Developed
		4. Touch Sensor	Automation	Developed
		5. Wire Break Alarm Circuit using BC548	Protection System	Developed
		6. Three-Phase Line-to-Line Fault Detection	Power System Protection	Developed
		7. Temperature Detector	Instrumentation	Developed
		8. Smart Lighting System using LDR	Energy Conservation	Developed
		9. LED Lighting using Solar Panel with Battery	Renewable Energy	Developed
2	Dr. Atul A. Barhate	1. Home Automation using Arduino Controller (Wi-Fi)	Home Automation	Developed
		2. DC Motor Control using Arduino	Motor Control	Developed
		3. Automatic Fire Extinguisher	Safety System	Developed
		4. Burglar Alarm	Security System	Developed
		5. Water Level Indicator	Automation	Developed
		6. Pulse Generator	Electronics Laboratory	Developed
3	Prof. Sachin R. Maheshri	1. Development of Single Phase Inverter	Power Electronics	Developed
		2. Solar Power Grid Status Monitoring and Alerting using Android Smartphone	Smart Grid	Developed
		3. Anti-Sleep Alarm for Drivers	Automotive Safety	Developed
		4. IR Sensor Based 7-Segment Display using Arduino	Embedded Systems	Developed
		5. Street Light Controller	Energy Management	Developed
		6. Three-Phase LL-LG Fault Analysis	Power System Protection	Developed
		7. Photodiode Based Fire Sensor	Fire Safety	Developed

4	Prof. Amit V. Mhaskar	1. Arduino Controller for Practical Applications	Embedded Systems	Developed
		2. LDR Based Automatic Street Light Control	Energy Conservation	Developed
		3. Automatic Room Freshener	Home Automation	Developed
		4. Automatic Plant Watering System	Smart Agriculture	Developed
5	Prof. Nemichand K. Saini	1. AC Induction Motor Speed Control	Electrical Drives	Developed
		2. Automation of Handwash Machine	Automation	Developed
		3. Object Detection System using Arduino	Embedded Systems	Developed
		4. Smart Object Sensing Dustbin	Smart City	Developed
		5. Touchless Bell	Automation	Developed
		6. Fire Alarm System	Safety	Developed
		7. Laser Security Light	Security System	Developed
		8. Rectifier Circuit	Power Electronics	Developed
6	Prof. Harish A. Patil	1. Solar-Based Audio System for Classroom Announcements	Renewable Energy	Developed
		2. MY4N Smart Door Room	Smart Home Automation	Developed
		3. Short Circuit Protection for Electric Motor	Electrical Protection	Developed
		4. 12 V DC Converter	Power Electronics	Developed
		5. IoT Based Smart Switch	IoT & Automation	Developed
		6. Solar-Based Mobile Charger	Renewable Energy	Developed
		7. Automatic Light ON/OFF System	Energy Conservation	Developed

6.2.3 Sponsored Research Project (15)

2024-25 (CAYm1)

PI Name	Co-PI names if any	Name of the Dept., where project is sanctioned	Project Title*	Name of the Funding agency	Duration of the projec

2023-24 (CAYm2)

PI Name	Co-PI names if any	Name of the Dept., where project is sanctioned	Project Title*	Name of the Funding agency	Duration of the projec

2022-23 (CAYm3)

PI Name	Co-PI names if any	Name of the Dept., where project is sanctioned	Project Title*	Name of the Funding agency	Duration of the projec

Total Amount (Lacs) Received for the Past 3 Years:

Note*:

- Only sponsored research projects will be considered. Infrastructure-based projects will not be considered here.

6.2.4 Consultancy Work (15)

2024-25 (CAYm1)

PI Name	Co-PI names if any	Name of the Dept., where project is sanctioned	Project Title*	Name of the Funding agency	Duration of the projec

2023-24 (CAYm2)

PI Name	Co-PI names if any	Name of the Dept., where project is sanctioned	Project Title*	Name of the Funding agency	Duration of the projec

2022-23 (CAYm3)

PI Name	Co-PI names if any	Name of the Dept., where project is sanctioned	Project Title*	Name of the Funding agency	Duration of the projec

Total amount (Lacs) received for the past 3 years:

Note*:

- Only consultancy projects will be considered. Infrastructure-based projects will not be considered here.

6.2.5 Institution Seed Money or Internal Research Grant to its Faculty for Research Work(10)

6.2.5 A Amount received (6)

2024-25 (CAYm1)

Faculty name	Project title/ Support for Activity	Duration of the project	Amount(Lacs) i.e. 15,25,000=15.25	Amount Utilized(Lacs) i.e. 15,25,000=15.25
			Amount received (Rs.): 0	

2023-24 (CAYm2)

Faculty name	Project title/ Support for Activity	Duration of the project	Amount(Lacs) i.e. 15,25,000=15.25	Amount Utilized(L i.e. 15,25,000=15.2
Dr Atul Ashok Barhate	Research Paper publication Transformer Incipient fault Monitoring using DGA	1 Year	0.01	0.01
Dr Harish Ashok Patil	The Maharashtra Student Innovation Challenge (MSIC)	1 Year	1.00	1.00
Dr Harish Ashok Patil	The Maharashtra Student Innovation Challenge (MSIC)	1 Year	1.00	1.00
			Amount received (Rs.): 2.01	

2022-23 (CAYm3)

Faculty name	Project title/ Support for Activity	Duration of the project	Amount(Lacs) i.e. 15,25,000=15.25	Amount Utilized(Lacs) i.e. 15,25,000=15.25
			Amount received (Rs.): 0	

Total amount (Lacs) received for the past 3 years : 2.01

6.2.5 B Amount utilized (4)

The amount received is utilised for the start ups

7 FACILITIES AND TECHNICAL SUPPORT (100)

7.1 Adequate and well equipped laboratories, and technical manpower (40)

Sr. No	Name of the Laboratory	Number of students per set up(Batch Size)	Name of the Important Equipment	Weekly utilization status(all the courses for which the lab is utilized)	Technical Manpower Support		
					Name of the Technical staff	Designation	Qualification
1	COMPUTER &	20	Desktop PC –	6-8 Hours	Miss. Kalyani F	Technical Assis	B.Tech EE
2	ELECTRICAL I	20	1 Phase Powe	6-8 Hours	Miss. Kalyani F	Technical Assis	B.Tech EE
3	SWITCHGEAR	20	Single pole IDI	6-8 Hours	Miss. Kalyani F	Technical Assis	B.Tech EE
4	POWER ELEC	20	Speed control	6-8 Hours	Miss. Kalyani F	Technical Assis	B.Tech EE
5	ELECTRICAL I	20	1 Phase Auto T	6-8 Hours	Mrs. Gayatri W	Technical Assis	B.Tech EE
6	ELECTRICAL I	20	D.C. Ammeter	6-8 Hours	Mrs. Gayatri W	Technical Assis	B.Tech EE
7	HIGH VOLTAG	20	100 mm spher	6-8 Hours	Mrs. Gayatri W	Technical Assis	B.Tech EE
8	CONTROL SY	20	1) Potentiomet	6-8 Hours	Mrs. Gayatri W	Technical Assis	B.Tech EE

7.2 Additional Facilities Created for Improving the Quality of Learning Experience in Laboratories (20)

Sr. No	Name of the Facility	Details	Purpose for creating facility	Utilization	Relevance to POs/PSOs
1	Departmental library	Collection of textbooks, reference books, competitive exam materials, journals, previous question papers	To provide easy access to academic resources beyond central library	Used by students for study, assignments, competitive exam preparation	All POs and PSOs
2	Project, Model room	50 sq. m. room with 10 workbenches, storage for 100+ projects	Provide dedicated space for project work & model display	30+ major projects & 50+ models developed annually	All POs and PSOs
3	Seminar Hall	100-seater AC hall with projector & audio system	Conduct guest lectures, workshops, seminars	15+ events/year; utilized by all students	All POs and PSOs
4	Rooftop Solar PV System	Grid-connected rooftop solar photovoltaic system installed on the institute/department building; includes PV modules, inverter, protection system, monitoring arrangement, and associated electrical infrastructure	To provide real-time exposure to renewable energy generation, solar PV operation, performance monitoring, and sustainability practices	Used for demonstrations, Renewable Energy Systems (RES) laboratory/subject activities, energy audits, student projects, and performance analysis	PO1, PO4, PO5, PO7 (Environment & Sustainability), PO12, PSO2

7.3 Maintenance of laboratories and overall ambiance (10)

The Department follows a structured, multi-layered maintenance system for its laboratories and overall ambiance, so as to create a safe, functional, and conducive environment for teaching, learning, and research. Rather than relying on a single reactive process, maintenanc Department is organised into four distinct but interlinked streams like Routine, Preventive, Breakdown/Corrective, and Other (AMC, Safety & Compliance, Civil/Ambiance) maintenance each governed by its own schedule, responsibility, and record-keeping, and all converging maintenance and stock registers that give the Department a single, auditable view of equipment health at any point in time.

This structured approach ensures that minor issues are resolved before they escalate, those that do escalate are triaged and resolved through a defined pathway, and every piece of equipment is periodically serviced and calibrated even before a fault occurs rather than the l solely on breakdown repairs.

Overall Maintenance Framework

The figure below summarises how the four streams of maintenance feed into a common record-keeping system and, together, sustain a well-maintained, safe, and student-friendly departmental environment.

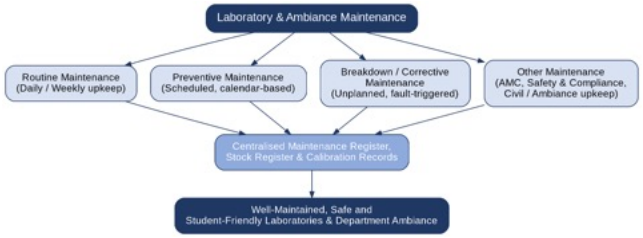


Fig. 1: Overall Framework — Types of Laboratory & Ambiance Maintenance

Types of Maintenance Practised in the Department

The table below defines each type of maintenance, its triggering basis, and typical activities covered:

Type	Trigger / Frequency	Typical Activities Covered
Routine Maintenance	Daily / Weekly (fixed calendar)	Cleaning and dusting of equipment and furniture, checking power and water supply, housekeeping, visual inspection for obvious wear — carried out by the lab assistant/attendant and logged in the Routine Maintenance Log.
Preventive Maintenance	Scheduled (annual PM calendar)	Planned calibration, servicing, and lubrication of instruments and equipment as per OEM guidelines, carried out before a fault occurs, so as to minimise unplanned downtime and extend equipment life.
Breakdown / Corrective Maintenance	Unplanned (fault-triggered)	Repair or replacement carried out in response to an identified malfunction or failure, triaged by severity (minor / major) and resolved either in-house or through vendor/OEM escalation.
Other Maintenance	Contractual / Periodic / Statutory	Annual Maintenance Contracts (AMC) with OEMs/vendors for critical equipment, safety and statutory compliance checks (fire safety, electrical safety, earthing), and civil/ambiance upkeep (furniture, painting, greenery, waste management).

1. Routine Maintenance

Routine maintenance forms the first line of defence against equipment deterioration and an untidy laboratory environment. Every laboratory follows a daily/weekly checklist covering cleaning, dusting, verification of power and water supply, furniture and fixture checks, and ge This is carried out by the lab assistant/attendant under the supervision of the lab in-charge, and every round is logged — deficiencies observed during routine checks are immediately escalated into the Breakdown/Corrective Maintenance process (Section 3), so that small iss next scheduled inspection to be addressed.

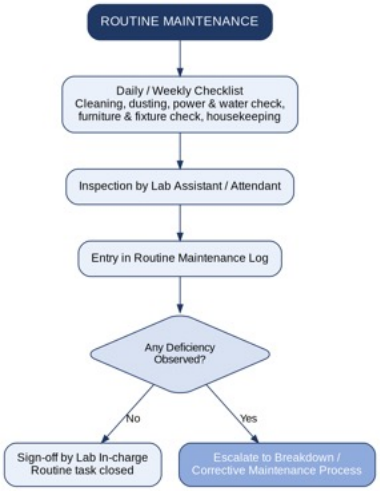


Fig. 2: Routine Maintenance Process Flow Chart

2. Preventive Maintenance

Preventive maintenance is carried out on a fixed, calendar-driven schedule rather than in response to a fault, with the explicit objective of minimising breakdowns before they occur. At the start of every academic year, the Lab In-charge/HOD prepares an annual Preventive M schedule for all laboratory equipment. As each due date is reached, the equipment is calibrated, serviced, or lubricated as per OEM guidelines, followed by a performance/trial test to confirm it is functioning within specification. The calibration certificate and PM log are updat date is scheduled — closing the loop into a continuously repeating cycle.

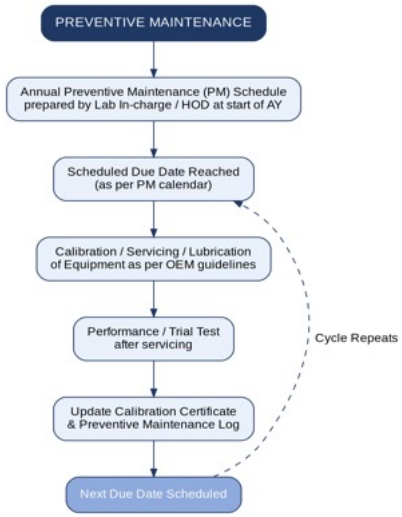


Fig. 3: Preventive Maintenance Process Flow Chart

3. Breakdown / Corrective Maintenance

Despite routine and preventive measures, equipment can still fail unexpectedly. The Departments breakdown/corrective maintenance process is triggered either by a routine inspection or by a newly discovered issue reported by faculty, staff, or students. Every issue is logge Register with the equipments asset ID, a description of the problem, and the date reported. The Lab In-charge then assesses the severity and complexity of the issue and routes it down one of two pathways:

- Minor Issue Pathway: Resolved internally by the technician or lab assistant, typically within 24 hours.
- Major Issue Pathway: Escalated to the HOD for OEM/vendor coordination and procurement approval where a replacement part or external expertise is required.

Both pathways converge into a common repair/replacement process, followed by verification and diagnostic testing to confirm optimal performance, and closure with a signed-off entry in the maintenance register recording the resolution notes and cost incurred. Critically, eve case feeds back into the Preventive Maintenance loop (Section 2) — the equipment re-enters routine scheduling and monitoring, so that lessons from each breakdown inform the ongoing PM calendar rather than being treated as a one-off fix.

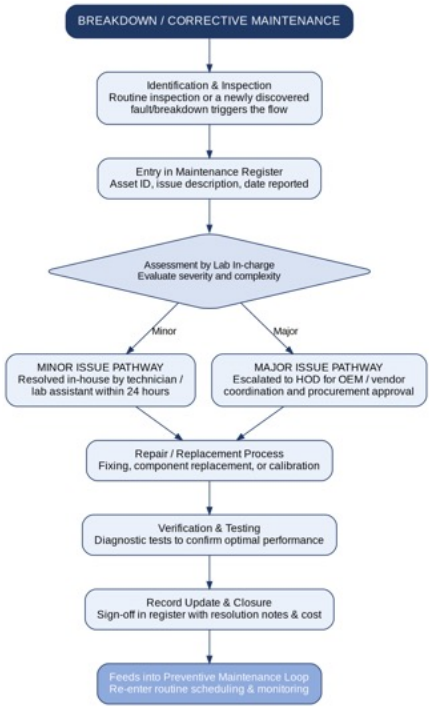


Fig. 4: Breakdown / Corrective Maintenance Process Flow Chart

4. Other Maintenance (AMC, Safety & Compliance, Civil/Ambiance)

Beyond equipment-level maintenance, the Department maintains three further streams of upkeep that are essential to a safe and pleasant working environment but do not fit the routine/preventive/breakdown cycle of individual instruments:

- Annual Maintenance Contracts (AMC): Critical and high-value equipment is covered under AMCs with OEMs/vendors, ensuring scheduled expert servicing and rapid response in case of failure.
- Safety & Compliance Checks: Periodic checks and statutory compliance activities — fire extinguisher refilling, electrical safety audits, earthing checks, and emergency evacuation drills — conducted by or in coordination with the Institutes Safety Committee.
- Civil & Ambiance Upkeep: Furniture repair, painting, upkeep of greenery, systematic waste management, and maintenance of notice boards/signage/display panels that keep the departments common areas and classrooms student-friendly and academically stimulatin

Each of these activities is recorded in its respective register (AMC file, Safety Register, or Ambiance Upkeep Log) and signed off by the HOD or the Safety Committee, ensuring accountability and traceability outside the equipment-specific maintenance cycle.

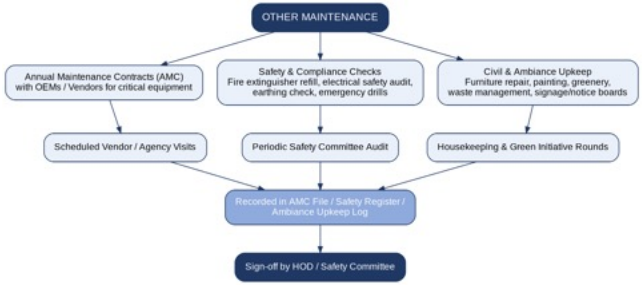


Fig. 5: Other Maintenance (AMC / Safety & Compliance / Civil-Ambiance) Process Flow Chart

Roles and Responsibilities

Clear ownership at each stage of the maintenance process ensures accountability and timely resolution:

Role	Responsibility
Lab Assistant / Attendant	Carries out daily/weekly routine checklist, housekeeping, and first-level inspection; logs observations in the Routine Maintenance Log.
Lab In-charge	Supervises routine maintenance, assesses severity of reported breakdowns, coordinates minor in-house repairs, and maintains the Maintenance and Stock Registers.
Technician	Executes minor repairs, component replacement, and calibration/servicing tasks within the laboratory.
Head of Department (HOD)	Approves procurement for major repairs/replacements, coordinates with OEMs/vendors and AMC agencies, and signs off on closure of major maintenance cases and Other Maintenance records.
Safety Committee	Conducts periodic safety and statutory compliance audits (fire, electrical, earthing) and signs off on the Safety Register.
Store / Stock In-charge	Maintains stock registers for consumables and spares, tracking usage and reorder levels.

7.4 Safety measures in laboratories (10)

Sr. No	Laboratory Name	Safety Measures
1	COMPUTER & MPMC LAB	Proper cable management, stabilizer, fire extinguishers, ergonomic seating, ventilation, MCB protection, first-aid kit
2	ELECTRICAL MEASUREMENT LAB	Calibration of instruments, proper handling of sensitive devices, safe storage, MCB protection, first-aid kit.
3	SWITCHGEAR & PROTECTION LAB	Ventilation, insulated probes, short-circuit protection, fire extinguishers, MCB protection, first-aid kit
4	POWER ELECTRONICS & IDC LAB	Ventilation, insulated probes, short-circuit protection, fire extinguishers, MCB protection, first-aid kit
5	ELECTRICAL MACHINE-II LAB	Emergency stop switches, overload protection, proper grounding, fire extinguishers (CO), MCB protection, first-aid kit
6	ELECTRICAL MACHINE-I LAB	Emergency stop switches, overload protection, proper grounding, fire extinguishers (CO), MCB protection, first-aid kit
7	HIGH VOLTAGE LAB	Grounding rods, trained supervision only, MCB protection, first-aid kit
8	CONTROL SYSTEM & NETWORK LAB	Relay protection systems, circuit breakers, insulated flooring, MCB protection, first-aid kit

7.5 Project laboratory/research laboratory /centre of excellence (20)

The Project Laboratory is a dedicated facility for final-year major projects, mini-projects, working models, prototype development, interdisciplinary activities, research, innovation, and startup-oriented work. The laboratory of working space with 10 workbenches, adequate electrical supply points, storage facilities for project components and models, and space for testing, assembly, demonstration, and project review.

Facilities available include electrical and electronic testing instruments, regulated power supplies, measuring instruments, computers with engineering software, basic fabrication and assembly tools, project storage, inter documentation and presentation. Students use the laboratory for circuit development, control and automation projects, renewable-energy applications, power-system models, electrical-machine-related projects, IoT-base validation. The laboratory also supports activities linked with the institutional Incubation Centre, where available, for mentoring, innovation, intellectual-property awareness, entrepreneurship, and startup development.

Impact: The facility supports the development of 30+ major projects and 50+ working models annually, encourages multidisciplinary teamwork, improves practical problem-solving and design capability, and promotes inn strengthens attainment of PO2 (Problem Analysis), PO3 (Design/Development of Solutions), PO4 (Investigation), PO5 (Modern Tool Usage), PO9 (Individual and Team Work), PO10 (Communication), PO11 (Project Man (Life-long Learning), while contributing to PSO attainment and graduate employability.

Table No. 7.5.1: List of project laboratory/research laboratory.

S.N.	Name of the Laboratory
1.	Project Laboratory Space: Approximately 66 sq. m. dedicated project workspace with 10 workbenches, electrical supply points, project storage, and display area. Facilities: Computers with engineering software, regulated power supplies, electrical/electronic measuring instruments, testing equipment, basic fabrication and assembly tools, internet access, documentation and presentation facilities. Utilization: Final-year B.E./B.Tech major projects, mini-projects, working models, prototypes, interdisciplinary projects, research activities, innovation and startup-oriented work. Impact: Supports 30+ major projects and 50+ models annually; improves design, testing, teamwork, communication, innovation, entrepreneurship, and employability. The facility is linked with Incubation Centre activities, where available, for mentoring and startup support.

8 CONTINUOUS IMPROVEMENT (80)

8.1 Actions taken based on the results of evaluation of each of the COs, POs & PSOs (40)

8.1.1 Actions Taken Based on the Results of Evaluation of the COs Attainment (20)

Course Code	NBA Code	Course Name	Target	Attained	Gap	Status	Recommended Action
BTBS101	C101	Engineering Mathematics- I	1.50	2.88	+1.38	Achieved (Strong)	Attainment comfortably exceeds target in "Engineering Mathematics- I". Continue current pedagogy (ICT-enabled teaching, problem-solving practice); periodically review CO-wise question distribution in CIE/ESE to sustain performance.
BTBS102	C102	Engineering Chemistry	1.50	3.00	+1.50	Achieved (Strong)	Attainment comfortably exceeds target in "Engineering Chemistry". Continue current pedagogy (ICT-enabled teaching, problem-solving practice); periodically review CO-wise question distribution in CIE/ESE to sustain performance.
BTES103	C103	Engineering Mechanics	1.50	3.00	+1.50	Achieved (Strong)	Attainment comfortably exceeds target in "Engineering Mechanics". Continue current pedagogy (ICT-enabled teaching, problem-solving practice); periodically review CO-wise question distribution in CIE/ESE to sustain performance.
BTES104	C104	Computer Programming in C	1.50	3.00	+1.50	Achieved (Strong)	Attainment comfortably exceeds target in "Computer Programming in C". Continue current pedagogy (ICT-enabled teaching, problem-solving practice); periodically review CO-wise question distribution in CIE/ESE to sustain performance.
BTES105L	C105	Workshop Practices	1.50	3.00	+1.50	Achieved (Strong)	Continue existing practical/continuous-assessment methodology for "Workshop Practices"; maintain rubric consistency across batches to sustain the current attainment.
BTBS107L	C106	Engineering Chemistry Lab	1.50	3.00	+1.50	Achieved (Strong)	Continue existing practical/continuous-assessment methodology for "Engineering Chemistry Lab"; maintain rubric consistency across batches to sustain the current attainment.
BTES108L	C107	Engineering Mechanics Lab	1.50	3.00	+1.50	Achieved (Strong)	Continue existing practical/continuous-assessment methodology for "Engineering Mechanics Lab"; maintain rubric consistency across batches to sustain the current attainment.
BTBS201	C108	Engineering Mathematics-II	1.50	1.26	-0.24	Not Achieved	Conduct focused revision/tutorial classes and increase weightage of CO-linked assignments in "Engineering Mathematics-II"; introduce short diagnostic tests before the ESE to identify weak COs early.
BTBS202	C109	Engineering Physics	1.50	2.04	+0.54	Achieved (Strong)	Attainment comfortably exceeds target in "Engineering Physics". Continue current pedagogy (ICT-enabled teaching, problem-solving practice); periodically review CO-wise question distribution in CIE/ESE to sustain performance.
BTES203	C110	Engineering Graphics	1.50	2.12	+0.62	Achieved (Strong)	Attainment comfortably exceeds target in "Engineering Graphics". Continue current pedagogy (ICT-enabled teaching, problem-solving practice); periodically review CO-wise question distribution in CIE/ESE to sustain performance.

BTHM204	C111	Communication Skills	1.50	1.12	-0.38	Not Achieved (Significant Gap)	Significant attainment gap in "Communication Skills": redesign the CIE assessment pattern with explicit CO-mapped questions, conduct mandatory remedial/bridge classes for the weak COs, introduce peer-tutoring/mentoring support, and review teaching pedagogy and ESE question-paper difficulty distribution for this course.
BTES205	C112	Energy and Environment Engineering	1.50	2.84	+1.34	Achieved (Strong)	Attainment comfortably exceeds target in "Energy and Environment Engineering". Continue current pedagogy (ICT-enabled teaching, problem-solving practice); periodically review CO-wise question distribution in CIE/ESE to sustain performance.
BTBS207L	C113	Engineering Physics Lab	1.50	3.00	+1.50	Achieved (Strong)	Continue existing practical/continuous-assessment methodology for "Engineering Physics Lab"; maintain rubric consistency across batches to sustain the current attainment.
BTES208L	C114	Engineering Graphics Lab	1.50	3.00	+1.50	Achieved (Strong)	Continue existing practical/continuous-assessment methodology for "Engineering Graphics Lab"; maintain rubric consistency across batches to sustain the current attainment.
BTHM209L	C115	Communication Skills Lab.	1.50	3.00	+1.50	Achieved (Strong)	Continue existing practical/continuous-assessment methodology for "Communication Skills Lab."; maintain rubric consistency across batches to sustain the current attainment.
BTES210S	C116	Seminar	1.50	2.80	+1.30	Achieved (Strong)	Continue existing practical/continuous-assessment methodology for "Seminar"; maintain rubric consistency across batches to sustain the current attainment.
BTBS301	C201	Engineering Mathematics-III	1.50	1.00	-0.50	Not Achieved (Significant Gap)	Significant attainment gap in "Engineering Mathematics-III": redesign the CIE assessment pattern with explicit CO-mapped questions, conduct mandatory remedial/bridge classes for the weak COs, introduce peer-tutoring/mentoring support, and review teaching pedagogy and ESE question-paper difficulty distribution for this course.
BTEEC302	C202	Electrical Machines - I	1.50	1.00	-0.50	Not Achieved (Significant Gap)	Significant attainment gap in "Electrical Machines - I": redesign the CIE assessment pattern with explicit CO-mapped questions, conduct mandatory remedial/bridge classes for the weak COs, introduce peer-tutoring/mentoring support, and review teaching pedagogy and ESE question-paper difficulty distribution for this course.
BTEEC303	C203	Electrical and Electronics Measurement	1.50	1.00	-0.50	Not Achieved (Significant Gap)	Significant attainment gap in "Electrical and Electronics Measurement": redesign the CIE assessment pattern with explicit CO-mapped questions, conduct mandatory remedial/bridge classes for the weak COs, introduce peer-tutoring/mentoring support, and review teaching pedagogy and ESE question-paper difficulty distribution for this course.

BTES305	C204	Engineering Material Science	1.50	1.04	-0.46	Not Achieved (Significant Gap)	Significant attainment gap in "Engineering Material Science": redesign the CIE assessment pattern with explicit CO-mapped questions, conduct mandatory remedial/bridge classes for the weak COs, introduce peer-tutoring/mentoring support, and review teaching pedagogy and ESE question-paper difficulty distribution for this course.
BTEEL306	C205	Electrical Machines-I Lab	1.50	2.92	+1.42	Achieved (Strong)	Continue existing practical/continuous-assessment methodology for "Electrical Machines-I Lab"; maintain rubric consistency across batches to sustain the current attainment.
BTEEL307	C206	Electrical and Electronics Measurement Lab	1.50	3.00	+1.50	Achieved (Strong)	Continue existing practical/continuous-assessment methodology for "Electrical and Electronics Measurement Lab"; maintain rubric consistency across batches to sustain the current attainment.
BTEEP308	C207	Mini Project-I	1.50	2.92	+1.42	Achieved (Strong)	Continue existing practical/continuous-assessment methodology for "Mini Project-I"; maintain rubric consistency across batches to sustain the current attainment.
BTEEC401	C209	Network Theory	1.50	1.20	-0.30	Not Achieved	Conduct focused revision/tutorial classes and increase weightage of CO-linked assignments in "Network Theory"; introduce short diagnostic tests before the ESE to identify weak COs early.
BTEEC402	C210	Power System	1.50	1.24	-0.26	Not Achieved	Conduct focused revision/tutorial classes and increase weightage of CO-linked assignments in "Power System"; introduce short diagnostic tests before the ESE to identify weak COs early.
BTEEC403	C211	Electrical Machine-II	1.50	1.20	-0.30	Not Achieved	Conduct focused revision/tutorial classes and increase weightage of CO-linked assignments in "Electrical Machine-II"; introduce short diagnostic tests before the ESE to identify weak COs early.
BTEEC404	C212	Analog and Digital Electronics	1.50	1.24	-0.26	Not Achieved	Conduct focused revision/tutorial classes and increase weightage of CO-linked assignments in "Analog and Digital Electronics"; introduce short diagnostic tests before the ESE to identify weak COs early.
BTEEPE405	C213	Advance Renewable Energy Sources	1.50	1.20	-0.30	Not Achieved	Conduct focused revision/tutorial classes and increase weightage of CO-linked assignments in "Advance Renewable Energy Sources"; introduce short diagnostic tests before the ESE to identify weak COs early.
BTEEL406	C214	Network Theory Lab	1.50	2.80	+1.30	Achieved (Strong)	Continue existing practical/continuous-assessment methodology for "Network Theory Lab"; maintain rubric consistency across batches to sustain the current attainment.
BTEEL407	C215	Power System Lab	1.50	2.80	+1.30	Achieved (Strong)	Continue existing practical/continuous-assessment methodology for "Power System Lab"; maintain rubric consistency across batches to sustain the current attainment.

BTEEL408	C216	Electrical Machine-II Lab	1.50	2.80	+1.30	Achieved (Strong)	Continue existing practical/continuous-assessment methodology for "Electrical Machine-II Lab"; maintain rubric consistency across batches to sustain the current attainment.
BTEEL409	C217	Analog and Digital Electronics lab	1.50	2.80	+1.30	Achieved (Strong)	Continue existing practical/continuous-assessment methodology for "Analog and Digital Electronics lab"; maintain rubric consistency across batches to sustain the current attainment.
BTEEC501	C301	Power System Analysis	1.50	1.00	-0.50	Not Achieved (Significant Gap)	Significant attainment gap in "Power System Analysis": redesign the CIE assessment pattern with explicit CO-mapped questions, conduct mandatory remedial/bridge classes for the weak COs, introduce peer-tutoring/mentoring support, and review teaching pedagogy and ESE question-paper difficulty distribution for this course.
BTEEC502	C302	Microprocessor and Microcontroller	1.50	1.00	-0.50	Not Achieved (Significant Gap)	Significant attainment gap in "Microprocessor and Microcontroller": redesign the CIE assessment pattern with explicit CO-mapped questions, conduct mandatory remedial/bridge classes for the weak COs, introduce peer-tutoring/mentoring support, and review teaching pedagogy and ESE question-paper difficulty distribution for this course.
BTEEC503	C303	Power Electronics	1.50	1.00	-0.50	Not Achieved (Significant Gap)	Significant attainment gap in "Power Electronics": redesign the CIE assessment pattern with explicit CO-mapped questions, conduct mandatory remedial/bridge classes for the weak COs, introduce peer-tutoring/mentoring support, and review teaching pedagogy and ESE question-paper difficulty distribution for this course.
BTEEPLE504	C304	Industrial Automation	1.50	1.00	-0.50	Not Achieved (Significant Gap)	Significant attainment gap in "Industrial Automation": redesign the CIE assessment pattern with explicit CO-mapped questions, conduct mandatory remedial/bridge classes for the weak COs, introduce peer-tutoring/mentoring support, and review teaching pedagogy and ESE question-paper difficulty distribution for this course.
BTEEOE505	C305	Electrical Safety	1.50	1.00	-0.50	Not Achieved (Significant Gap)	Significant attainment gap in "Electrical Safety": redesign the CIE assessment pattern with explicit CO-mapped questions, conduct mandatory remedial/bridge classes for the weak COs, introduce peer-tutoring/mentoring support, and review teaching pedagogy and ESE question-paper difficulty distribution for this course.
BTEEL507	C306	Power System Analysis Lab	1.50	3.00	+1.50	Achieved (Strong)	Continue existing practical/continuous-assessment methodology for "Power System Analysis Lab"; maintain rubric consistency across batches to sustain the current attainment.

BTEEL508	C307	Microprocessor and Microcontroller Lab	1.50	3.00	+1.50	Achieved (Strong)	Continue existing practical/continuous-assessment methodology for "Microprocessor and Microcontroller Lab"; maintain rubric consistency across batches to sustain the current attainment.
BTEEL509	C308	Power Electronics Lab	1.50	3.00	+1.50	Achieved (Strong)	Continue existing practical/continuous-assessment methodology for "Power Electronics Lab"; maintain rubric consistency across batches to sustain the current attainment.
BTEEPE510	C309	Mini project-II	1.50	3.00	+1.50	Achieved (Strong)	Continue existing practical/continuous-assessment methodology for "Mini project-II"; maintain rubric consistency across batches to sustain the current attainment.
BTEEP410	C310	Internship-II Evaluation	1.50	3.00	+1.50	Achieved (Strong)	Continue existing practical/continuous-assessment methodology for "Internship-II Evaluation"; maintain rubric consistency across batches to sustain the current attainment.
BTEEC601	C311	Switchgear and Protection	1.50	1.18	-0.32	Not Achieved (Significant Gap)	Significant attainment gap in "Switchgear and Protection": redesign the CIE assessment pattern with explicit CO-mapped questions, conduct mandatory remedial/bridge classes for the weak COs, introduce peer-tutoring/mentoring support, and review teaching pedagogy and ESE question-paper difficulty distribution for this course.
BTEEC602	C312	Electrical Machine Design	1.50	1.18	-0.32	Not Achieved (Significant Gap)	Significant attainment gap in "Electrical Machine Design": redesign the CIE assessment pattern with explicit CO-mapped questions, conduct mandatory remedial/bridge classes for the weak COs, introduce peer-tutoring/mentoring support, and review teaching pedagogy and ESE question-paper difficulty distribution for this course.
BTEEC603	C313	Control System Engineering	1.50	1.18	-0.32	Not Achieved (Significant Gap)	Significant attainment gap in "Control System Engineering": redesign the CIE assessment pattern with explicit CO-mapped questions, conduct mandatory remedial/bridge classes for the weak COs, introduce peer-tutoring/mentoring support, and review teaching pedagogy and ESE question-paper difficulty distribution for this course.
BTEEPE604	C314	Flexible AC Transmission System	1.50	1.18	-0.32	Not Achieved (Significant Gap)	Significant attainment gap in "Flexible AC Transmission System": redesign the CIE assessment pattern with explicit CO-mapped questions, conduct mandatory remedial/bridge classes for the weak COs, introduce peer-tutoring/mentoring support, and review teaching pedagogy and ESE question-paper difficulty distribution for this course.
BTEEOE605	C315	Power Plant Engineering	1.50	1.34	-0.16	Not Achieved	Conduct focused revision/tutorial classes and increase weightage of CO-linked assignments in "Power Plant Engineering"; introduce short diagnostic tests before the ESE to identify weak COs early.

BTEEL606	C316	Switchgear and Protection Lab	1.50	3.00	+1.50	Achieved (Strong)	Continue existing practical/continuous-assessment methodology for "Switchgear and Protection Lab"; maintain rubric consistency across batches to sustain the current attainment.
BTEEL607	C317	Electrical Machine Design Lab	1.50	2.80	+1.30	Achieved (Strong)	Continue existing practical/continuous-assessment methodology for "Electrical Machine Design Lab"; maintain rubric consistency across batches to sustain the current attainment.
BTEEL608	C318	Control System Engineering Lab	1.50	3.00	+1.50	Achieved (Strong)	Continue existing practical/continuous-assessment methodology for "Control System Engineering Lab"; maintain rubric consistency across batches to sustain the current attainment.
BTEEM609	C319	Seminar	1.50	2.20	+0.70	Achieved (Strong)	Continue existing practical/continuous-assessment methodology for "Seminar"; maintain rubric consistency across batches to sustain the current attainment.
BTEEC701	C401	High Voltage Engineering	1.50	1.26	-0.24	Not Achieved	Conduct focused revision/tutorial classes and increase weightage of CO-linked assignments in "High Voltage Engineering"; introduce short diagnostic tests before the ESE to identify weak COs early.
BTEEC702	C402	Power System Operation & Control	1.50	1.40	-0.10	Not Achieved	Conduct focused revision/tutorial classes and increase weightage of CO-linked assignments in "Power System Operation & Control"; introduce short diagnostic tests before the ESE to identify weak COs early.
BTEEPE703	C403	Electrical Utilization	1.50	1.26	-0.24	Not Achieved	Conduct focused revision/tutorial classes and increase weightage of CO-linked assignments in "Electrical Utilization"; introduce short diagnostic tests before the ESE to identify weak COs early.
BTEEOE704	C404	Mechatronics	1.50	1.26	-0.24	Not Achieved	Conduct focused revision/tutorial classes and increase weightage of CO-linked assignments in "Mechatronics"; introduce short diagnostic tests before the ESE to identify weak COs early.
BTEEOE705	C405	Electric and Hybrid Electric Vehicles	1.50	1.40	-0.10	Not Achieved	Conduct focused revision/tutorial classes and increase weightage of CO-linked assignments in "Electric and Hybrid Electric Vehicles"; introduce short diagnostic tests before the ESE to identify weak COs early.
BTEEL707	C406	High Voltage Engineering Lab	1.50	3.00	+1.50	Achieved (Strong)	Continue existing practical/continuous-assessment methodology for "High Voltage Engineering Lab"; maintain rubric consistency across batches to sustain the current attainment.
BTEEM708	C407	Inhouse Project Part-I /Miniproject-III Internship-III Evaluation	1.50	3.00	+1.50	Achieved (Strong)	Continue existing practical/continuous-assessment methodology for "Inhouse Project Part-I /Miniproject-III Internship-III Evaluation"; maintain rubric consistency across batches to sustain the current attainment.
BTEEP610	C408	Internship-III Evaluation	1.50	2.40	+0.90	Achieved (Strong)	Continue existing practical/continuous-assessment methodology for "Internship-III Evaluation"; maintain rubric consistency across batches to sustain the current attainment.

BTEEPE801	C409	NPTEL online courses	1.50	1.40	-0.10	Not Achieved	Review the assessment rubric for "NPTEL online courses"; strengthen structured evaluation (rubric-based viva, timely completion tracking, mentor sign-off) to close the attainment gap.
BTEEP802	C410	Inhouse Project Part-II /Internship in Industry.	1.50	3.00	+1.50	Achieved (Strong)	Continue existing practical/continuous-assessment methodology for "Inhouse Project Part-II /Internship in Industry."; maintain rubric consistency across batches to sustain the current attainment.

8.1.2 Actions Taken Based on the Results of Evaluation of the POs/PSOs Attainment (20)

Rubric for setting the Targets of PO attainment based on the average mapping of program POs with the courses as

- For the POs mapping with more than 60% of courses the target is 1.8,
- For the POs mapping with less than 60% courses the target is 1.5

Programme Outcomes (POs)

PO1 — Engineering Knowledge	Target: **1.8**	Attained: **2.07**	**Target Achieved**

Actions for Improvement:

1. Continue extra classes and fundamentals-reinforcement sessions; document impact through semester-wise pre/post assessment comparisons.

PO2 — Problem Analysis	Target: **1.8**	Attained: **1.93**	**Target Achieved**

Actions for Improvement:

1. Continue analytical-teaching approach and case-study discussions; add a dedicated problem-analysis CIE component to strengthen the attainment buffer.

PO3 — Design/Development of Solutions	Target: **1.5**	Attained: **1.5**	**Target Achieved (At Target — No Buffer)**

Actions for Improvement:

1. Since attainment is exactly at target with no margin, increase design-stage rubric weightage and add an additional design-review checkpoint per major project.
2. Introduce a mandatory design-alternatives comparison requirement in final-year design projects.
3. Expand access to NPTEL/value-added design courses to at-risk students identified through mid-project reviews.

PO4 — Conduct Investigations of Complex Problems	Target: **1.5**	Attained: **1.6**	**Target Achieved**

Actions for Improvement:

1. Continue technical events and workshops; add a structured "investigation methodology" report component to further build the attainment buffer.

PO5 — Modern Tool Usage	Target: **1.5**	Attained: **1.64**	**Target Achieved**

Actions for Improvement:

1. Continue individual-system access and open-source tool sessions; maintain the simulation-vs-hardware validation exercises already in place.

PO6 — The Engineer and Society	Target: **1.5**	Attained: **1.52**	**Target Achieved (Marginal)**

Actions for Improvement:

1. Formalize safety-drill and social-outreach activities into graded/logged components rather than informal participation, to secure a stronger margin.
2. Track community-need-linked projects (energy, water, waste management) with measurable outcome indicators each semester.

PO7 — Environment and Sustainability	Target: **1.5**	Attained: **1.51**	**Target Achieved (Marginal)**

Actions for Improvement:

1. Formalize sustainability-project outcomes with measurable indicators (energy/water savings, waste reduction) and a minimum participation quota per section.
2. Expand industrial visits and internships focused on renewable energy and green manufacturing to build a stronger attainment buffer.

PO8 — Ethics	Target: **1.5**	Attained: **1.42**	**Target Not Achieved**

Actions for Improvement:

1. Introduce a graded ethics assessment (quiz or case-study report) in at least one core course per semester, rather than relying only on seminars.
2. Formalize the "Code of Conduct" pledge with signed documentation, tied to lab/project participation and periodically reviewed.
3. Increase the frequency of ethics-focused debates/poster competitions with mandatory participation across all sections.

PO9 — Individual and Team Work	Target: **1.5**	Attained: **1.48**	**Target Not Achieved (see note)**

Actions for Improvement:

1. Verify and correct the attainment classification: the attained value (1.48) is below the target (1.5), so this should be recorded as "Target Not Achieved."
2. Strengthen peer-evaluated group-project components with clearer, more discriminating team-contribution rubrics.
3. Introduce team-building and leadership workshops at least once per semester on a formal, scheduled basis.

PO10 — Communication	Target: **1.5**	Attained: **1.48**	**Target Not Achieved (see note)**

Actions for Improvement:

1. Verify and correct the attainment classification: the attained value (1.48) is below the target (1.5), so this should be recorded as "Target Not Achieved."
2. Introduce a mandatory oral-presentation component in at least two core courses per semester to build measurable improvement.
3. Expand technical-writing workshops with a graded report-writing assignment each semester.

PO11 — Project Management and Finance	Target: **1.5**	Attained: **1.64**	**Target Achieved**

Actions for Improvement:

1. Continue project-management seminars; add mini-project budgeting exercises in at least one core course per semester for additional buffer.

PO12 — Life-long Learning	Target: **1.5**	Attained: **1.64**	**Target Achieved**

Actions for Improvement:

1. Continue MOOC/certification promotion; introduce a tracking dashboard for completion rates to keep the initiative outcome-driven.

Programme Specific Outcomes (PSOs)

PSO1 — Power System and Electrical Equipment: Apply the principles of engineering to analyse, design and maintain power systems and electrical equipment.	Target: **1.8**	Attained: **2.01**	**Target Achieved**

Actions for Improvement:

1. Update the listed actions to reference EE-specific simulation/design tools (MATLAB/Simulink, ETAP, PSCAD/MiPower for power-system studies).
2. Continue capstone projects on power systems/electrical equipment design; maintain industry-MoU-based internships to sustain the strong attainment.

PSO2 — Automation and Sustainable Technologies: Design, implement, and evaluate automation and sustainable-technology solutions for real-world electrical engineering applications.	Target: **1.8**	Attained: **1.49**	**Target Not Achieved (Largest Gap)**

Actions for Improvement:

1. Introduce a dedicated Automation & Sustainable Technologies elective/module (PLC/SCADA, renewable energy systems) with a mandatory hands-on lab component.
2. Redirect industry collaboration specifically toward automation and sustainable-technology projects (smart grid, EV charging, solar integration) rather than generic industry linkages.
3. Introduce a mandatory mini-project each semester requiring students to design or implement one automation or sustainability-linked solution.
4. Track and report PSO2-specific outcomes (number of automation/sustainability projects completed) each semester to monitor gap closure.

PSO3 — Professional Competency and Lifelong Learning: Demonstrate professional competency and commitment to lifelong learning in the field of Electrical Engineering.	Target: **1.8**	Attained: **1.97**	**Target Achieved**

Actions for Improvement:

1. Continue hackathon/incubation and professional-competency initiatives; monitor higher-studies and certification completion rates as a leading indicator.

8.2 Academic Audit and actions taken thereof during the period of Assessment (15)

The academic audit framework of IQAC provides a comprehensive, weighted scoring model designed to evaluate departmental performance across multiple dimensions. Its purpose is to ensure accountability, transparency, and continuous improvement in higher education ir combining quantitative scoring with qualitative compliance checks, the framework creates a balanced mechanism for assessing academic quality.

1. Weighted Scoring Model

The audit system is structured around eight major sections, each assigned a specific weight to reflect its importance:

- Department Profile (5%) – Vision, mission, organizational structure, and program offerings.
- Academic Audit (30%) – Curriculum design, teaching-learning practices, assessment methods, and outcome-based education (OBE) mapping.
- Faculty & Staff Audit (20%) – Faculty strength, qualifications, professional development, publications, and consultancy.
- Student Audit (15%) – Enrollment, academic performance, placement, participation, and grievance redressal.
- Infrastructure Audit (15%) – Classrooms, laboratories, library, computing facilities, amenities, and sustainability initiatives.
- Research & Innovation Audit (10%) – Projects, patents, collaborations, student research, and entrepreneurship.
- Governance & Compliance Audit (3%) – Committees, policy adherence, documentation, and stakeholder feedback.
- Sustainability & Social Responsibility Audit (2%) – Waste management, energy conservation, ethical sourcing, and SDG alignment.

Weighted Scoring Model for Departmental Audit

Section	Weight (%)	Key Parameters	Scoring Method
A. Department Profile	5%	Vision/Mission, Programs, Organizational chart	Average of parameter scores × weight
B. Academic Audit	30%	Curriculum, Teaching-Learning, Assessment, OBE mapping	Average × weight
C. Faculty & Staff Audit	20%	Faculty strength, qualifications, FDPs, publications, consultancy	Average × weight
D. Student Audit	15%	Enrollment, performance, placement, participation, grievance redressal	Average × weight
E. Infrastructure Audit	15%	Classrooms, labs, library, computing, amenities, green campus	Average × weight
F. Research & Innovation Audit	10%	Projects, patents, collaborations, student research, entrepreneurship	Average × weight
G. Governance & Compliance Audit	3%	Committees, policy compliance, documentation, stakeholder feedback	Average × weight
H. Sustainability & Social Responsibility Audit	2%	Waste management, energy conservation, ethical sourcing, SDG alignment	Average × weight

Formula for Overall Score

- **Each parameter scored 1–5 (Poor → Excellent).**
- **Section average = mean of parameter scores.**
- **Multiply by section weight to get weighted contribution.**
- **Sum across all sections = Final Department Audit Score (out of 5).**

SCORE

Sr. No	Section	Mean	Score

1.	Profile	4.0	**Overall Score} =(4.0x0.05)+ (4.2x0.30)+ (3.8x0.20)+ (3.5x0.15)+(4.0x0.15)+ (3.2x0.10)+ (4.5x0.03) + (3.0x0.02) =0.20+1.26+0.76+0.53+0.60+ 0.32+0.14+0.06=3.87**
2.	Academic Audit	4.2	
3.	Faculty & Staff	3.8	
4.	Student Audit	3.5	
5.	Infrastructure	4.0	
6.	Research & Innovation	3.2	
7.	Governance	4.5	
8.	Sustainability	3.0	

Suppose a department scores: = 3.87 / 5 (≈ 77%) → "Good"

Suggested Rating Scale

- **4.5 – 5.0 (90–100%) → Excellent**
- **4.0 – 4.49 (80–89%) → Very Good**
- **3.5 – 3.99 (70–79%) → Good**
- **3.0 – 3.49 (60–69%) → Satisfactory**
- **< 3.0 (<60%) → Needs Improvement**

2. Departmental Audit Checklist

The framework includes a detailed checklist for each section, covering compliance status (✓, ✕, Partial), scoring, and remarks/action plans. This ensures:

- Evidence-based evaluation – Departments must provide documentation such as course files, lab manuals, research publications, and committee records.
- Corrective action planning – Remarks highlight gaps and propose timelines for improvement.
- Stakeholder involvement – Feedback from students, faculty, and external experts is integrated into the audit cycle.

Departmental Audit Checklist

Section	**Parameter**	**Compliance Status (✓/ ✕/Partial)**	**Score (1–5)**	**Remarks/Action Plan**
A. Department Profile	Vision & Mission aligned with Institution			
	BOS Documentation			
	Decentralization and Portfolio execution			

B. Academic Audit	Curriculum updated as per AICTE/UGC/NBA norms			
	Course files and Lab manuals prepared, reviewed by HOD and Team			
	Industry/research inputs integrated			
	Innovative teaching practices adopted			
	Course Coverage and Corrective Actions			
	Student feedback mechanism functional			
	Slow Advanced Learners support			
	Outcome-based education (OBE) mapping, Attainment and Action Taken			
C. Faculty & Staff Audit	Faculty strength meets AICTE norms			
	Faculty qualifications (PhD/M.Tech)			
	FDPs/Workshops attended			
	Research publications (Scopus/UGC Care)			
	Consultancy/Projects undertaken			
D. Student Audit	Enrollment vs. sanctioned intake			
	Pass percentage & CGPA distribution			
	Placement & higher education statistics			
	Participation in co/extra-curricular activities			
	Attendance, Mentoring			
	Grievance redressal mechanism			
E. Infrastructure Audit	ICT-enabled classrooms			
	Laboratory equipment & calibration			
	Library resources (books, journals, e-resources)			
	Computing facilities (student-PC ratio)			
	Hostel & student amenities			
	Green campus initiatives			

F. Research & Innovation Audit	Funded projects (Govt/Industry)			
	Patents filed/granted			
	Research collaborations			
	Student research projects			
	Entrepreneurship/Innovation cell activities			
G. Governance & Compliance Audit	Departmental committees functional (BoS, IQAC)			
	Policy compliance (UGC/AICTE/NAAC/NBA)			
	Documentation & record keeping			
	Stakeholder feedback integration			
H. Sustainability & Social Responsibility Audit	Waste management practices			
	Energy conservation initiatives			
	Ethical sourcing in labs/workshops			
	Extension/community engagement			
	Alignment with SDGs			

3. Process Flow

The audit process follows a structured cycle:

1. Preparation – Departments compile data and evidence.
2. Evaluation – Audit committees assess compliance and assign scores.
3. Feedback – Strengths and weaknesses are documented with recommendations.
4. Implementation – Departments act on corrective measures.
5. Follow-up – IQAC monitors progress and ensures continuous improvement.

4. Continuous Improvement

The framework emphasizes iterative refinement. By linking audit outcomes to action plans, institutions can:

- Update curricula in line with Regulatory Norms.
- Enhance faculty development through FDPs and research engagement.
- Improve student outcomes via mentoring, placements, and skill-building.
- Strengthen infrastructure and sustainability practices.
- Foster innovation through projects, patents, and entrepreneurship.

8.3 Improvement in Faculty Qualification/Contribution (15)

Academic Performance	CAYm1 (2024-25)	CAYm2 (2023-24)	CA
No. of faculty members with Ph.D. degree	1.00	1.00	0.
No. of publications in peer reviewed journals	0.00	0.00	0.
No. of publications in conferences	0.00	10.00	0.

8.4 Improvement in Academic Performance (10)

Academic Performance	CAYm1 (2024-25)	CAYm2 (2023-24)
Academic Performance Index (API) of the First-Year Students in the Program (Refer to section 4.3)	5.21	5.83
Academic Performance Index (API) of the Second-Year Students in the Program (Refer to section 4.4)	5.32	5.56
Academic Performance Index (API) of the Third-Year Students in the Program (Refer to section 4.5)	6.32	6.02

9 STUDENT SUPPORT AND GOVERNANCE (120)

9.1 First Year Student-Faculty Ratio (FYSFR) (5)

Please provide First year faculty information considering load

Name of the faculty member	PAN No.	Qualification	From Engineering Courses	Date of Receiving Highest Degree	Area of Specialization	Designation	Date of joining	Currently Associated (Yes / No)	Nature Of Association / Contract)
Pravin Vinayak	AIEPP1819J	M.Sc	No	26/05/1992	Chemistry	Associate Professor	25/01/2000	Yes	Regular
Dr. Nitin Namd	AHIPB5826E	Ph.D	No	18/11/2011	Chemistry	Professor	19/08/2011	Yes	Regular
Dr. Vijaykumar	ALNPM7434J	Ph.D	No	04/08/2017	M B A	Associate Professor	02/03/2010	Yes	Regular
Dr.Saroj Nitin E	AMTPB9775A	Ph.D	No	02/07/2020	Physics	Professor	01/06/2007	Yes	Regular
Sanjay Megha	AOOPC3039B	M.Sc	No	18/11/1992	Chemistry	Assistant Professor	15/07/2008	Yes	Regular
Trushali Ratnal	GBMPS2993K	M.Sc	No	05/06/2013	Mathematics	Assistant Professor	22/06/2021	Yes	Regular
Narhar Ganpat	ADTPC1422G	M.E.	No	03/10/2007	Mechanical	Associate Professor	04/08/1999	Yes	Regular
Nilima Atul Bar	APDPB8310E	M.Sc	No	28/01/2006	Mathematics	Assistant Professor	01/01/2016	Yes	Regular
Pooja Balu Wa	AGOPW0069R	M.Tech	Yes	22/02/2024	Computer	Assistant Professor	12/01/2024	Yes	Regular
Pankaj Ganpat	ALOPP0451H	M.E.	No	19/10/2010	Mechanical	Assistant Professor	26/06/2023	Yes	Regular
Shraddha Ram	AGRPW3115F	M.Sc	No	10/03/2022	Mathematics	Assistant Professor	03/10/2022	Yes	Regular
Vishal Ramesh	DABPB0026H	M.Sc	No	17/02/2023	Mathematics	Assistant Professor	03/01/2024	Yes	Regular
Gauri Dilip Zop	DBXTP0448J	M.E.	Yes	02/06/2014	ETC	Assistant Professor	16/07/2007	No	Regular
Subhangi Nites	CNTPM2682N	M.E.	Yes	16/01/2017	Electrical Engineering	Assistant Professor	16/01/2019	Yes	Regular
Dr.Anilkumar D	AFJPV3043A	M.E. and Ph.D.	Yes	23/06/2023	CSE	Assistant Professor	28/01/2011	Yes	Regular
Jayashri Jagan	BGMPP9691M	M.Tech	Yes	30/09/2019	Computer Science and Engineering	Assistant Professor	16/12/2019	Yes	Regular
Komal Sunil Pa	EAVPP4480C	M.Tech	Yes	17/08/2023	Computer	Assistant Professor	01/08/2024	Yes	Regular
Khushali Rajes	GAMPB3308F	MA	No	28/06/2023	English	Assistant Professor	11/08/2023	Yes	Regular
Poonam Panka	ANZPN0190L	M.Sc	No	15/05/2014	Mathematics	Assistant Professor	14/07/2024	Yes	Regular
Bhalchandra V	CZKPS5816H	M.E.	Yes	06/01/2023	Mechanical Engineering	Assistant Professor	25/08/2025	Yes	Regular

Dr.Asif Khan Aj	BBAPK9961L	Ph.D	No	26/05/2012	sports	Assistant Professor	28/07/2011	No	Regular
Ruchita Yash F	ASBPB5241M	M.E.	No	06/01/2017	E TC Engg	Assistant Professor	01/08/2024	No	Regular
Dr.Lalita Bajira	BDQPP9812F	M.Tech and Ph.D.	No	16/08/2024	Civil	Associate Professor	21/01/2009	Yes	Regular
Samyekratna D	CRAPK1160J	M.Sc	No	17/02/2023	Physics	Assistant Professor	25/08/2025	Yes	Regular
Pravin Bhikulal	BXXPS8141K	M.E.	No	24/10/2016	Mechanical	Assistant Professor	11/08/2025	Yes	Regular

Year	Sanctioned intake of all UG programs (S4)	No. of required faculty (RF4= S4/20)	No. of faculty members in Basic Science Courses & Humanities and Social Sciences including Management courses (NS1)	No. of Scien
2023-24(CAYm2)	360	18	13	4
2024-25(CAYm1)	360	18	16	5
2025-26(CAY)	360	18	16	6

9.2 Mentoring system (5)

Institute Marks : 5.00

A. Institute Level Mentoring System

The institution has established a robust and structured mentoring system termed as Local Guardian (LG) System to ensure the academic progress, emotional well-being, discipline, and holistic development of students.

Objectives

The system functions through a Mentor and Class teacher model, wherein faculty members act as mentors and guide students continuously throughout the academic journey. This mechanism promotes mentees attention, early identification of issues, and timely intervention. The Local Guardian System aims to

- Monitor students' academic performance and attendance regularly
- Identify students' strengths, weaknesses, and learning gaps
- Provide academic, personal, emotional, and career guidance
- Enhance parent–teacher–student interaction
- Reduce absenteeism and improve retention
- Prepare students for career readiness and employability and all-round personality development

Mentor System Allocation Structure: The Institute has implemented a structured Mentor System to provide continuous academic, personal, and career guidance to students in alignment with Outcome-Based Education (OBE). In the first year, a faculty mentor is assigned to a group of 1:20 students (Minimum) to support not only academic orientation but overall development for employment.

From the second year onwards, departmental faculties take over as mentors and continue mentoring the same group until graduation, ensuring consistent monitoring, personalized guidance, and holistic development. In the final year, the system is further strengthened through alumni involvement, offering career guidance, placement support, industry exposure, and professional networking.

Multi-Level Mentoring Mechanism: The Institute follows a multi-level mentoring system involving Faculty Members, the Head of the Department, the Head of the Institution, and alumni to ensure comprehensive academic, personal, and professional support for students.

Each class is assigned a Class Teacher responsible for maintaining detailed student profiles, regularly monitoring attendance and academic progress, and identifying areas requiring support or intervention. The Class Teacher/Mentor also acts as a key link between the institution and parents through regular communication, while providing counselling and continuous mentoring to guide students in their academic, personal, and professional development.

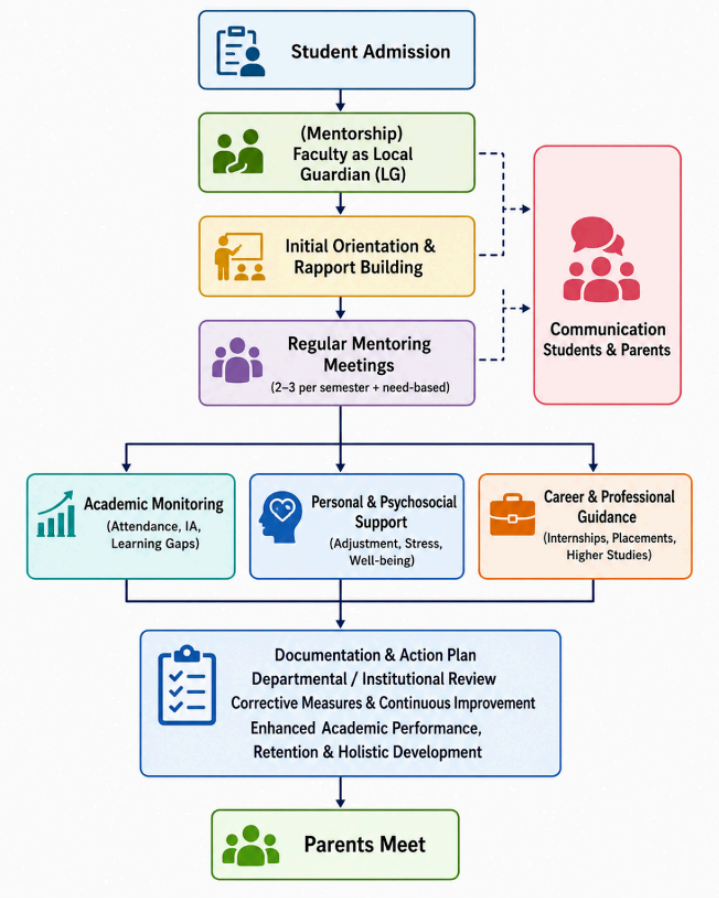


Figure 9.2.1: Structure and Process of the Local Guardian Mentoring System

Each student is assigned a faculty member as a Mentor who provides continuous academic and personal support, ensuring personalized guidance, early identification of issues, and timely intervention throughout the academic year (Refer Figure 9.2.1: Local Guardian System Framework).

Mentoring Process and Record: Each Mentor maintains student's record which includes:

- Semester-wise attendance details
- Test marks and End Semester Examination (ESE) results
- Mentoring meeting minutes & Parent communication/calling records

Roles and Responsibilities of Mentor: The mentor acts as the primary link between students, parents, and the Institute, supporting academic progress and personal well-being. The mentor maintains records of attendance and academic performance, conducts regular one-to-one mentoring, identifies academic or personal issues through continuous monitoring, communicates with parents, and ensures timely intervention through institutional support systems when required.

Frequency and Mode of Mentoring: Structured mentoring is implemented through regular and need-based interactions to ensure continuous academic monitoring, personalized support, and timely intervention.

- Frequency: Fortnightly.
- Need-Based Support: Additional mentoring sessions are arranged for slow learners, frequently absent students, and those facing academic or personal challenges.
- Physical Mode: One-to-one and group mentoring sessions.
- Online Mode: Telephonic/WhatsApp communication, and virtual meetings.

Parent Involvement and Monitoring: The Institute ensures continuous parent–faculty engagement through structured meetings and digital communication for effective monitoring of student progress.

- Semester-wise Parent–Teacher Meetings are conducted to discuss academic performance and overall development.
- Proactive mentor communication with parents is carried out in cases of absenteeism, poor performance or behavioral issues.

Career, Skill Development and Professional Mentoring: The objective is to strengthen industry–academia collaboration through MoUs and integrate industry-relevant skills into the academic framework. This initiative aims to enhance employability, career readiness, and global exposure in alignment with Outcome-Based Education (OBE).

- A comprehensive Student Orientation and Induction Program is conducted at the beginning of Program & to support smooth transition from school to college.
- Students are introduced to academic regulations, code of conduct, institutional facilities, support systems, and career opportunities.
- Employability Skill Development Program (ESDP): Semester-wise aptitude training and online assessments through 'Gyanteerth'.
- The Institute has active MoUs with industries, training organizations, to strengthen industry–academia collaboration under OBE.
- Alumni Mentorship Program: Career guidance, placement preparation, and industry exposure through alumni support.

A. Effectiveness of the Mentoring System

The mentoring system supports Outcome-Based Education (OBE) through continuous academic, career, and personal guidance with timely identification of learning gaps and remedial actions. It enhances student performance, motivation, ethical values, and employability, leading to improved PO-PSO attainment.

- Improved Academic Performance: Continuous monitoring and personalized mentoring have enhanced internal and end-semester results.
- Reduced Absenteeism: Proactive tracking, and parent communication have minimized absenteeism.
- Early Identification of At-Risk Students: Timely detection of academic and personal issues enables prompt remedial and counseling support.
- Better Retention and Progression: Sustained mentoring has reduced dropouts and improved semester-wise progression.
- Stronger Parent–Institute Connect: Regular interactions and digital communication have increased transparency and involvement.
- Enhanced Confidence and Motivation: One-to-one guidance has fostered positive academic attitude and self-confidence.
- Holistic Development: Integrated academic, emotional, and co-curricular support promotes all-round growth.
- Improved Career Readiness: Alumni mentoring, ESDP (Entrepreneurship Skill Development Program), and industry MoUs strengthen employability skills.
- Psychological Well-Being: Institutional and professional counselling support student mental health.

9.3 Feedback Analysis (10)

9.3.1 Feedback on Teaching and Learning Process and Corrective Measures Taken, if any (10)

Institute Marks : 10.00

At Godavari College of Engineering, Jalgaon, a systematic and structured feedback mechanism is implemented to continuously improve the Teaching and Learning Process (TLP). The institution ensures that feedback is collected, analyzed, and utilized effectively for quality enhancement and academic excellence.

Feedback Collection Process

The institute collects feedback from multiple stakeholders, primarily focusing on **students**, to evaluate the effectiveness of teaching methodologies, course delivery, and overall learning experience.

- **Mode of Collection:** Feedback is collected through either online (Google Forms) and offline (printed forms) methods.
- **Frequency:** Feedback is collected at the end-semester.
- **Parameters Covered:** The feedback form includes structured questions on:
    - Subject knowledge and preparedness of faculty
    - Clarity of explanation and communication skills
    - Coverage of syllabus as per lesson plan
    - Use of ICT tools and teaching aids
    - Conduct of practical sessions and lab support
    - Interaction and doubt-solving ability
    - Evaluation and feedback methods
- **Student Participation:**
  On average, **85 % to 90%** of students participate in the feedback process, ensuring reliable and representative data.

Feedback Analysis Process

The collected feedback is systematically analyzed at department.

- Feedback responses are quantified using a rating scale (e.g., 1–5).
- The average score for each faculty and subject is calculated.
- Comparative analysis is carried out across semesters to identify trends.
- Faculty members are categorized based on performance levels (e.g., Excellent, Good, and Needs Improvement).

The analyzed data is reviewed by the **Head of Department (HOD)**, and findings are communicated to the respective faculty members for further improvement.



Figure 9.3.1 Feedback Analysis Process Flow Chart

STUDENT FEEDBACK FORM ON TEACHING–LEARNING PROCESS (TLP)

STUDENT FEEDBACK FORM ON TEACHING–LEARNING PROCESS (TLP)

GF's Godavari College of Engineering, Jalgaon

A. General Information

Academic Year: _____ Class: _____
Semester: _____ Date: _____
Department: _____
Course Name: _____
Course Code: _____
Faculty Name: _____

B. Instructions

- Please tick (✓) the appropriate option.
- Your feedback is confidential and will be used only for academic improvement.
- Rating Scale:

Rating	Description
5	Excellent
4	Very Good
3	Good
2	Average
1	Poor

C. Feedback on Teaching–Learning Process

Sr. No.	Parameter	5	4	3	2	1
1	Teacher's subject knowledge and preparation	☐	☐	☐	☐	☐
2	Clarity of explanation and communication skills	☐	☐	☐	☐	☐
3	Coverage of syllabus as per lesson plan	☐	☐	☐	☐	☐
4	Ability to explain concepts with examples	☐	☐	☐	☐	☐
5	Use of ICT tools (PPT, videos, smart board, etc.)	☐	☐	☐	☐	☐
6	Interaction and encouragement for questions	☐	☐	☐	☐	☐
7	Conduct of tutorials / problem-solving sessions	☐	☐	☐	☐	☐
8	Effectiveness of practical/laboratory sessions	☐	☐	☐	☐	☐
9	Timely completion of syllabus	☐	☐	☐	☐	☐
10	Fairness in evaluation and feedback on performance	☐	☐	☐	☐	☐
11	Availability of teacher for doubt solving	☐	☐	☐	☐	☐
12	Overall effectiveness of teaching	☐	☐	☐	☐	☐

D. Course Outcomes (COs) Attainment

Sr. No.	Statement	Yes	No
1	The course helped me achieve the stated learning outcomes	☐	☐
2	The course content is relevant to industry/application	☐	☐

E. Open-Ended Feedback

✓ What are the strengths of the course and teaching?
✓ Suggestions for improvement:
✓ Any additional comments:

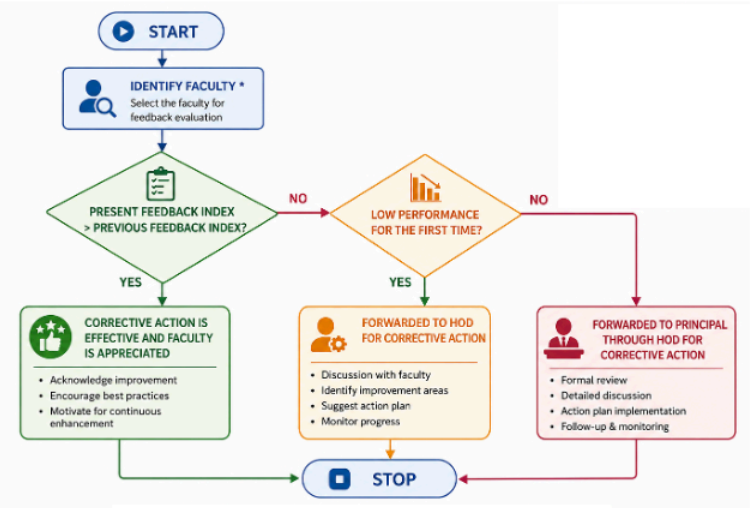
F. Student Details (Optional)

(Name is optional to maintain confidentiality)

Name (Optional): _____ Roll No.: _____

Corrective Measures and Reward System

Based on feedback analysis, the institute takes both corrective actions and appreciation measures to enhance the quality of teaching.



Corrective Measures:

- Faculty members with lower feedback scores are:
  - Counseled by HOD and senior faculty
  - Encouraged to attend Specific Trainings and Faculty Development Programs (FDPs)
  - Advised to improve teaching methodologies and use of ICT tools
  - Provided with peer mentoring and classroom observation support
- Specific issues identified (e.g., slow syllabus coverage, lack of clarity) are addressed through:
  - Additional/remedial classes
  - Revision sessions and doubt-clearing lectures
  - Improved lesson planning and monitoring
- During the assessment period, a total of appropriate corrective measures were implemented based on feedback analysis.

Reward and Recognition:

- Faculty members receiving consistently high feedback scores are:
  - Appreciated at departmental/institutional level.
  - Considered for Appreciation Certificates.
  - Given opportunities to handle advanced courses and responsibilities.

Impact of Feedback System

The feedback mechanism has led to significant improvements in the teaching-learning environment:

- Improvement in overall student satisfaction levels
- Enhanced teaching effectiveness and student engagement
- Increased use of ICT-enabled teaching methods
- Better academic performance and result improvement
- Strengthened faculty accountability and continuous improvement culture

The feedback system at GF's Godavari College of Engineering, Jalgaon is transparent, data-driven, and outcome-oriented. It plays a crucial role in maintaining and enhancing the quality of the Teaching and Learning Process. The systematic analysis and timely corrective measures ensure continuous academic improvement.

9.3.2 Feedback on Academic Facilities (10) Institute Marks : 10.00

At Godavari College of Engineering, Jalgaon, a well-defined and systematic mechanism is in place to collect, analyze, and act upon feedback related to academic facilities. The institute ensures that infrastructure and support services are continuously improved based on stakeholder input.

Feedback Collection Process

Feedback on academic facilities is primarily collected from students, along with inputs from faculty members, to evaluate the adequacy and effectiveness of institutional resources.

- **Mode of Collection:** Feedback is collected through either online platforms (Google Forms) or offline structured forms.
- **Frequency:** Feedback is collected once every semester.
- **Coverage of Facilities:**
  The feedback form includes parameters related to:
  - Classrooms (availability, seating, ventilation, ICT facilities)
  - Laboratories (equipment adequacy, maintenance, safety, availability of consumables)
  - Library (availability of books, journals, digital resources, reading space)
  - Computing facilities and internet access
  - Seminar halls and smart classrooms
  - Basic amenities (drinking water, sanitation, common areas)
- **Participation:**
  On average, 60% of students participate in the feedback process, ensuring reliable and representative inputs.

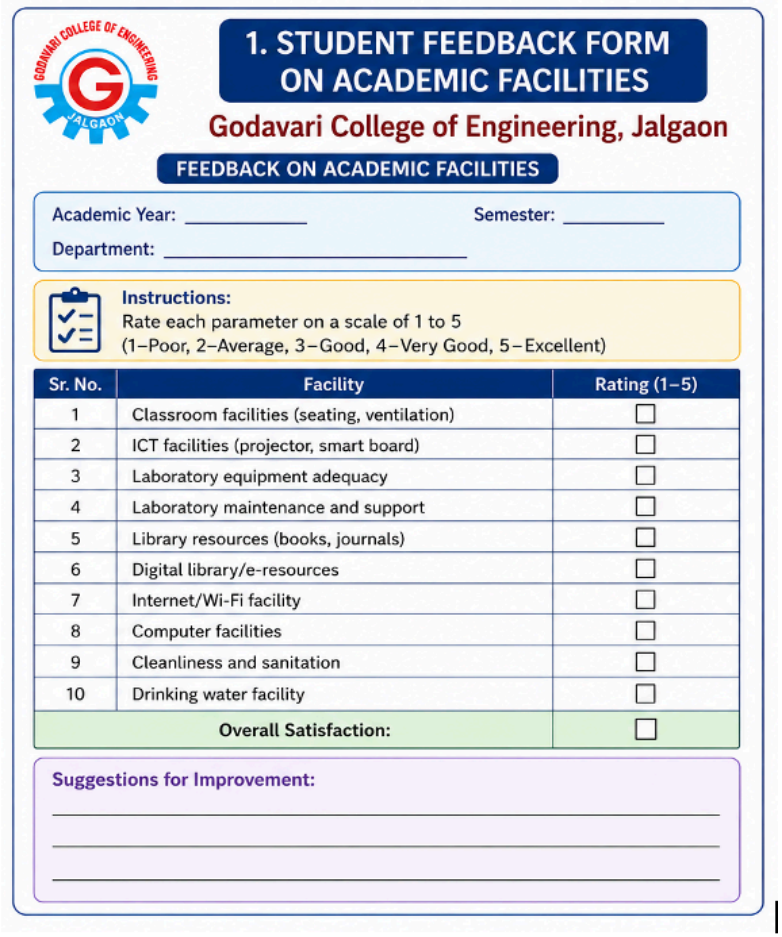
Feedback Analysis Process

The collected feedback is systematically analyzed at department.

- Responses are recorded using a rating scale (e.g., 1–5).
- Parameter-wise and facility-wise average scores are calculated.
- Facilities are categorized based on performance levels such as:
  - Excellent (≥ 80%)
  - Good (60–80%)
  - Needs Improvement (<60%)
- The analysis is reviewed by the Head of Department (HOD).
- Reports are generated highlighting:
- Strengths of existing facilities
- Areas requiring improvement

Sample Feedback Forms

Student Feedback Form on Academic Facilities



1. STUDENT FEEDBACK FORM ON ACADEMIC FACILITIES

Godavari College of Engineering, Jalgaon

FEEDBACK ON ACADEMIC FACILITIES

Academic Year: _____ Semester: _____

Department: _____

Instructions:
Rate each parameter on a scale of 1 to 5
(1–Poor, 2–Average, 3–Good, 4–Very Good, 5–Excellent)

Sr. No.	Facility	Rating (1–5)
1	Classroom facilities (seating, ventilation)	☐
2	ICT facilities (projector, smart board)	☐
3	Laboratory equipment adequacy	☐
4	Laboratory maintenance and support	☐
5	Library resources (books, journals)	☐
6	Digital library/e-resources	☐
7	Internet/Wi-Fi facility	☐
8	Computer facilities	☐
9	Cleanliness and sanitation	☐
10	Drinking water facility	☐
	Overall Satisfaction:	☐

Suggestions for Improvement:

_____

_____

_____

1. **Faculty Feedback on Facilities**

2. FACULTY FEEDBACK ON FACILITIES

Faculty Feedback on Academic Facilities

Sr. No.	Parameter	Rating (1–5)
1	Availability of teaching aids	☐
2	Laboratory support staff	☐
3	Equipment availability	☐
4	Internet and IT infrastructure	☐
5	Classroom environment	☐

2. **Feedback Summary Sheet (For Analysis Use)**

3. FEEDBACK SUMMARY SHEET (For Analysis Use)

Parameter	Avg Score	Category
4.5 – 5.0		Excellent
3.5 – 4.4		Very Good
2.5 – 3.4		Good
< 2.5		Needs Improvement

Corrective Actions Taken

Based on feedback analysis, necessary corrective and improvement measures are initiated during the assessment period. Some of the key actions include:

- **Laboratory Improvements:**
  - Procurement of new equipment and upgrading existing laboratory setups
  - Maintenance and calibration of instruments
- **Classroom Enhancements:**
- Installation / upgradation of ICT tools such as projectors and smart boards
- Improvement in seating arrangements and ventilation
- Addition of new textbooks, reference books, and e-resources
- Subscription to journals and digital databases
- Enhancement of internet bandwidth and Wi-Fi connectivity
- Upgradation of computer systems
- Improvement in sanitation and drinking water facilities
- Maintenance of common areas
- **Library Development:**

- **IT Infrastructure:**
- **Basic Facilities:**

During the assessment period, appropriate corrective actions were implemented based on feedback received.

Impact of Feedback on Academic Facilities

The systematic feedback mechanism has resulted in:

- Improved satisfaction level of students regarding academic infrastructure
- Enhanced laboratory utilization and practical learning experience
- Better classroom engagement due to ICT-enabled teaching
- Increased usage of library and digital resources
- Overall improvement in the teaching-learning environment

The feedback system for academic facilities at GF's Godavari College of Engineering, Jalgaon is transparent, participative, and result-oriented. The institute ensures that feedback is not only collected but also effectively utilized for continuous improvement of infrastructure and support services, thereby enhancing the overall quality of education.

9.4 Training and Placement Support (10)

Institute Marks : 10.00

Our institution places a strong emphasis on providing comprehensive training and placement support for students, aiming to enhance their employability and prepare them for the challenges of the professional world. The placement cell works closely with industry partners, faculty, and career development experts to ensure that students are well-equipped with the necessary skills and knowledge for a successful career.

The key elements of our training and placement support include:

1. Pre Placement Training Programs

Campus Recruitment Training (CRT) plays a major role in Shaping up the career goals of the students. Keeping this key aspect into consideration, T&P cell provides CRT training to the students to enhance their employability skills and to achieve good placement in various industries. A series of workshops and seminars also organized **with the help of industry experts to** prepare students for the recruitment process. This includes:

a) Aptitude and Reasoning: T&P cell organizing Aptitude building through expert's Regular practice and mock tests for quantitative aptitude, logical reasoning, and verbal ability.

b) Campus Recruitment Training: T&P cell organizing campus recruitment training under which students trained in the following aspects.

- SWOT analysis by Individual student.
- Soft Skill: Communication and skill development.(Time Management, Team building, Body Language, Leadership, Interpersonal)
- Core values/Etiquette.
- Resume writing/Resume building.
- Group discussion.
- Interview Management,
- Counseling based on the SWOT / Output.
- Corporate Function / Sustainability / CSR.
- Initiation and Plan of Action

c) Industry-Specific Training: T&P cell Organizes workshops by inviting industry professionals where students are trained on the latest trends, technologies, and tools used in their respective fields

2. CareerGuidance

One-on-One Counseling: Training and Placement Officer along with departmental co-coordinator are available to guide students based on their interests, strengths, and career goals. Regular counseling sessions help students to make choices regarding career paths, internships, and higher studies.

a) Workshops and Webinars:: Frequently career guidance workshops and webinars, are hosted focusing on emerging job roles, higher education options, entrepreneurship and global career opportunities. Experts from various fields provide insights on how to navigate the job market and pursue long-term career goals.

b) **Alumni Interaction:** The placement cell invites alumni from companies to interact with the students. These interactions help students tailor their profiles according to industry standards.

3. Industry Interaction and Networking

Industry Interaction bridges academia with the professional world, involving activities like guest lectures, internships, and events to give students real-world exposure, build connections with professionals, develop practical skills, and boost career opportunities.

a) Industry Visits & Collaborations: Department organizes regular industry visits in association with T&P cell, where students get a chance to explore the working environment and understand industry requirements. Industry experts are invited for guest lectures, panel discussions, and workshops to share their knowledge and experiences.

b) Industry Internship Programs: Specialized internships are facilitated, allowing students to gain hands-on experience. Industry partners collaborate with us to offer internships that can later transition into full- time employment offers for high-performing students.

4. Placement Process

The main objective of the placement process is to identify individuals who meet the criteria set by the companies.

a) Operating Procedure for Campus Placement

- Placement Cell approaches and invites companies
- Students applies for the companies
- Students appears for the Pre-Placement Talk
- Students appears for Test

- Students appears for Group Discussion
- Students appears for Interview
- Students who clears the interview get selected
- Selected students receives the offer letter
- Not selected students have to follow the same procedure again for next company

b) Placement Drive: The placement drives includes

- **On-Campus recruitment**: Companies directly visits the campus to conduct interviews for final year students and select the students for full-time positions.
- **Online Recruitment Drives**: where drives are conducted by the companies in online mode. Students appear online.
- **Off-Campus:** Off-Campus placement drives, recruitment takes place at a common location, which could be a specific college or a public venue where students from different colleges come together to participate. Students have to attend these drives at prescribed place

c) Placement Support: The placement team provides support throughout the recruitment process, from registration to interview scheduling, feedback collection, and post-placement counseling.

d) Placement Record &Alumni Network: Our alumni network is a significant asset in connecting students with potential employers. Alumni are often invited for webinars and mentorship sessions, and many also support in campus recruitment.

5. Calendar of Scheduled Trainings

Month	Training/Event	Objective
June	Aptitude Development	Comprehensive problem solving and critical thinking skills
July	Industrial Visits	Industry Exposure to industry operations, technologies, and professional environments, thereby enhancing their awareness level
August	Career Guidance Webinars and Workshops	Career Options with Parameters to Choose
September- May	Placement Season: Recruitment Drives	FinalYear Student Get Opportunity to start career
October-January	IndustrialTraining	Exposure, experience, developing & State of Art skills
January	Industry-SpecificTechnical Workshops/Seminar	Provide hands-on industrial Requirements
January- June	Internship	Facilitate internships
February-March	Mock Interview and Resume Building Sessions	Capacity Building to face recruitment process
April–June	IndustrialTraining	Exposure, experience, developing & State of Art skills

9.5 Start-up and Entrepreneurship Activities (5)

Institute Marks : 5.00

GFs Godavari College of Engineering (Autonomous), Jalgaon, actively promotes innovation, entrepreneurship, and start-up culture among students by creating an ecosystem that encourages creativity, problem-solving, and entrepreneurial thinking. The institute has established mechanisms to motivate students to transform innovative ideas into viable products and business ventures.

The institute organizes regular Entrepreneurship Development Programs (EDPs), Innovation Workshops, Start-up Awareness Sessions, Expert Lectures, Hackathons, Idea Pitching sessions and Intellectual Property Rights (IPR) awareness programs in collaboration with industry experts, entrepreneurs, incubation centers, AICTE, and innovation agencies.

The institution has established an **Institutions Innovation Council (IIC)** under the Ministry of Education Innovation Cell (MIC), Government of India, which conducts various activities throughout the academic year to inculcate innovation and entrepreneurial mindset among students. Through the IIC, students are encouraged to participate in national-level innovation challenges, Smart India Hackathon (SIH), Toycathon, Bootcamps and innovation contests.

Institutions Innovation Council (IIC)


Ministry of Education
MoE's INNOVATION CELL (GOVERNMENT OF INDIA)
INSTITUTION'S INNOVATION COUNCIL

CERTIFICATE OF ESTABLISHMENT

This is to certify that

GF'S GODAVARI COLLEGE OF ENGINEERING, Jalgaon

has established an Institution's Innovation Council (IC202014356) in the campus as per the norms of Innovation Cell, Ministry of Education, Govt. of India during the academic calendar year 2020-21

Prof. Anil D. Sahasrabudhe
Chairman
AICTE

Dr. Abhay Jere
Chief Innovation Officer
Ministry of Education's Innovation Cell

Certificate No: 3600 Alpha Code: C-8836 Date: 22-10-2020

The Institute Innovation Council (IIC) work to promote innovation and entrepreneurship among students. The IIC provides strategic direction and policy-level support aligned with national initiatives. This has strengthened the institute's innovation ecosystem and fostered a sustainable start-up culture at campus.

Effectiveness

- Increased participation in innovation and entrepreneurship activities.
- Higher number of student projects addressing societal and industrial problems.
- Improved participation in Smart India Hackathon, innovation contests and start-up competitions.
- Increased awareness regarding Start-up India, IPR and entrepreneurship.
- Development of entrepreneurial mindset among students leading towards self-employment and innovation-driven careers.

List of Beneficiaries

Academic Year	Activity	No. of Student Beneficiaries
2025-26	Entrepreneurship development Programmes	120+
2025-26	IPR Awareness Programmes	50+
2025-26	Innovation Workshops	550+

2025-26	Hackathons & Idea Competitions	530+
2025-26	Patent Awareness & Filing Guidance	
2025-26	Start-up Awareness Sessions	140+

Academic Year	Activity	No. of Student Beneficiaries
2024-25	Entrepreneurship development Programmes	184+
2024-25	IPR Awareness Programmes	60+
2024-25	Innovation Workshops	250+
2024-25	Hackathons & Idea Competitions	230+
2024-25	Patent Awareness & Filing Guidance	120+
2024-25	Start-up Awareness Sessions	160+

Academic Year	Activity	No. of Student Beneficiaries
2023-24	Entrepreneurship development Programmes	50+
2023-24	IPR Awareness Programmes	70+
2023-24	Innovation Workshops	100+
2023-24	Hackathons & Idea Competitions	80+
2023-24	Patent Awareness & Filing Guidance	50+
2023-24	Start-up Awareness Sessions	60+

Academic Year	Activity	No. of Student Beneficiaries
2022-23	Entrepreneurship development Programmes	40+
2022-23	IPR Awareness Programmes	40+
2022-23	Innovation Workshops	165+
2022-23	Hackathons & Idea Competitions	50+
2022-23	Patent Awareness & Filing Guidance	40+
2022-23	Start-up Awareness Sessions	51+

Activities Conducted

The Table 9.5.A highlights key entrepreneurship and innovation activities conducted by the institute, showcasing expert involvement, student participation, and measurable outcomes in fostering entrepreneurial and innovation skills.

Table 9.5.A: Details of Entrepreneurship and Innovation Activities Conducted

Sr. No	Resource Person & Organization	Name of Activity	Date	No. of Student	Outcome/ Output

1	Mr. Sagar Patil Managing Director, Khandesh Incubation Technology & Entrepreneurship (KITE) Forum, Jalgaon	Innovation/Prototype Validation & "Value Proposition Fit & Business fit"	20/04/2026	**100+**	Awareness about Value Proposition & Business Fit
2	Dr. Vijay D. Chaudhari Associate Professor Godavari Engineering College, Jalgaon	Workshop on Protecting IPR & IP Management for start up	18/04/2026	**50+**	The outcomes of protecting Intellectual Property Rights (IPR) and implementing effective IP management in a startup include significantly increased valuation, attraction of venture capital
3	Dr. Nilesh Choudhary Associate Professor, Godavari College of Engineering, Jalgaon	AI & Innovation Sprints: Rapid Prototyping for Digital Transformation	24/03/2026	100+	Students gained knowledge about AI and innovation processes
4	Dr. A. D. Vishwakarma, HoD, Godavari College of Engineering	Program on "AI-Powered Solution Expo : Demo Days for AI /14.0 Prototypes"	08/04/2026	60+	Strengthened practical skills in machine learning, deep learning, and data analytics tools
5	Prof. Shantaram Badgujar (Promoter & Director, KITE Forum, Jalgaon)	"Field Visit to the Khandesh Incubation Technology & Entrepreneurship (KITE) Forum, Jalgaon"	30/04/2026	50+	The activity instilled confidence among students to explore self-employment opportunities and fostered an entrepreneurial mindset
6	Dr. Vijaykumar Wankhede TPO, Godavari College of Engineering	"Training on Technology Commercialization, Licensing and Transfer: Practices & Strategy"	08/05/2026	90+	Participants also understood various commercialization strategies including licensing, startup creation, spin-offs, joint ventures, and consultancy services
7	Mr. Harshal Patil, Co-Founder, Bit2Sky India Pvt. Ltd. & HNV Techno Solutions Pvt. Ltd.	Motivational Expert Session by a Successful Entrepreneur"	27/03/2026	60+	learned about the essential skills required to become a successful entrepreneur, such as problem-solving ability, confidence, communication skills, and continuous self-learning
8	Dr. Atul Barhate, Convenor, IIC-GFGCOE.	Innovation and Entrepreneurship Outreach Program"	25/04/2026	60+	A significant positive impact on the participating students by enhancing their understanding of basic concepts related to innovation and entrepreneurship
9	Dr.Nitin Khandare Chief Executive Officier, KCIIL, KBCNMU	Field visit to KCIIL-KBCNMU Incubation Centre, Jalgaon	13/0/2026	50+	Learning about business models, funding opportunities, and scaling strategies

10	Dr. Bedatri Moulik Professor, Amity University, Noida	International Conference on Recent Advances in Engineering, Science and Technology	21/04/2026	200+	Researcher has presented their papers.
11	Mr. Monj Kumavat Managing director, Passion Software Solutions, Jalgaon	Innovative Workshop on Python Programming.	27/10/2025 to 29/10/2025	50+	Learn python programming
12	Nilesh Wagh, Co- Founder and CEO Electrosoft technology Jalgaon.	Three Days Workshop on Innovative Project development & Understanding PLC	07/10/2025 to 09/10/2025	70+	Gained a clear understanding of Programmable Logic Controllers (PLC) and their role in industrial automation.
13	Dr. V. H. Patil, Principal	Smart India Hackathon (Internal)	17/09/2025	300+	Awarness about Smart India Hackathon
14	Dr. Tushar A. Koli, Associate Professor, Godavari College of Engineering	Demo Day/ Idea Showcase	19/11/2025	100+	Collaboration or funding opportunities initiated for promising teams.
15	Prof. Reshma A. Attarade Godavari College of Engineering	School outreach Program on “AI Tools”	02/12/2024	90+	Increase Awareness of AI, Develop Critical Thinking
16	Mr. Rakeshkumar Upadhyay, Manager at Capgemini. Mr. Jaiprakash Prajapati, Business Director (Gn AI, New Mumbai)	Emerging Technologies in the Software Industry	18/10/2024	60+	aspiring software professionals to gain a deeper understanding of the rapidly evolving software industry
17	Dr. B. L. Chaudhari, Director, School of Life Sciences & Head, Dept of Microbiology, KBCNMU, Jalgaon	Process of innovation development, technology readiness level (TRL) commercialization of lab technologies & tech transfer	04/03/2025	60+	Process of innovation development, Technology readiness level (TRL), Commercialization of lab technologies, Tech transfer
18	Mr. Monj Kumavat Managing director, Passion Software Solutions, Jalgaon	Session on Accelerator /Incubation - Early-Stage Entrepreneurs Opportunities for students and faculties	23/05/ 2025	84	Understand the role of incubators and accelerators in nurturing early-stage ventures.
19	Yogesh Udgire (Director, Trinetrini Quantum Pvt. Ltd., Digital Transformation Academy)	Celebration of National Startup Day under “Swavalambi Bharat Abhiyan – Govt. of India.	16/01/2025	100+	Recognizing the milestones of Startup India over nine years, including its influence on job creation, innovation, and economic growth & enhancing loyalty to the country and its wise leadership
20	Rajesh Thakre, Co-founder and CEO Electrosoft technology Jalgaon.	Seminar on engineering economy of professional road map ahead	21/10/2024	70+	Intermediate in hardware and software area.
21	Prof. Kishor M. Mahajan, Assistant Prof. GF’s GCOE Jalgaon	Two Days Workshop on, “CNC Programming and Machining”	24/10/ 2024 to 25/10/2024	50+	Strengthened problem-solving skills for CNC machine operations and troubleshooting.
22	Rajesh Thakre, NileshWagh, Co- Founder and CEO Electrosoft technology Jalgaon.	Two-day Workshop on “Innovative Project Development”	24/10/ 2024 to 25/10/2024	50+	Students got acquainted with Innovative Project present in market, their scope, how to start business/startup with new project ideas

23	Mr. Vijay V. Chaudhari, Director of Biomedical Engineering Department, DUPMC Jalgaon	A Session on, “Problem Solving and Ideation Workshop”	11/11/2024	50+	Understanding Problem-Solving Techniques, Collaboration and Teamwork in Problem Solving.
24	Dr. Sacha Vincent, Head, Economic & Statistics Division, World Intellectual Property Office, Geneva	Inaguaration of Celebration of world creativity and innovation day and intellectual property	21/04/2025	50+	Awareness about patents, copyrights, trademarks, and designs., Helps protect academic projects
25	Mr. Sagar Patil, Chief Executive Officier, Kavayitri Bahinabai Chaudhari North Maharashtra University’s Centre for Innovtion, Incubation, Linkage Jalgaon. (KCIIL) 2	Field/Exposure visit to Kavayitri Bahinabai Chaudhari North Maharashtra University’s Centre for Innovtion, Incubation, Linkage Jalgaon	10/03/2025	50+	Learning about business models, funding opportunities, and scaling strategies
26	Dr. H.T. Ingale Dean Academics, Godavari College of Engineering.	Demo Exhibition of Startup and Linkage with Innovation Ambassador and Mentorship support	27/06/2025	140+	Exposure to new ideas, tools, and technologies. Recognition for innovative and creative work. Opportunity for networking with industry and academia.
27	Dr. Hemant Nehete Associate Professor, Godavari College of Engineering	A one-day workshop on, “Prototype, Process Design and Development"	06/05/2025	50+	The importance of empathy, problem identification, ideation, and iterative development in innovation was emphasized through the design thinking framework
28	Prof. Chetan Sarode, (Associate Professor & Sr. Researcher) Godavari Institute of Management and Research, Jalgaon	Session on Achieving Problem Solution Fit & Product Market Fit	07/01/2025	50+	Clear Understanding of Customer Needs, Building Viable and Scalable Solutions, Encourages the use of prototyping.
29	Dr. I.S. Jadhav, Sr. Researcher, Godavari College of Engineering	Workshop on Entrepreneurship and innovation as a career Opportunity	01/09/ 2024	50+	Motivation through real entrepreneurial journey.
30	Dr. Prashant Warke, Director, GIMR	From Idea to Impact Motivational Session by successful Entrepreneur	15/10/2024	50+	Understanding the importance of IP rights, legal procedures, and how to avoid common pitfalls
31	Dr. Abhay Jere, Vice Chairman AICTE (MIC Driven)	Session on MIC Program and Schemes with Dr. Abhay Jere	23/10/2024	50+	Mission, Vision and Goals of MIC, Role of Institutional Innovation Councils (IICs), Key Schemes, Programs & Portals under MIC Yukti, Kapila, Smart India Hackathon, NISP, TRL, IPR
32	Dr. Rajendra Dhande, director, Janhvi Plastic, Samruddhi Plastic	Program on “CEO Connect on Udayamita Diwas”	09/11/2023	50+	Entrepreneurship as a carrier

Student Start-ups: Evidence of Innovation-Driven Outcomes

Continuous mentoring through innovation activities by trained faculty members and Innovation Ambassadors helped students develop entrepreneurial skills. This led to the establishment of student start-ups, active student founders, and award-winning performances at various levels, reflecting the institutes innovation-driven ecosystem.

Table 9.5.2: Details of Student Start-ups and Founders

Sr. No	Name of Founder	Start-Up Name/Project Title
1	Mr. Vaishnav Chaudhari	Smart Agriculture Pole
2	Mr. Jay Khadse	Smart Air Cooler



Techonovation Achievement



Student Vaishnav Chaudhari has got Seed Fund receive for Startup From Govt. of Maharashtra 2023-24



Student Jay Khadse has got Seed Fund receive for Startup From Govt. of Maharashtra 2023-24

These achievements demonstrate the effectiveness of the institute's entrepreneurship initiatives in fostering innovation, self-employment, and job creation among students.

To further strengthen the institutional innovation ecosystem, faculty members have been trained as Innovation Ambassadors under the Institution's Innovation Council (IIC). At present, 9 Faculty members completed Basic Training, Advance Training & Reskilling Training of Innovation ambassador, while 03 faculty members have completed the Basic Innovation Ambassador Training. These trained faculty members play a vital role in mentoring students and providing leadership, coaching, and strategic guidance for innovation, start-up, and entrepreneurship activities organized through the Institution's Innovation Council (IIC). Their continuous support has significantly enhanced the quality, sustainability, and measurable impact of the institute's entrepreneurial ecosystem.

Table 9.5.3: Students Achievements

Sr. No.	AY	Name of Competition	Level	Organizing Agency	Achievement / Position	Name of students
1	22-23	TECHNOVATION: IEEE sponsored Model Competition	State Level (IEEE) working model competition	IEEE	First Prize	Vaishnav Chaudhari
	22-23	TECHNOVATION: IEEE sponsored Model Competition	State Level (IEEE) working model competition	IEEE	Second Prize	Jay Khadse
2	25-26	Innovation Design & Entrepreneurship (IDE) Bootcamp Edition 3 (Phase I)	National	AICTE and the Ministry of Education's Innovation Cell (MIC)	Participation	Yash Anil Chaudhary, Mayur Gurav, Dipak Kale.

3	25-26	Innovation Design & Entrepreneurship (IDE) Bootcamp Edition 3 (Phase II)	National	AICTE and the Ministry of Education's Innovation Cell (MIC)	Best performing team	Nishant Kiran Patil, Krushna Balasaheb Thombare, Vivek Chandrakant Thakur, Raj Sunil Suryavanshi.

- More than 2,000 students have participated in 32 innovation and entrepreneurship programs organized by the institute.
- Two student teams received ₹1,00,000 each as state-level start-up funding for their innovative ideas.
- Students have secured state-level awards, won national competitions, and achieved recognition in international innovation and business contests.
- These achievements indicate significant improvement in students' innovation, start-up, and entrepreneurial skills.
- A functional Institution's Innovation Council (IIC) has been in operation since 2020 to sustain and guide innovation activities.
- The IIC is supported by structured faculty, expert, and student councils for effective implementation.
- Trained and Advanced Innovation Ambassadors provide continuous mentoring and guidance.
- The institute organizes approximately 15–20 innovation and entrepreneurship activities annually, resulting in increased student participation and a strong innovation-driven start-up culture.

9.6 Governance and Transparency (25)

9.6.1 Governing Body, Administrative Setup, Functions of Various Bodies, Service Rules, Recruitment procedures and Promotion Policies (10)

Institute Marks : 10.00

GFs Godavari College of Engineering (Autonomous), Jalgaon functions under the aegis of **Godavari Foundation, Jalgaon**. The institute follows a transparent, decentralized, and participative governance system to ensure academic excellence, quality assurance, effective administration, and continuous institutional development. The governance framework is aligned with the provisions of AICTE, UGC, DBATU, NBA, NAAC, Government of Maharashtra, and the autonomous status guidelines.

The institute has established various **statutory and non-statutory committees** for academic planning, administration, student welfare, quality assurance, grievance redressal, discipline, and institutional development. These committees function according to well-defined responsibilities and conduct regular meetings to monitor institutional activities and ensure effective implementation of decisions.

A. Statutory Bodies

1. Governing Body (GB)

The Governing Body is the apex decision-making body responsible for strategic planning, policy formulation, financial management, infrastructure development, approval of institutional policies, and overall governance of the institute. The Governing Body consists of representatives from the management, university, AICTE, industry, faculty, and society.

Major Functions

- Formulation of institutional policies.
- Approval of annual budget and development plans.
- Approval of new academic programmes.
- Monitoring quality initiatives.
- Review of academic and administrative performance.
- Promotion of industry interaction and research.

The Governing Body meets periodically (normally two meetings per academic year) and reviews the progress of academic, administrative, financial, research, and quality initiatives.

Governing Body member details: https://www.gfgcoe.ac.in/PSD/Gov/Docs/1%20Governing%20Body.pdf
(https://www.gfgcoe.ac.in/PSD/Gov/Docs/1%20Governing%20Body.pdf)

Governing Body minutes of meeting:

1st meeting: https://www.gfgcoe.ac.in/PSD/Gov/BoG/docs/First_BoG%20MoM%20Register%2012.09.2025.pdf
(https://www.gfgcoe.ac.in/PSD/Gov/BoG/docs/First_BoG%20MoM%20Register%2012.09.2025.pdf)

2nd meeting: https://www.gfgcoe.ac.in/PSD/Gov/BoG/docs/Second_BoG%20MoM%20Register%2017.10.20251.pdf
(https://www.gfgcoe.ac.in/PSD/Gov/BoG/docs/Second_BoG%20MoM%20Register%2017.10.20251.pdf)

2. Academic Council

The Academic Council is the highest academic authority responsible for planning, regulating, and monitoring academic activities under autonomous status.

Major Functions

- Approval of curriculum and syllabus.
- Academic regulations.
- Examination reforms.
- Introduction of value-added courses.
- Approval of Board of Studies recommendations.
- Academic calendar approval.
- Research and innovation initiatives.

The Academic Council generally meets twice every academic year.

Academic Council member details: https://www.gfgcoe.ac.in/PSD/GOV/Docs/3%20Academic%20Council.pdf
(https://www.gfgcoe.ac.in/PSD/GOV/Docs/3%20Academic%20Council.pdf)

Academic Council meeting

1st meeting: https://www.gfgcoe.ac.in/About/AcademicCouncil/docs/1st%20AC%20MoM%20Scan%2013.09.2025.pdf
(https://www.gfgcoe.ac.in/About/AcademicCouncil/docs/1st%20AC%20MoM%20Scan%2013.09.2025.pdf)

2nd meeting: https://www.gfgcoe.ac.in/About/AcademicCouncil/docs/2nd%20AC%20MoM%20Scan%2008.10.2025.pdf
(https://www.gfgcoe.ac.in/About/AcademicCouncil/docs/2nd%20AC%20MoM%20Scan%2008.10.2025.pdf)

3rd meeting: https://www.gfgcoe.ac.in/About/AcademicCouncil/docs/3rd%20AC%20MoM%20Scan%2014.07.2026.pdf
(https://www.gfgcoe.ac.in/About/AcademicCouncil/docs/3rd%20AC%20MoM%20Scan%2014.07.2026.pdf)

3. Board of Studies (BoS)

Each department has an independent Board of Studies comprising internal faculty members, subject experts from academia, industry experts, alumni, and university nominees.

Functions

- Curriculum design and revision.
- Introduction of emerging technologies.
- Review of laboratory courses.
- Industry-oriented syllabus updates.
- Approval of course outcomes and assessment schemes.

Board of Studies (BoS) Member details: https://www.gfgcoe.ac.in/PSD/GOV/Docs/1%20Board%20of%20Studies%20Letter.pdf (https://www.gfgcoe.ac.in/PSD/GOV/Docs/1%20Board%20of%20Studies%20Letter.pdf)

4. Finance Committee

The Finance Committee reviews institutional financial planning, annual budgets, infrastructure expenditure, and utilization of grants.

Finance Committee member details: https://www.gfgcoe.ac.in/PSD/GOV/Docs/5%20Finanace%20Committee.pdf (https://www.gfgcoe.ac.in/PSD/GOV/Docs/5%20Finanace%20Committee.pdf)

B. Non-Statutory Committees

To ensure effective governance and student support, the institute has constituted the following committees.

a) Internal Quality Assurance Cell (IQAC)

IQAC plans, monitors, and reviews quality initiatives of the institute.

Functions

- Academic audit.
- Quality enhancement initiatives.
- NBA and NAAC Accreditation coordination.
- Faculty development activities.
- Student feedback analysis.
- Outcome Based Education implementation.

IQAC member details: https://www.gfgcoe.ac.in/iqac/IQAC%20Committee%20for%202025-26.pdf (https://www.gfgcoe.ac.in/iqac/IQAC%20Committee%20for%202025-26.pdf)

Minutes of meetings: https://www.gfgcoe.ac.in/IQAC/MOM/ (https://www.gfgcoe.ac.in/IQAC/MOM/)

b) Grievance Redressal Committee

The committee addresses grievances related to academics, administration, examination, and student welfare in a transparent and time-bound manner.

Students Grievance Redressal Committee details: https://www.gfgcoe.ac.in/About/Committee/StudentGrievance/ (https://www.gfgcoe.ac.in/About/Committee/StudentGrievance/)

c) Anti-Ragging Committee

The institute maintains a zero-tolerance policy towards ragging.

Functions

- Awareness programmes.
- Anti-ragging affidavit collection.
- Surprise inspections.
- Complaint redressal.
- Coordination with Anti-Ragging Squad.

Anti-Ragging Committee member details: **https://www.gfgcoe.ac.in/ICC/DOCS/2%20%20Anti%20Ragging%20Committee.pdf** (https://www.gfgcoe.ac.in/ICC/DOCS/2%20%20Anti%20Ragging%20Committee.pdf)

d) Internal Complaints Committee (ICC)

The Internal Complaints Committee is constituted as per the Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013.

(Women Grievance Redressal Cell)

Functions

- Prevention of sexual harassment.
- Awareness programmes.
- Complaint inquiry.
- Counselling and redressal.
- Ensuring a safe working environment.

Women Grievance Redressal Cell: https://www.gfgcoe.ac.in/ICC/DOCS/3%20%20Woments%20Grievance%20Reressal%20Cell.pdf
(https://www.gfgcoe.ac.in/ICC/DOCS/3%20%20Woments%20Grievance%20Reressal%20Cell.pdf)

Faculty Grievance Redressal Cell: https://www.gfgcoe.ac.in/ICC/DOCS/4%20%20Faculty%20Grievance%20Redressal%20Cell.pdf
(https://www.gfgcoe.ac.in/ICC/DOCS/4%20%20Faculty%20Grievance%20Redressal%20Cell.pdf)

e) Student Discipline Committee

Responsible for maintaining discipline, ethical conduct, and campus decorum.

SC/ST/OBC/EWS/Minority Cell

- Provides support to SC/ST students and ensures implementation of Government policies.
- Facilitates welfare measures for students belonging to OBC and EWS categories.
- Ensures equal opportunities and welfare of minority students.

https://www.gfgcoe.ac.in/About/Committee/EqualOpportunity/ (https://www.gfgcoe.ac.in/About/Committee/EqualOpportunity/)

f) Training and Placement Committee: Coordinates internships, industrial visits, campus recruitment, and placement activities.

https://www.gfgcoe.ac.in/Placement/Training/ (https://www.gfgcoe.ac.in/Placement/Training/)

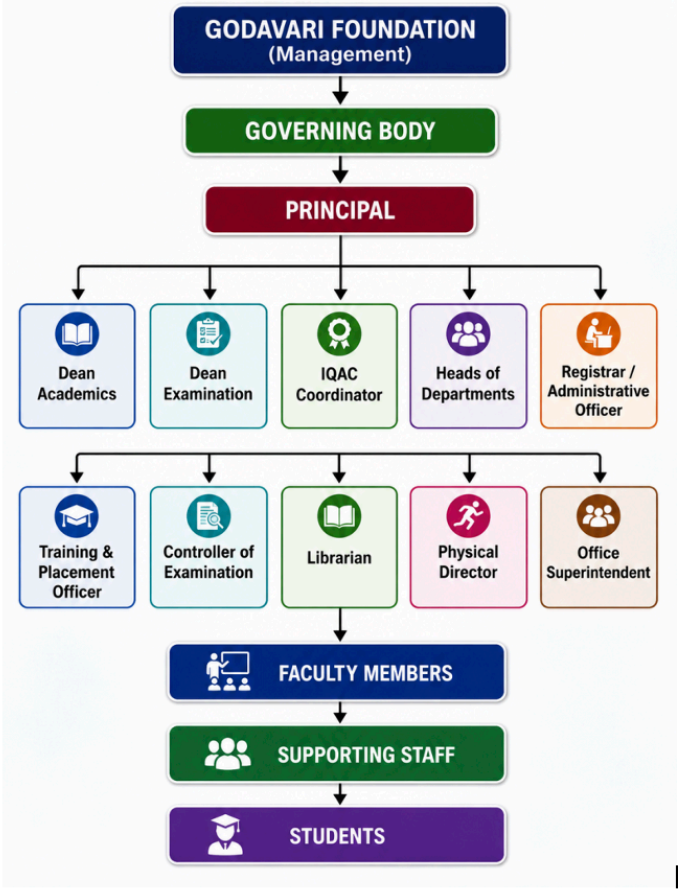
g) Institutions Innovation Council (IIC)

Promotes innovation,entrepreneurship, start-up culture, and intellectual property awareness among students and faculty.

https://www.gfgcoe.ac.in/Students/Cells/IIC/ (https://www.gfgcoe.ac.in/Students/Cells/IIC/)

C. Administrative Structure

The institute follows a well-defined organizational structure.



D. Meetings and Decision-Making Process

Each statutory and non-statutory committee conducts periodic meetings as per the institutional calendar.

For every meeting, the following documents are maintained:

- Meeting Notice
- Agenda
- Attendance Sheet
- Minutes of Meeting
- Action Taken Report (ATR)
- Supporting Documents

The implementation of decisions is reviewed in subsequent meetings to ensure timely execution and continuous improvement.

E. Service Rules

Godavari Foundation's

GODAVARI COLLEGE OF ENGINEERING

P-51, Addl. MIDC, Bhusawal Road, Jalgaon 425 003 (Maharashtra)

SERVICE REGULATIONS – (Revised in 2026)

1) This Service Regulation 2026 (Revised) made effective from the 1st of August 2026 and shall be called "Godavari College of Engineering, Jalgaon - Service Regulations-2026" (Revised).

2) These regulations shall apply to all employees in this Institute.

3) The provisions of these service-regulations shall be implemented by a "Competent Authority" who shall have power delegated by the management for the same.

Sr. No.	Particulars
1.	The services of the employees shall be governed by the rules and regulations of AICTE, New Delhi, the Government of Maharashtra, the Affiliated University, and MSBTE, Mumbai, regarding all work responsibilities and service conditions.
2.	Those employees, who has gone through University/MSBTE Selection process will be given full time appointment on probation of initially two years from the date of joining, subject to approval of concern University/MSBTE.
3.	If, during this probation, work of employees is found unsatisfactory the probation period may be extended maximum up to one more year or his/her service may be terminated.
4.	Academic year appointment will be for the period of Eleven month or up to 30th April from the date of appointment.
5.	At the time of joining, employee has to submit certified true copies of all relevant documents such as birth date certificate, mark sheets, degree certificates, caste / caste validity certificate, experience certificates, discharge/relieving certificate of previous employer, last pay certificate, change of name certificate if any, PAN Card, Aadhar Card, passport photo.
6.	Employee has to undergo medical examination by approved/registered Medical Practitioner, within three months from the date of joining his/her duties.
7.	Employee has to give correct mailing address as soon as he/she join the duties and any change in address given earlier should be communicated to principal/management. It will be presumed that letter sent by Register post Acknowledgment Due (RPAD) on the address given, shall be deemed to have been acknowledged duly by you.
8.	Casual leave on full pay may be allowed to an employee of the college upto a maximum of twelve (12) days in one academic year, but not more than four (4)

GODAVARI FOUNDATION Reg.No. MH-2408 JALGAON Dt.2/4/93

	consecutive days at a time.
9.	The number of days of ML for eligible Staff is restricted to 10 days per year. These ML would go on accumulating till the declaration of resignation/retirement. For availing any ML, medical certificate from registered practitioner is mandatory.
10.	The vacation leave entitlement will follow the rules, schedule, and regulations of the affiliated university of the institution. Approval may still depend on institutional requirements, workload, exams, admissions, or assigned duties, If the university changes its academic calendar, leave availability may also change accordingly.
11.	Duty Leave may be granted for the following, subject to prior approval from competent authority: Attending conferences, symposia, workshops and seminars, delivering guest/expert lectures on behalf of the Institute, for performing any other duty for the University, Participating in a delegation or working on a committee appointed by University, Central Government, State Government, UGC or any other academic body etc.
12.	Maternity leave shall be admissible to eligible female employees for a period of up to one hundred eighty (180) days, subject to a maximum of two occasions during the entire service period.
13.	Promotion in service will be through proper procedure laid down by University/ MSBTE/ DTE/ AICTE subject to fulfillment of eligibility criteria.
14.	Regular Employee has to serve three months and adhoc employee has to serve one month notice or surrender three months gross salary or one month gross salary respectively before resigning.
15.	During your employment, you cannot do any of the following without prior permission from management : Conduct private tuition, run or teach in private coaching classes, take up any other paid job, engage in any full-time/part-time, freelance, consulting, or side work.
16.	Employees shall be available any time on short notice of Principal/Management.
17.	If he/she found absent continuously for more than thirty days without permission, his/her services will stand terminated automatically.
18.	If he/she found guilty or violation of any terms & conditions mentioned above, he/she will be liable for disciplinary action & punishment decided by the Management. During the period of service, you shall not directly or indirectly do such things which are subversive to the interest of the Society /University / Institute /College/Students. On violation of rules his/her services are liable to be terminated any time, without assigning any reason therefore.

GODAVARI FOUNDATION Reg.No. MH-2408 JALGAON Dt.2/4/93 JALGAON-425003

President
Godavari Foundation, Jalgaon

PRESIDENT
GODAVARI FOUDATION
JALGAON

The institute has well-defined service rules approved by the management.The service rules are periodically revised according to AICTE, Government of Maharashtra, UGC, and University regulations.

F. Recruitment Procedure

Faculty recruitment is carried out through a transparent process following AICTE, UGC, Government of Maharashtra, and DBATU norms.

The recruitment process includes:

- Advertisement in newspapers and institute website
- Receipt of applications
- Scrutiny of applications
- Constitution of Selection Committee
- Demonstration lecture
- Personal interview
- Recommendation by Selection Committee

- Approval by Competent Authority
- Appointment Order

G. Promotion Policy

Faculty promotions are based on:

- Academic qualifications
- Teaching effectiveness
- Research publications
- Patents and consultancy
- Student feedback
- Administrative responsibilities
- Professional development programmes
- AICTE/UGC eligibility norms
- Annual Performance Appraisal Reports (APAR)

The institute encourages faculty members to pursue higher education, research, consultancy, patents, and funded projects through a transparent performance evaluation system.

GFs Godavari College of Engineering (Autonomous), Jalgaon has established a robust governance system with clearly defined statutory and non-statutory committees, transparent administrative procedures, comprehensive service rules, structured recruitment mechanisms, and merit-based promotion policies. Regular meetings, systematic documentation, and effective implementation of decisions ensure participative management, academic excellence, quality assurance, and continuous institutional improvement in line with AICTE, UGC, DBATU, NAAC, and NBA guidelines.

9.6.2 Transparency (5) Institute Marks : 5.00

Godavari College of Engineering, Jalgaon practices transparent governance and proactive dissemination of institutional information by systematically publishing policies, rules, processes, decisions, and performance-related information through its official website, ERP systems, and digital communication platforms. We followw the Guidelines of UGC on Public Self-Disclosure by Higher Education (https://www.ugc.gov.in/pdfnews/1363341_public-self-disclosure.pdf). Transparency is embedded across academic, administrative, financial, and student-support processes, ensuring accessibility, accountability, and stakeholder confidence.

A. Transparency in Admissions, Fee Structure, and Student-Related Processes

The Institute ensures transparency in admissions, fee structure, and student-related processes through publicly available information on eligibility criteria, admission procedures, fee details, academic regulations, examination rules, and assessment norms published on the Institute website.

An ERP-based e-governance system is implemented to manage admissions, academic records, attendance, assessments, and financial transactions. The ERP provides individual login credentials to students enabling real-time access to academic progress, attendance, examination schedules, fee status, notices, and circulars, thereby strengthening transparency and parental involvement.

All financial transactions related to fees are carried out through online payment modes integrated with the ERP system, ensuring traceability, transaction records, and digital proof of payment. Students receive system-generated acknowledgements and messages confirming transactions, reinforcing financial transparency.

The Institute provides a clear and accessible framework for Government Scholarships, including eligibility criteria, application procedures, timelines, and grievance redressal, through its website and student support offices. This ensures that economically and socially eligible students are well informed and supported.

To further enhance transparency and informed decision-making, the Institute conducts career counseling and orientation programs for prospective students prior to admission, offering clarity on programs, career pathways, employability prospects, and academic expectations. Following admission process, structured induction programs are conducted to familiarize students with institutional policies, academic systems, assessment processes, support services, and ethical guidelines, ensuring smooth academic integration.

B. Transparency in Recruitment, Promotion, and Human Resource Governance

Transparency in human resource governance is ensured through publicly disclosed service rules, recruitment procedures. Vacancy notifications are disseminated through print media, the Institute website, and official professional platforms, ensuring equal opportunity and wide outreach.

C. Transparency in Procurement, Financial Management, and Decision-Making

The Institute follows a transparent, need-based, and bottom-up procurement mechanism. Academic, research, and infrastructure requirements are first identified at the departmental and functional unit level based on curriculum needs, technological relevance, and student learning outcomes. These proposals are consolidated by the Heads of Departments and forwarded for institutional processing.

The proposals are evaluated by the Procurement Committee, which scrutinizes technical specifications, quality, relevance, cost-effectiveness, and compliance with institutional and regulatory norms. Based on the committee's recommendations, proposals are placed before the Finance Committee for financial scrutiny, budgetary verification, and approval as per delegated financial powers. Thereafter, the approved procurement decisions are placed as a note before the Governing Body for information and institutional oversight, ensuring transparency at the apex governance level. All procurement activities are supported by proper documentation, committee approvals, comparative evaluations, and audit compliance, and financial transactions are recorded through institutional financial systems. This structured approval flow from departmental initiation to Procurement Committee evaluation, Finance Committee approval, and Governing Body noting ensures accountability, traceability, and transparent financial governance.

D. Transparency through Feedback and Performance Monitoring Mechanisms

The Institute ensures transparent monitoring and continuous improvement through structured feedback mechanisms involving students, parents, and faculty, supported by digital platforms and formal review processes.

Student performance assessment is carried out through defined internal and external evaluation mechanisms, and the assessment outcomes, attendance records, and academic progress are made available through the ERP system. The ERP provides secure login access to students enabling real-time visibility of academic performance, internal assessment marks, attendance, examination schedules, and notices. This transparency strengthens parental awareness and involvement in the academic progress of students. To further reinforce transparency and stakeholder engagement, the Institute conducts Students Parents–Faculty meetings, wherein student performance, academic progress, attendance, and areas for improvement are discussed in a structured manner. These interactions ensure open communication, shared responsibility, and timely academic interventions.

Faculty performance feedback is governed through a multi-source mechanism, including structured student feedback on teaching effectiveness and HOD feedback on academic performance and institutional contributions. The outcomes are reviewed by academic leadership and used for performance improvement, mentoring, and faculty development, ensuring transparency and fairness.

E. Governance Transparency through Statutory Bodies

Transparency in governance is ensured by publishing details of statutory and academic bodies, including the Governing Body, Academic Council, Finance Committee, Boards of Studies, and IQAC, on the Institute website. The agendas, minutes of meetings, and Action Taken Reports (ATRs) of these bodies are documented and made accessible through statutory disclosures and quality assurance reports, enabling stakeholders to understand policy formulation and institutional decision-making processes.

F. Grievance Redressal and Stakeholder Support Mechanisms

The Institute maintains transparent and accessible grievance redressal systems for students and staff through designated committees such as the Student Grievance Redressal Committee, Employee Grievance Redressal Cell, Internal Complaints Committee (Women Harassment Prevention), Anti-Ragging Committee, SC/ST Cell, and Disciplinary Committee. Information regarding grievance procedures, contact details, and escalation mechanisms is published on the Institute website, ensuring fairness and timely resolution.

G. Publicly Available Resources and Digital Communication Platforms

GF's GCOE actively disseminates institutional information through multiple official platforms, including the Institute website, ERP portals, and social media channels such as LinkedIn, Facebook, and Instagram. In addition, official Whatsapp-based circular communications are used for timely dissemination of academic notices, examination schedules, fee reminders, event updates, and emergency information to students and staff. These multi-channel communication mechanisms ensure wide reach and real-time transparency.

H. Extent of Stakeholder Awareness

The effectiveness of transparency initiatives is reflected in high stakeholder awareness, achieved through ERP access, regular circulars, induction and orientation programs, counseling sessions, website updates, and social media outreach. Students actively use ERP logins for academic and financial information, while faculty and staff engage with e-governance systems. Alumni, parents, and recruiters remain informed through digital platforms, and feedback collected and stakeholder surveys confirms accessibility and awareness of institutional information.

Thus, policies, academic and financial processes, governance decisions, student support, and grievance mechanisms are transparently communicated through ERP systems, institutional websites, and official channels, ensuring effective e-governance and integrated statutory compliance.

GFs Godavari College of Engineering, Jalgaon has established a transparent governance system by making institutional policies, rules, regulations, committee decisions, financial procedures, and academic information readily accessible to all stakeholders. Through systematic dissemination, participative governance, and regular communication, the institute ensures a high level of awareness, accountability, and stakeholder confidence.

9.7 Budget Allocation, Utilization, and Public Accounting at Institute Level (12)

:

Total Income at Institute level: For CFY,CFYm1,CFYm2 & CFYm3
CFY : (Current Financial Year),
CFYm1 : (Current Financial Year minus 1),
CFYm2 : (Current Financial Year minus 2) and
CFYm3 : (Current Financial Year minus 3)

Table 1 - CFY 2025-26

Total Income 131686247.01				Actual expenditure(till…):	Total No. Of Students	Expenditure per student
Fee	Govt.	Grants	Other sources(specify)			
126011175.75	0	0	5675071.26	12,46,58,671.6	2068	60279.82

Table 2 - CFYm1 2024-25

Total Income 90962786.03				Actual expenditure(till…):	Total No. Of Students	Expenditure per student
Fee	Govt.	Grants	Other sources(specify)			
86254460.53	0	0	4708325.50	12,79,84,184.3	1607	79641.68

Table 3 - CFYm2 2023-24

Total Income 78586031.30				Actual expenditure(till…):	Total No. Of Students	Expenditure per student
Fee	Govt.	Grants	Other sources(specify)			
73467926.50	0	0	5118104.80	8,88,67,711.85	1326	67019.39

Table 4 - CFYm3 2022-23

Total Income 73286727.10				Actual expenditure(till…):	Total No. Of Students	Expenditure per student
Fee	Govt.	Grants	Other sources(specify)			
70860873.00	0	0	2425854.10	6,47,23,404.42	1367	47347.04

Items	**Budgeted in 2025-26**	**Actual Expenses in 2025-26 till**	**Budgeted in 2024-25**	**Actual Expenses in 2024-25 till**	**Budgeted in 2023-24**	**Actual Expenses in 2023-24 till**	**Budgeted in 2022-23**	**Actual Expenses in 2022-23 till**
Infrastructure Built-Up	1005000	6178000	0	0	0	0	0	0
Library	100000	57000	430000	405000	200000.(	102000	300000.(	251000.(

Laboratory equipment	400000.(	321000.(	762000.(	759000.(	500000.(	449000.(	400000.(	364000.(
Teaching and non-teaching staf	8000000	7088600	6703700	6703700	4330600	4330600	3886800	3886800
Outreach Programs	0	0	0	0	0	0	0	0
R&D	100000.(	59000.0(	300000.(	262000.(	200000.(	193000.(	100000.(	83000.0(
Training, Placement and Indust	50000.0(	23000.0(	100000.(	84000.0(	200000.(	200000.(	100000.(	15000
SDGs	0	0	50000.0(	18000.0(	10000.0(	1000.00	50000.0(	26000.0(
Entrepreneurship	0	0	0	0	50000.0(	60000.0(	50000.0(	90000.0(
Others, specify	5000000	4707600	3000000	2896900	2200000	2029700	2058600	2036200
Total	**140700000.00**	**124600000.00**	**98679000.00**	**97534000.00**	**66466000.00**	**64608000.00**	**60454000.00**	**60059000.00**

9.8 Program Specific Budget Allocation, Utilization (8)

:

Total Income at Institute level: For CFY,CFYm1,CFYm2 & CFYm3
CFY: (Current Financial Year),
CFYm1 : (Current Financial Year minus 1),
CFYm2 : (Current Financial Year minus 2) and
CFYm3 : (Current Financial Year minus 3)

Table 1 :: CFY 2025-26

Total Budget 4150000.00		Actual expenditure (till…): 4068996.00		Total No. Of Students 178
Demanded	Actual Allocated	Actual Expenditure	% Spent	Expenditure per student
4200000	4150000.00	4068996.00	98.04	22859.53

Table 2 :: CFYm1 2024-25

Total Budget 3400000.00		Actual expenditure (till…): 3329795.00		Total No. Of Students 112
Demanded	Actual Allocated	Actual Expenditure	% Spent	Expenditure per student
3500000	3400000.00	3329795.00	97.93	29730.31

Table 3 :: CFYm2 2023-24

Total Budget 2250000.00		Actual expenditure (till…): 2154971.00		Total No. Of Students 140
Demanded	Actual Allocated	Actual Expenditure	% Spent	Expenditure per student
2500000	2250000.00	2154971.00	95.77	15392.65

Table 4 :: CFYm3 2022-23

Total Budget 2852000.00		Actual expenditure (till…): 2794170.00		Total No. Of Students 180
Demanded	Actual Allocated	Actual Expenditure	% Spent	Expenditure per student
3000000	2852000.00	2794170.00	97.97	15523.17

Items	Budgeted in 2025-26	Actual Expenses in 2025-26 till	Budgeted in 2024-25	Actual Expenses in 2024-25 till	Budgeted in 2023-24	Actual Expenses in 2023-24 till	Budgeted in 2022-23	Actual Expenses in 2022-23 till
Laboratory equipment	50000.0(	17000.0(	300000.(	289000.(	50000.0(	12000.0(	150000.(	111000.(
Software	0	0	0	0	0	0	0	0
SDGs	0	0	0	0	0	0	0	0
Support for faculty developmen	0	0	0	0	0	0	0	0
R & D	0	0	0	0	0	0	0	0
Industrial Training, Industry exp	0	0	0	0	0	0	2000	2000

Faculty, Staff, Student Develop	4100000	4051996	3100000	3040795	2200000	2142971	2700000	2681170
Total	**4150000.00**	**4068996.00**	**3400000.00**	**3329795.00**	**2250000.00**	**2154971.00**	**2852000.00**	**2794170.00**

9.9 Quality of Learning Resources (Hard/Soft) (5)

Institute Marks : 5.00

Godavari Foundations Godavari College of Engineering (GFs GCOE), Jalgaon provides comprehensive learning resources to support effective teaching-learning processes and promote self-directed learning among students. The Central Library and departmental libraries are equipped with a rich collection of print and digital resources that cater to the curricular, co-curricular, and research needs of students and faculty members.

Hard Learning Resources

The institute has a well-established Central Library with a spacious reading hall and digital library facility. The library maintains an extensive collection of textbooks, reference books, handbooks, encyclopedias, previous year question papers, standards, and technical magazines covering all engineering disciplines. Departmental libraries supplement the Central Library by providing frequently referred textbooks, project reports, and specialized reference materials relevant to each programme.

The library collection is continuously updated every academic year based on syllabus revisions, faculty recommendations, student requirements, and feedback received from stakeholders.

The library provides:

- Textbooks and reference books for all programmes
- National and international journals
- Print magazines and newspapers
- Previous year university examination papers

Soft Learning Resources (Digital Library & E-Resources)

To facilitate digital learning, the institute provides access to various online learning resources through the Digital Library. Students and faculty members can access these resources in the Library.

The institute subscribes to:

- DELNET (Developing Library Network)
- National Digital Library of India (NDLI)
- NPTEL Online Courses
- SWAYAM MOOCs
- E-books and e-journals available through subscribed databases

These resources enable students to access quality study material, research papers, conference proceedings, lecture videos, and technical standards.

The institution ensures the quality of learning resources through systematic planning, regular up-gradation, and effective utilization of physical and digital resources to support outcome-based education. These resources are continuously enhanced to meet curriculum requirements, industry expectations, and the diverse learning needs of students.

A. Availability of Learning Resources

In-house Godavari Library Management System: Library uses the in-house library management system to automate acquisition, cataloguing, circulation, OPAC, and reporting activities. The system ensures efficient resource management, quick issue–return services, accurate record maintenance, and easy access to library resources for users. (Refer Table 9.9.1)

Table 9.9.1: Library Resources and Information Access Facilities

Sr. No.	Particulars	Details
1	Program Name	Engineering & Technology
2	Titles	Hardcopies : 4087 Total Copies :12386
3	Volumes	Hardcopies : 22534 Total Copies : 45229
4	Name of Journals	UG Journals : 57
	International Journals	International Journals :18
	National Journals	National Journals :39
5	E-Resources	DELNET: E-Journals – 37,847; E-Books – 1,683 NDL: E-Journals – 3 lakh; E-Books – 7 lakh
6	DBATU's E-consortium	Available
7	Library Facilities	9:00am to 05:00pm
8	Investment till the date	65,47,658.81/-

9	Budget of current year	5,00,000/-
10	Area (In Sqm.)	492. sq. m.
11	Reading Room Capacity	150
12	Reprographic Facility	Available
13	News Paper	English- 3, Marathi- 10, Hindi- 2
14	Library Networking	Available
15	No. of Multimedia PCs	10
16	Type of Access	Open Access
17	Library Management Software	Godavari Foundation LMS (In-house)
18	Bar-code or RF tab book Handling : Available	
19	e-journals	DELNET :1103, NDL : 7 lakh
20	DELNET : 10/05/2026 to 09/05/2027 (Rs. 13570/-) NDL : 29/03/2026 to 29/03/2027 (Free)	

B. Accessibility of Learning Resources

The Central Library plays a vital role in supporting the Engineering & Technology program by providing extensive print and digital resources, including textbooks, reference books, national and international journals, and e-resources through platforms such as DELNET, NDL.

Table 9.9.2: Last three years enhancement

Sr. No.	Details	2023-24	2024-25	2025-26
1	Title	11	17	8
2	Volume	40	81	42
3	Print Journals	00	59	57
4	E- Resources	DELNET: E-Journals – 37,847; E-Books – 1,683 NDL: E-Journals – 3 lakh; E-Books – 7 lakh		

The library follows an open-access system and is equipped with modern facilities and library management software to ensure easy and effective access to information. The well-equipped library significantly enhances teaching–learning and research activities by facilitating access to updated knowledge resources, supporting self-learning, project work, and research. Extended working hours, digital access, and adequate reading space contribute to improved academic performance, research output, and overall student learning experience.

TableNo.9.9.3: Quantitative Examination Learning Resource

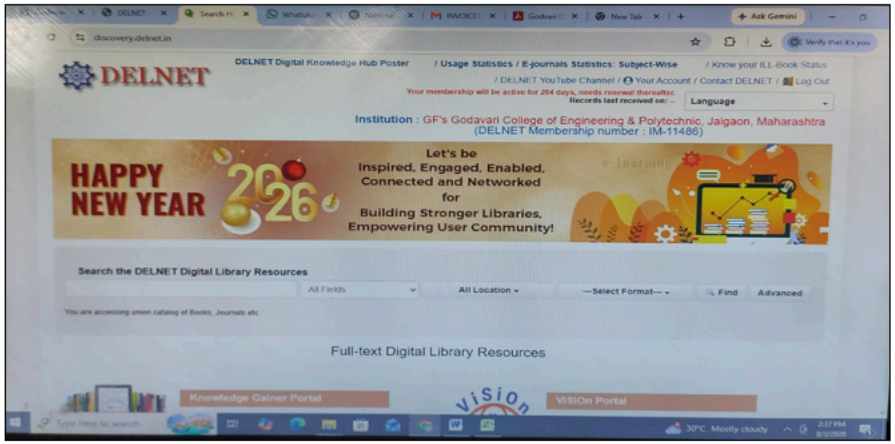
Sr. No.	Particulars	Details
1	Quantitative Examination (GATE, GPAT, MPSC & Other)	150 books

E- Resource:

The institute provides access to a wide range of digital learning resources and platforms to support academic excellence, skill development, and employability. Subscriptions to national and international digital libraries, virtual laboratories, coding platforms, language learning tools, and industry-supported programs ensure continuous learning beyond the classroom and promote self-paced, outcome-based education.

DELNET: (Development Library Network):

E-Book : 1683, E-Journals: 37847



NDL: - National Digital Library § E-Book - 7 lakh (Authors-3 lakh & Languages- 70) § E-Journals - 3 lakh (Authors- 2 lakh) § Videos - 18000 (Video Lectures from Source 11) § Thesis - 95000 (Researches from different Indian Institute)
Virtual Lab: Virtual Labs are available to students to perform experiments remotely using simulation-based and interactive modules. These labs support conceptual understanding and practical learning beyond regular laboratory hours, especially for core engineering subjects.
Code-Chef: Code Chef is used as a programming practice and competitive coding platform to enhance students' problem-solving, logical thinking, and coding skills. Students participate in practice sessions and contests aligned with curriculum requirements.
Language Lab: Globarena English Language Lab is an interactive language learning software designed to improve students English communication skills. It provides activities for Listening, Speaking, Reading, and Writing (LSRW) through self-paced practice modules. The software helps students enhance their vocabulary, pronunciation, grammar, and overall confidence in using English. It offers an engaging and effective learning experience for developing communication skills.
Infosys Springboard: Infosys Springboard is an online digital learning platform offering free courses in technical, professional, and life skills. Students use the platform for self-paced learning, certification courses, and industry-oriented skill development.
Gyanteerth: Gyanteerth Training is a professional training and skill development organization dedicated to empowering students, educators, and professionals through industry-focused learning. It offer workshops, certification programs, soft skills, aptitude, communication, employability, and technology training. Our mission is to bridge the gap between education and industry, enabling career success.
Superset: It is a leading early-career recruitment and campus hiring platform that connects students, colleges, and employers. It enables students to create professional profiles, apply for internships and jobs, take assessments, and participate in campus drives. Colleges manage placement activities efficiently, while recruiters discover and hire skilled talent from across institutions.

TableNo.9.9.4: Access to e-learning Resources

Sr. No.	Particulars	Details
1	DELNET	https://delnet.in/index.html (https://delnet.in/index.html)
2	NDL	https://www.ndl.gov.in/he_browse/subject_he?subject_he%5B%5D=6000%2F6032 (https://www.ndl.gov.in/he_browse/subject_he?subject_he%5B%5D=6000%2F6032)
3	OPAC	https://godavarifoundation.com/LMS/Addaccregister.aspx# (https://godavarifoundation.com/LMS/Addaccregister.aspx)!

4	NPTEL	https://nptel.ac.in/ (https://nptel.ac.in/)
5	Swayam	https://swayam.gov.in/ (https://swayam.gov.in/)
6	Virtual Lab	https://iitb.vlabs.co.in/outreachportal/ (https://iitb.vlabs.co.in/outreachportal/)
7	Code-Chef:	https://www.codechef.com/ (https://www.codechef.com/)
8	Language Lab	Client – Sever on Intranet
9	Infosys Springboard	https://infyspringboard.onwingspan.com/web/en/login/ (https://infyspringboard.onwingspan.com/web/en/login/)
10	Gyanteerth	https://www.gyanteerthlearning.online/ (https://www.gyanteerthlearning.online/)
11	Super set	https://app.joinsuperset.com/#/a/dashboard (https://app.joinsuperset.com/#/a/dashboard)

Print Resources Access during Library Working Hours:

Print resources in the Library are accessible to students and faculty during regular library working hours. During examination periods, library hours are extended to provide enhanced support for study and academic preparation.

Print Journals: To support quality teaching–learning, research, and academic enrichment, the institute subscribes to a wide range of national and international journals across all departments. These journal subscriptions provide faculty members and students with access to recent research findings, emerging technologies, and advancements in their respective disciplines. The table below presents department-wise details of national and international journal subscriptions, highlighting the adequacy and relevance of scholarly resources available to support curriculum delivery, research activities, and continuous professional development.

TableNo.9.9.5: Statistics of Print Journals: National and international journals

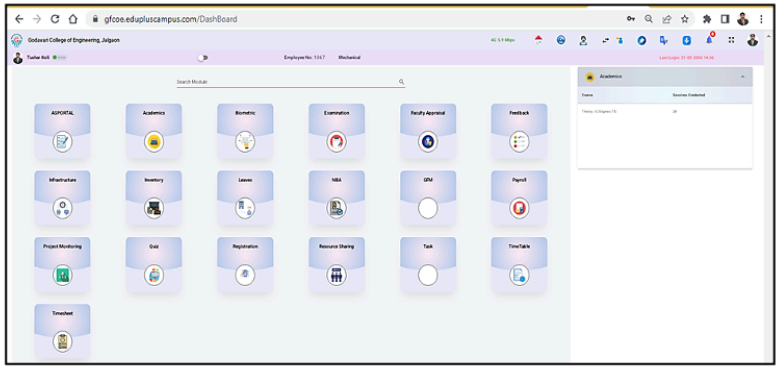
Sr. No.	Departments	Total Journals		Total frequency
		2024-25	2025-26	
1	Computer Engineering	19	18	33
2	Artificial Intelligence Data Science (AIDS)	6	6	17
3	Electronic and Telecommunication Engineering	13	12	39
4	Mechanical Engineering	12	12	18
5	Electrical Engineering	6	6	17

The GFGCOE Digital Library actively supports teaching and self-learning by providing online access to syllabus copies, question papers, OPAC, e-databases, e-resources, newspaper cuttings. Usage data shows maximum participation from all departments. The library is primarily utilized by students (nearly 60%), highlighting its important role in academic preparation, examination support, and independent learning activities.

9.10 E-Governance (5)

Institute Marks : 5.00

Godavari Foundations Godavari College of Engineering (GFs GCOE), Jalgaon has implemented comprehensive **Eduplus Campus ERP** to enhance transparency, efficiency, accountability, and sustainability in academic and administrative processes. The institute integrates Information and Communication Technology (ICT) across academic, examination, administration, finance, library, and student support services to provide a digital ecosystem for all stakeholders.



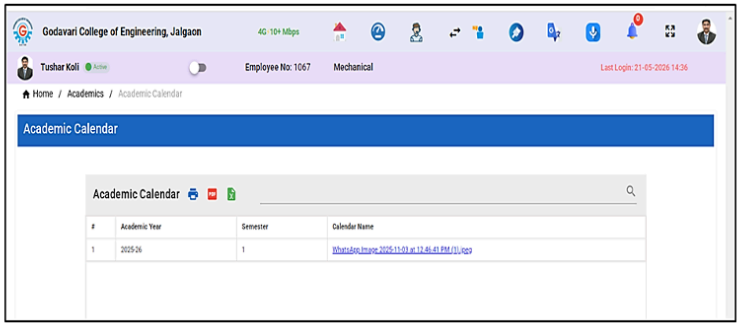
1. Academic and Learning Management

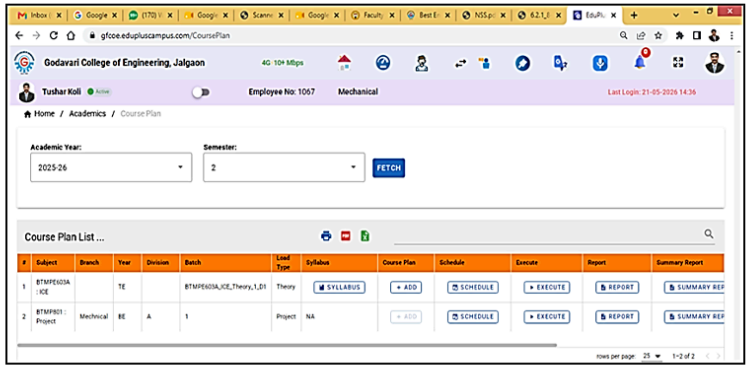
The institute adopts digital platforms to streamline academic planning, teaching-learning, and continuous assessment.

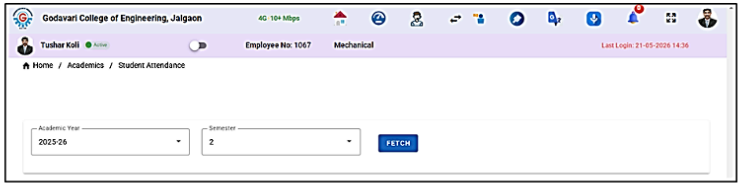
Major initiatives include:

- Learning Management System (LMS) for course delivery
- Academic Calendar published online
- Digital Course Files
- Online attendance monitoring
- Online timetable publication
- Course Outcome (CO) and Program Outcome (PO) attainment software
- Online assignment submission and evaluation
- Digital lesson planning
- Student feedback system
- Mentor-Mentee records maintained digitally

Faculty members upload lecture notes, presentations, laboratory manuals, question banks, assignments, previous question papers, and video lectures for easy student access.







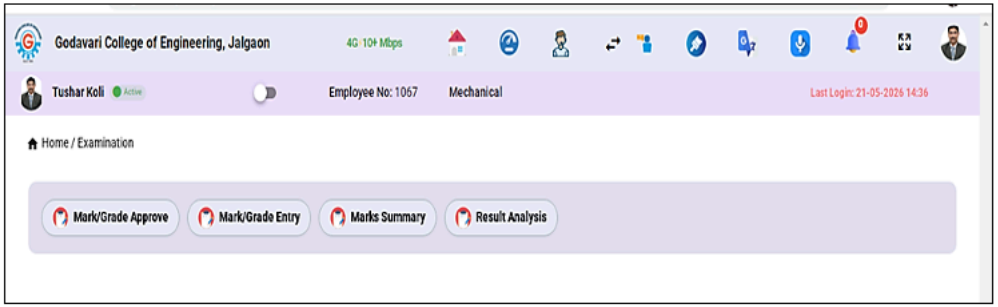
2. Examination Management

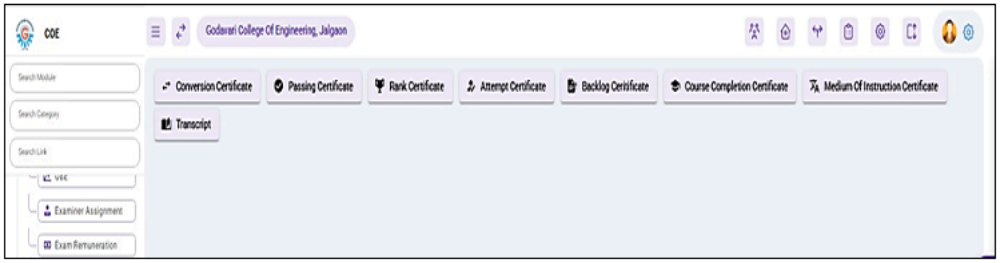
The Examination Cell has adopted e-governance practices for efficient conduct of examinations.

The digital examination system includes:

- Online examination registration
- Digital hall ticket generation
- Online examination timetable
- Internal assessment management
- Online result processing
- Grade card generation
- Digital mark entry by faculty
- Question paper management system
- Examination grievance portal

- Student result analysis







The Controller of Examination ensures secure and transparent examination processes through dedicated examination software.

3. Administration and Governance

Administrative processes are digitized to improve efficiency and reduce paperwork.

Key initiatives include:

- Digital office file management
- Online circulars and notices
- Institutional email communication
- Digital meeting notices
- Faculty service records
- Document digitization

The institute website serves as a central platform for dissemination of institutional information, notices, policies, academic regulations, and mandatory disclosures.

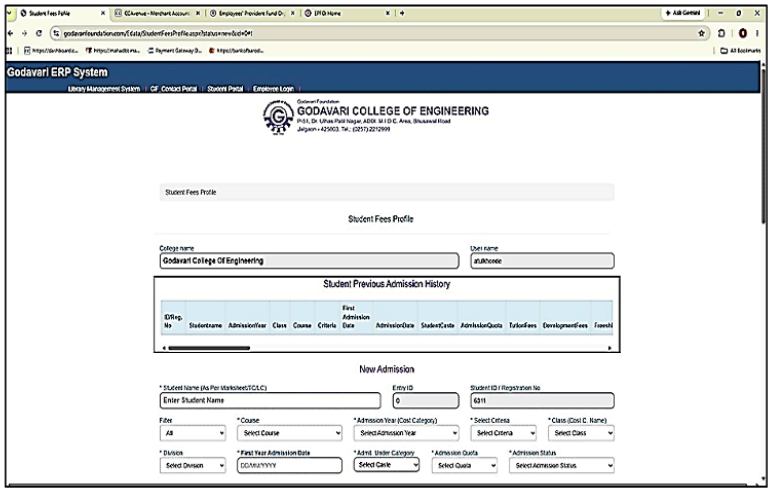
4. Finance and Accounts

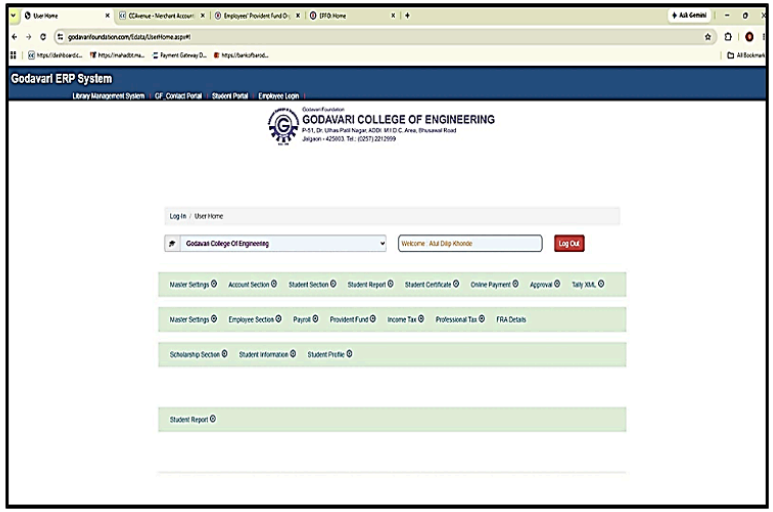
The Accounts Section utilizes computerized financial management systems for maintaining transparency and accuracy.

Digital financial practices include:

- Computerized accounting
- Online fee payment
- Digital receipts
- Salary processing
- Budget management
- Audit record management
- PF and statutory compliance
- Bank reconciliation
- Digital financial reporting

These systems ensure efficient financial governance and timely reporting.





6. Campus-wide Computing Resources

The institute has established robust ICT infrastructure to support academic, research, and administrative activities.

The campus computing facilities include:

- High-speed Internet connectivity
- Campus-wide Wi-Fi
- Fibre optic network backbone
- Computer laboratories with latest hardware
- Smart classrooms
- LCD projectors
- Interactive panels
- Digital seminar halls
- Central computing facilities
- Language laboratory
- CCTV-enabled campus
- Power backup through UPS and generators

The computing resources are regularly upgraded to meet evolving academic and technological requirements.

9. Support for Academic and Professional Activities

The e-governance ecosystem supports faculty and students through:

- NPTEL and SWAYAM course access
- National Digital Library (NDLI)
- DELNET membership
- Research database access
- Online FDPs and webinars
- Virtual laboratories
- Placement preparation portals
- Online aptitude tests
- Career guidance sessions

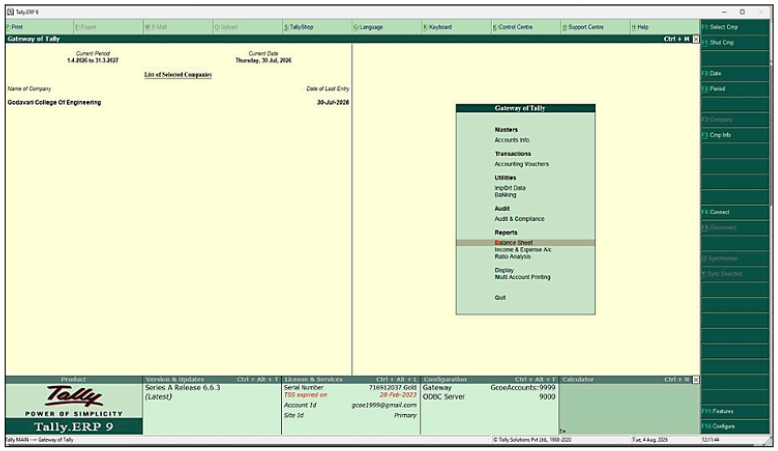
Faculty members use these resources for curriculum delivery, research, consultancy, publication, and professional development, while students utilize them for self-learning, projects, internships, placement preparation, and higher education.

- **Academic Support Module:** The Academic Support Module strengthens the teaching–learning process and supports OBE implementation. It includes curriculum and course management, lesson planning, timetable allocation, faculty workload management, internal assessment tracking, CO-PO-PSO mapping, and attainment calculation. The module enables data-driven academic planning and continuous improvement.
- **Finance Module:** The Finance Module ensures transparent and efficient financial management through student fee collection, online payment integration, scholarship accounting, budget monitoring, payroll management, and audit-ready reports. It supports effective resource planning and utilization.
- **Examination System Module:** The Examination Module manages the complete examination lifecycle, including exam scheduling, hall tickets, marks entry, result processing, grade generation, revaluation, and performance analysis. Examination assessments are mapped to course outcomes, supporting outcome attainment analysis.
- **Reporting and Governance:** The ERP generates real-time dashboards and reports on student performance, outcome attainment, faculty workload, financial utilization, and feedback analysis, supporting evidence-based decision making.The ERP system has significantly enhanced academic efficiency, student support services, financial transparency, and examination integrity. It serves as a strong digital backbone for continuous quality improvement in alignment with the OBE framework.

Tally ERP 9

The institute has implemented the Tally ERP 9 Accounting and Finance Module to ensure efficient financial management, transparency, and compliance with statutory and accreditation requirements as part of its institutional ERP system.

- Automates accounting and financial processes, reducing manual errors and improving accuracy.
- Supports real-time financial data generation for informed managerial decision-making.
- Used by the Accounts and Finance Section for student fee collection, payroll processing, and expenditure management.
- Enables head-wise fee recording, transparent tracking, and easy reconciliation of accounts.
- Automates salary processing for teaching and non-teaching staff, including statutory deductions (PF, PT, and Income Tax).
- Maintains accurate ledgers, vouchers, and statutory records in compliance with government and audit norms.
- Generates audit-ready reports such as trial balance, income and expenditure statements, balance sheet, and fund utilization reports.
- Improves financial transparency, reduces paperwork, and enables faster report generation.
- Integrated with admission and payroll systems for seamless data flow and effective financial monitoring.



The institute has implemented a comprehensive e-governance framework to enhance efficiency, transparency, and effectiveness in academic, administrative, and support services through the use of digital platforms and ICT tools.

E-Governance in Academic and Administrative Processes

- Eduplus ERP manage admissions, academics, examinations, finance, HR, and payroll.
- Supports online admission, examination processing, faculty workload, and financial operations.

Digital Communication and Collaboration

- Gmail, Whats app etc
- Promotes paperless communication and efficient documentation.

Library Automation and Knowledge Resources

- Inhouse Library software automates library operations including circulation, cataloguing, and OPAC.
- Enhances digital access and effective utilization of library resources.

Campus-Wide Computing Resources and Accessibility

- Campus-wide LAN, Wi-Fi, and department-wise computer labs are provided.
- Ensures secure and seamless access to ERP, LMS, and digital services.

Outcome

The implementation of comprehensive e-governance practices has significantly enhanced the overall efficiency, transparency, and effectiveness of institutional operations. By adopting digital systems across administration, academics, examinations, and student support services, the institution has achieved improved transparency and accountability in its governance processes. Administrative activities have become faster and more streamlined, while the teaching–learning process has been strengthened through the effective use of digital platforms and learning management systems. Examination management has become more efficient, ensuring timely conduct of assessments, result processing, and dissemination of information. The institution has also witnessed better academic monitoring through real-time data and analytics, enabling informed decision-making. The adoption of e-governance has contributed to increased digital literacy among faculty members and students, fostering a technology-enabled learning environment. Furthermore, paperless administration has promoted sustainable campus practices by reducing the use of physical documents. Enhanced accessibility to digital learning resources and institutional services has improved the overall academic experience, resulting in higher stakeholder satisfaction. Collectively, these initiatives have strengthened institutional governance by promoting efficiency, accountability, responsiveness, and continuous quality improvement.

9.11 Initiatives and Implementation of Sustainable Development Goals (SDGs) (10)

Institute Marks : 10.00

Godavari College of Engineering, Jalgaon has adopted a clear and structured institutional policy to promote sustainable development in alignment with the United Nations Sustainable Development Goals (SDGs). The policy emphasizes clean and renewable energy adoption, conservation of natural resources, waste reduction, water preservation, social inclusion, health, gender equality, and quality education. Sustainability principles are integrated into institutional planning, infrastructure development, academic delivery, and community outreach activities through NSS and other societal engagement programs. The institute ensures periodic review, and continuous improvement of SDG-related initiatives in line with national priorities and regulatory frameworks.

The sustainability policy is implemented through a comprehensive approach that integrates campus-based initiatives, academic activities, and community-oriented programs. At the infrastructure level, the institute has installed a 5 kW rooftop solar photovoltaic power plant to promote clean energy usage, LED lighting systems, and energy-efficient electrical infrastructure. Water conservation measures include rainwater harvesting systems, while waste management is addressed through bio-composting, responsible disposal practices, plastic-free campus drives, and paperless digital operations. In parallel, the institute actively implements SDGs through structured outreach and extension programs coordinated under NSS, including tree plantation drives, Swachh Bharat Abhiyan cleanliness campaigns, water conservation activities, plastic-free environment awareness programs.

Health and social well-being are promoted through blood donation camps, health check-up camps, yoga and fitness awareness programs, and public health awareness initiatives. Programs focusing on education, democratic values, and social empowerment include literacy and education awareness drives, voter awareness programs, Constitution Day and National Unity Day celebrations, and Sustainability is further integrated into academics through SDG-mapped student projects addressing renewable energy, smart agriculture, environmental monitoring, waste management, thereby strengthening the linkage between academic learning and societal needs.

The implementation of SDG initiatives is supported by documented and verifiable evidence, including Energy, Environmental, and Green Audit reports conducted by certified external agencies. Institutional records such as audit reports, infrastructure documentation, NSS activity reports, photographs, beneficiary data, and academic records of SDG-aligned projects provide adequate evidence of effective implementation. These mechanisms ensure transparency, accountability, and continuous monitoring of sustainability initiatives.

As a result of systematic policy implementation, inclusive outreach, and continuous monitoring, the institute has achieved measurable and sustainable outcomes aligned with multiple SDGs. These outcomes include dependence on conventional energy sources, improved water and waste management practices, enhanced environmental quality of the campus, and increased awareness of sustainability among students and the surrounding community. Community outreach programs have benefitted a large number of citizens through initiatives related to health, education, environmental protection, and social empowerment, thereby reflecting the institute’s sustained efforts toward institutionalizing sustainable development practices.

- **SDG 1 – No Poverty:** Community outreach and village adoption programs under NSS and support socio-economic awareness and inclusive development.
- **SDG 3 – Good Health and Well-Being:** Blood donation camps, health check-up camps, yoga and fitness programs, promote physical and mental well-being.
- **SDG 4 – Quality Education:** Literacy drives, education awareness programs, voter education initiatives, and SDG-mapped student projects strengthen learning outcomes and social responsibility.
- **SDG 5 – Gender Equality:**Gender equality awareness initiatives empower girl students and promote gender equity.
- **SDG 6 – Clean Water and Sanitation:** Rainwater harvesting systems, water conservation drives, and Swachh Bharat Abhiyan cleanliness campaigns support sustainable water management.
- **SDG 7 – Affordable and Clean Energy:** Installation of a 5 kW rooftop solar photovoltaic plant, LED lighting.
- **SDG 11 – Sustainable Cities and Communities:** Village adoption, cleanliness drives, and smart city–oriented student projects contribute to sustainable community development.
- **SDG 12 – Responsible Consumption and Production:** Plastic-free campus initiatives, responsible waste disposal, and paperless digital operations promote sustainable resource use.
- **SDG 13 – Climate Action:** Tree plantation drives, environmental monitoring activities, and awareness programs contribute to climate resilience and environmental protection.
- **SDG 16 – Peace, Justice and Strong Institutions:** Constitution Day and National Unity Day celebrations and voter awareness programs promote democratic values and responsible citizenship.
- **SDG 17 – Partnerships for the Goals:** NSS activities, health and sanitation drives, and selected technical workshops conducted with external stakeholders promote collaborative engagement, shared responsibility, and effective implementation of community-oriented and sustainability initiatives.

Sustainability initiatives are effectively integrated with **Outcome-Based Education (OBE)** through SDG-aligned student projects focusing on areas such as renewable energy, smart agriculture, waste management, and environmental monitoring. These projects enable students to apply theoretical knowledge to real-world sustainability challenges, thereby enhancing learning outcomes and societal relevance. The implementation and impact of these initiatives are systematically assessed through **Energy, Environmental, and Green Audits** conducted by certified agencies, along with supporting evidence such as NSS activity reports, photographs, beneficiary data, and academic records, ensuring transparency and accountability. As a result, the institute has achieved measurable outcomes including improved water and waste management practices, enhanced environmental quality of the campus, and increased sustainability awareness among students and the surrounding community.

Table 9.11.1: SDG-Based Institutional Initiatives and PO Attainment

Sr. No.	Activity / Project Title	SDG(s) Mapped	PO Mapped	Description / Implementation Details	Application Area / Domain	Learning Outcome / Impact
1	Grid-Connected Solar PV Plant	SDG 7	PO6, PO7	5 kW rooftop solar PV plant	Renewable Energy	Clean energy adoption and sustainability awareness
2	Carbon Reduction Initiatives	SDG 13	PO6, PO7	Carbon emission reduction through renewable energy usage, LED, Digital communication	Climate Action	Understanding of carbon footprint mitigation
3	Rainwater Harvesting System	SDG 6	PO6, PO7	Rooftop rainwater collection and reuse system	Water Conservation	Sustainable water management awareness
4	Solid & E-Waste Management	SDG 12	PO6, PO7	Waste segregation, composting, and authorized e-waste disposal	Waste Management	Responsible consumption practices
5	Tree Plantation Drives	SDG 13, 15	PO6, PO7	Tree plantation through NSS and institutional drives	Environment	Ecological and environmental awareness
6	Swachh Bharat Cleanliness Drives	SDG 11,SDG 17	PO6, PO7	Cleanliness drives on campus and in nearby communities	Public Health	Civic responsibility and hygiene awareness
7	Blood Donation Camp	SDG 3, SDG 17	PO6, PO8	Voluntary blood donation for healthcare support	Healthcare	Social responsibility and communication skills
8	Health Check-up Camp	SDG 3, SDG 17	PO6	Free health screening and medical consultation	Public Health	Preventive healthcare awareness
9	Village Adoption Program	SDG 1, 11, SDG 17	PO6, PO9	Community development and awareness activities	Rural Development	Teamwork and societal engagement
10	Literacy & Education Awareness	SDG 4	PO6, PO8	Literacy drives and educational awareness programs	Education	Communication and social outreach skills
11	Voters' Awareness Program	SDG 16	PO6, PO8	Electoral awareness and democratic participation	Governance	Civic awareness and communication
12	Special NSS Residential Camp (Beli Village)	SDG 3, 4, 11, 17	PO6, PO9, PO10	7-day rural service and development camp	Community Service	Ethical responsibility and teamwork
13	Plastic-Free Environment	SDG 12, 13, SDG 17	PO6, PO7	Community awareness on plastic reduction	Sustainability	Environmental responsibility
14	All-in-One STEM Box	SDG 4, 9	PO1, PO2, PO3, PO5	Integrated electronics learning kit for students	Education / STEM	Hands-on electronics and programming

15	IoT Based Smart Power Factor Control	SDG7, SDG9, SDG12	PO1 to PO12	Low power factor causes increased losses and penalties in power systems.	Power Systems, IoT, Energy Management	Reduced energy losses, improved power quality, efficient energy utilization.
16	Home Automation Using Arduino Controller Wi-Fi.	SDG7, SDG9, SDG11	PO1 to PO12	Manual control of home appliances leads to energy wastage and inconvenience.	Home Automation, IoT	Energy conservation and improved living comfort.
17	Development Of Single Phase Inverter	SDG7, SDG9	PO1 to PO12	Need for AC supply from DC sources in backup and renewable systems.	Power Electronics, Renewable Energy	Supports renewable energy and backup power systems.
18	Ardunio Controller For Practical Applications	SDG4, SDG9	PO1 to PO12	Need for low-cost automation and control systems.	Embedded Systems, Automation	Enhances technical skills and innovation capabilities.
19	Ac Induction Motor Speed Controlling	SDG7, SDG9, SDG12	PO1 to PO12	Fixed-speed motors consume excess energy in variable-load applications.	Industrial Drives, Automation	Energy savings and increased industrial productivity.
20	Solar power grid status monitoring and alerting with Android smart phone technology.	SDG7, SDG9, SDG13	PO1 to PO12	Difficulty in monitoring solar plant performance remotely.	Solar PV, IoT, Renewable Energy	Improved reliability of renewable energy systems and reduced carbon emissions.
21	Solar based Audio systems for announcement in classrooms	SDG7, SDG4, SDG13	PO1 to PO12	Conventional announcement systems depend entirely on grid electricity.	Educational Infrastructure, Renewable Energy	Green energy utilization and uninterrupted communication.
22	Battery-Management System (BMS) and SOC Development for Electrical Vehicles	SDG 7, SDG 9, SDG11, SDG13	PO1 to PO12	Battery safety and accurate charge estimation are major EV challenges.	Electric Vehicles, Battery Technology	Promotes electric mobility and reduction in greenhouse gas emissions.
23	Solar Inverter	SDG 7, SDG 9, SDG 13	PO1 to PO12	A solar inverter converts DC power from PV panels into usable AC power with suitable control and protection circuitry.	Solar PV, Power Electronics	Develops knowledge of DC-AC conversion and renewable-energy integration.
24	3KW Solar rooftop system for air conditioner	SDG 7, SDG 9, SDG 11, SDG 13	PO1 to PO12	A 3 kW rooftop PV system is studied/designed to supply an air-conditioning load and reduce grid energy consumption.	Solar Energy, Building Energy Management	Demonstrates renewable-energy sizing, load analysis and reduction of conventional electricity consumption.
25	Two wheeler Ev charger study for India	SDG 7, SDG 9, SDG 11, SDG 13	PO1 to PO12	Charging requirements, charger topology, charging time, battery characteristics and safety aspects of two-wheeler EVs are studied.	Electric Vehicles, EV Charging	Develops understanding of EV charging infrastructure and promotes sustainable mobility.

26	Multicolour Scrolling LED display	SDG 4, SDG 9, SDG 11	PO1 to PO12	A microcontroller-based LED matrix is programmed to display scrolling messages using multiple colours.	Embedded Systems, Digital Electronics, Display Systems	Develops skills in microcontroller programming, digital interfacing and real-time display control.
27	Mark Management System for GFGCOE, Jalgaon	SDG 4, SDG 9, SDG 16	PO1 to PO12	A digital system is developed for storing, processing, calculating and retrieving student marks and academic records.	Educational Management, Software Application	Improves digital record management, data accuracy, transparency and administrative efficiency.
28	Four wheeler EV batteries study project.	SDG 7, SDG 9, SDG 11, SDG 13	PO1 to PO12	Battery types, ratings, charging methods, thermal management, safety and performance characteristics of four-wheeler EV batteries are studied.	Electric Vehicles, Energy Storage	Develops knowledge of EV battery technology and sustainable transportation systems.
29	DRONE Technology	SDG 4, SDG 9, SDG 11	PO1 to PO12	A drone system is studied/developed using motors, ESCs, sensors, flight controller and wireless communication.	Embedded Systems, Automation	Develops multidisciplinary skills in electronics, control, communication and embedded systems.
30	Smart Defender	SDG 9, SDG 11, SDG 16	PO1 to PO12	A smart security system using sensors, controller and alert mechanisms is developed to detect unauthorized access or hazardous conditions.	Smart Security, IoT, Automation	Enhances skills in sensor interfacing, automation and real-time security monitoring.
31	Home automation	SDG 7, SDG 9, SDG 11	PO1 to PO12	Electrical appliances are automatically controlled using sensors, switches and a microcontroller-based control system.	Smart Home, IoT, Automation	Promotes energy conservation, convenience, automation and intelligent appliance control.
32	Solar Air Conditioner Inverter	SDG 7, SDG 9, SDG 11, SDG 13	PO1 to PO12	Solar PV power is interfaced with an inverter-based air-conditioning system to reduce dependence on conventional grid supply.	Solar Energy, HVAC, Power Electronics	Develops understanding of solar power conversion and energy-efficient cooling systems.
33	Solar Air Conditioner	SDG 7, SDG 9, SDG 11, SDG 13	PO1 to PO12	Solar energy is utilized to operate/support an air-conditioning system through suitable PV and power-conditioning arrangements.	Renewable Energy, HVAC	Demonstrates application of solar energy for cooling and promotes reduction in conventional energy consumption.
34	Energy monitoring system through website	SDG 7, SDG 9, SDG 12	PO1 to PO12	Energy parameters are measured using sensors and uploaded to a web-based platform for real-time monitoring and analysis.	IoT, Energy Management, Web Technology	Develops skills in energy monitoring, IoT communication and data visualization; promotes energy conservation.

35	Smart Energy Meter by Using IoT	SDG 7, SDG 9, SDG 11, SDG 12	PO1 to PO12	Voltage, current, power and energy consumption are measured and transmitted through IoT for remote monitoring.	Smart Grid, IoT, Energy Management	Develops knowledge of smart metering and encourages efficient energy utilization.
36	Automatic Curtain Mover	SDG 7, SDG 9, SDG 11	PO1 to PO12	Sensors and a motor-control mechanism are used to automatically open/close curtains based on predefined conditions or user commands.	Home Automation, Smart Building	Develops automation and sensor-control skills while improving comfort and energy management.
37	Student Record Management System for department	SDG 4, SDG 9, SDG 16	PO1 to PO12	A computerized database system is developed to maintain student information, academic records and departmental data.	Educational Management, Information Systems	Improves data management, accessibility, accuracy, transparency and administrative efficiency.
38	Door Lock open using Fingerprint sensor	SDG 9, SDG 11, SDG 16	PO1 to PO12	A biometric security system uses a fingerprint sensor and microcontroller to authenticate users and operate an electronic door lock.	Security Systems, Embedded Systems, IoT	Develops skills in biometric authentication, embedded control and electronic security.
39	LORA Based automatic water level controller	SDG 6, SDG 7, SDG 9, SDG 11, SDG 12	PO1 to PO12	Water level sensors monitor tank levels and LoRa communication enables remote monitoring/control of a pump to avoid overflow and dry running.	Water Management, IoT, Smart Agriculture	Promotes water conservation, automation and efficient electrical pump operation.
40	Solar base mobile fast charging point at GCOE campus	SDG 7, SDG 9, SDG 11, SDG 13	PO1 to PO12	A solar PV system with battery storage and suitable charging electronics is designed to provide mobile charging facilities on campus.	Renewable Energy, Smart Campus, EV/USB Charging	Demonstrates practical renewable-energy utilization and promotes clean-energy awareness on campus.
41	Home Automation using Amazon ALEXA	SDG 7, SDG 9, SDG 11	PO1 to PO12	Voice commands through Alexa are integrated with smart switches/controllers to operate home appliances.	IoT, Smart Home, Automation	Develops knowledge of voice-based automation, IoT integration and energy-efficient appliance control.
42	Solar power monitoring system using Microcontroller	SDG 7, SDG 9, SDG 13	PO1 to PO12	A microcontroller-based system measures PV voltage, current, power and energy and displays/stores the measured parameters.	Solar PV, Embedded Systems, Energy Monitoring	Develops skills in sensor interfacing and renewable-energy performance monitoring.
43	Smart Agriculture security pole	SDG 2, SDG 9, SDG 11, SDG 15	PO1 to PO12	Sensors and a controller are used to detect intrusion/animal movement in agricultural fields and activate alarms or alerts.	Smart Agriculture, IoT, Security	Supports agricultural security, reduces crop damage and develops IoT-based monitoring skills.

44	AcciDetect – Accident Detection and Prediction System	SDG 3, SDG 9, SDG 11	PO1,PO2,PO3,PO4,PO5,PO6,PO7	Develop an intelligent system to detect road accidents using computer vision/ML and predict accident-prone situations based on historical, traffic, environmental and contextual data. The system can generate alerts and support timely emergency response.	Artificial Intelligence & Machine Learning; Computer Vision; Intelligent Transportation Systems; Smart Cities	Students learn to apply ML/computer vision techniques to real-world safety problems, perform data preprocessing and model evaluation, and develop an intelligent accident detection/prediction solution. The system can contribute to faster emergency response and improved road safety.
45	Crowd-Sourced Civic Issues Reporting and Resolution System	SDG 9, SDG 11, SDG 16	PO1,PO2,PO3, PO5,PO6, PO7,PO10	Develop a web/mobile-based platform through which citizens can report civic issues such as potholes, garbage, damaged streetlights, drainage problems and water leakage. Authorities can verify, assign, track and resolve reported issues.	Smart City; E-Governance; Civic Technology; Web/Mobile Application Development	Students learn to design citizen-centric digital platforms, implement location-based reporting, database management, authentication and issue tracking. The project promotes citizen participation, transparency and efficient civic service delivery.
46	Retail Sales Forecasting and Insights using ML and LSTM in an Automated Data Pipeline	SDG 8,SDG 9, SDG 12	PO1, PO2,PO3, PO4, PO5, PO8, PO9, PO11	Implement an automated data pipeline for collecting, preprocessing and transforming retail sales data. ML and LSTM-based models are used for time-series sales forecasting, trend analysis and generation of business insights.	Machine Learning; Deep Learning; Data Analytics; Retail Analytics; Business Intelligence	Students gain practical knowledge of data pipelines, time-series analysis, ML/LSTM models and data visualization. The system supports demand forecasting, inventory planning and data-driven business decision-making.
47	Implementation of Firewall in Network for Security	SDG 9,SDG 16	PO1, PO2, PO3, PO4,PO5, PO6, PO8	Design and implement a network firewall to monitor and control incoming and outgoing network traffic based on predefined security rules. The project may include packet filtering, access control, logging, rule configuration and detection/blocking of unauthorized traffic.	Computer Networks; Cybersecurity; Network Security; Information Security	Students understand network security principles, firewall architecture, packet filtering and access-control mechanisms. The project develops practical skills in securing network infrastructure and protecting systems from unauthorized access and malicious traffic.

48	Women Safety App	SDG 5, SDG 11,SDG 16	PO1, PO2,; PO3, PO4, PO5, PO6, PO8, PO10	Develop a mobile/web-based safety application that enables users to quickly seek assistance during emergency situations. Features may include SOS/emergency alerts, GPS-based location sharing, trusted contacts, emergency calling, live location tracking, safety notifications and incident reporting. The system can use mobile sensors, GPS, cloud services and secure databases to provide rapid assistance and improve personal safety.	Mobile Application Development; Women Safety; Personal Security; IoT & Location-Based Services; Smart City	Students learn to develop safety-oriented mobile applications using GPS, real-time communication, cloud/database services and secure authentication. The project demonstrates how technology can support emergency response, personal security and safer communities. It also develops awareness of **ethical, privacy and security considerations** when handling sensitive location and user data.
49	ALMA ORB Web App	SDG 9, SDG 11	PO1, PO2, PO3, PO5, PO9, PO10, PO11	Develop a web-based application integrating user interaction, database management, authentication, APIs and relevant intelligent/automation features. The system can provide centralized access to services and information through a responsive web interface.	**Web Application; Full-Stack Development; Digital Services**	Students learn web application architecture, frontend/backend development, database integration, API usage and deployment. The project develops skills in building user-centric digital solutions.
50	JARVI: AI Assistant	SDG 4,SDG 8, SDG 9	PO1, PO2, PO3, PO4, PO5, PO6, PO8, PO10	Develop an AI-powered virtual assistant capable of understanding user queries and providing relevant responses or performing predefined tasks. The system may use NLP, LLMs, speech recognition, text-to-speech, APIs and knowledge bases/RAG.	Generative AI; NLP; Conversational AI; Intelligent Assistant	Students learn NLP, conversational AI, prompt engineering, API integration, knowledge retrieval and AI model evaluation. The system demonstrates practical applications of AI for automation and personalized assistance.
51	Healthcare System	SDG 3,SDG 9, SDG 10	PO1, PO2, PO3, PO5, PO6, PO8, PO10, PO11	Develop a digital healthcare platform for patient registration, appointment scheduling, doctor/patient management, medical records and healthcare-related services. The system can incorporate secure authentication and data management.	Healthcare Technology; E-Healthcare; Web/Mobile Application; Health Informatics	Students learn to design technology-driven healthcare solutions, manage structured data, implement secure access and develop user-friendly applications. The system can improve accessibility, organization and efficiency of healthcare services.

52	Project Learning System	SDG 4, SDG 9	PO1, PO2, PO3, PO5, PO9, PO10, PO11	Develop an online platform for managing project-based learning activities, including project registration, team formation, topic selection, progress tracking, submission, evaluation and feedback.	EdTech; E-Learning; Project Management System; Educational Technology	Students learn requirements analysis, database design, web development, workflow management and user-role implementation. The system facilitates systematic project monitoring, collaboration and evaluation.
53	Tourism Management System	SDG 8, SDG 9,SDG 11, SDG 12	PO1, PO2, PO3, PO5, PO6, PO7, PO9, PO10, PO11	Develop a digital tourism platform providing destination information, tour packages, hotel/transport information, itinerary planning, booking and review/rating facilities. The system may use location-based services and recommendation features.	Tourism Technology; Travel Management; Web/Mobile Application; Smart Tourism	Students learn full-stack development, database management, location-based services, recommendation systems and online booking workflows. The project can improve tourism accessibility, planning and management while encouraging sustainable tourism practices.

Overall, the institute has effectively integrated sustainability initiatives with Outcome-Based Education (OBE) and the Sustainable Development Goals (SDGs) through a wide range of institutional practices, community outreach activities, and SDG-mapped student projects.

These initiatives have enabled students to apply engineering knowledge to real-world societal and environmental challenges, resulting in measurable learning outcomes such as enhanced technical competence, environmental awareness, social responsibility, teamwork, and ethical values. Systematic assessment through certified audits, documented records, and stakeholder feedback ensures transparency, accountability, and continuous improvement. The tangible outcomes—reduced carbon footprint, improved water and waste management, strengthened community engagement, and increased sustainability awareness—clearly demonstrate the institute's commitment to institutionalizing sustainable development practices

Outcome and Impact

Implementation of SDG initiatives has resulted in:

- Increased use of renewable energy.
- Reduced electricity consumption through LED lighting.
- Enhanced campus greenery.
- Greater awareness among students regarding sustainability.
- Increased number of research projects addressing SDGs.
- Higher student participation in community outreach programmes.
- Growth in innovation, patents, and entrepreneurship.
- Improved environmental consciousness across stakeholders.
- Contribution towards achieving the United Nations Sustainable Development Goals.

9.12 Innovative Educational Initiatives and Implementation (5)

Institute Marks : 5.00

Godavari Foundations Godavari College of Engineering (GFs GCOE), Jalgaon has adopted innovative educational practices in line with the **National Education Policy (NEP) 2020**, AICTE guidelines, and the affiliating university regulations. The institute promotes student-centric learning by integrating multidisciplinary education, academic flexibility, Indian Knowledge System (IKS), value-based education, inclusivity, and Outcome-Based Education (OBE). These initiatives enable students to become technically competent, socially responsible, ethically conscious, and globally competitive professionals

Godavari College of Engineering, Jalgaon has implemented innovative, NEP-2020–aligned initiatives to promote student mobility, inclusivity, and flexible learning. The institute has adopted the Academic Bank of Credits (ABC) as per UGC guidelines, enabling seamless credit earning, transfer, and redemption through SWAYAM/NPTEL, MOOCs, inter-institutional electives, and value-added skill courses such as Code Chef. Regular orientation programs and academic collaborations with other Higher Education Institutions further strengthen multiple entry–exit awareness and enrich students' academic exposure.

Initiatives Taken Towards Mobility of Students

The institute has undertaken several initiatives to promote academic and professional mobility of students in line with NBA and NEP-2020 guidelines. The Choice Based Credit System (CBCS) is implemented, allowing students to select electives across departments and enabling horizontal mobility within the institute. The curriculum provides flexibility for interdisciplinary learning and supports credit equivalence.

In compliance with UGC regulations, the institute has implemented the Academic Bank of Credits (ABC). Students are encouraged to earn credits through SWAYAM/NPTEL MOOCs.

The institute actively facilitates student internships, industrial training, and project work in collaboration with industries, research organizations, and academic institutions. These opportunities allow students to gain exposure to diverse work environments and practical learning experiences beyond the parent institute, thereby promoting professional mobility. Students are also encouraged and financially supported to participate in workshops, conferences, competitions, and certification programs conducted by other institutions and professional bodies. Academic leave, mentoring support, and recognition of participation are provided to ensure continuity in learning while encouraging external exposure.

Key Initiatives for Holistic Education and Inclusivity:

- **Holistic and Value-Based Education:** Integration of Universal Human Values, ethics, environmental studies, sustainability, yoga, meditation, and wellness programs to promote professional ethics, social responsibility, and overall well-being.
- **Multidisciplinary & Experiential Learning:** Promotion of multidisciplinary and interdisciplinary learning through open electives across engineering, science, humanities, management, and arts, along with project-based learning, internships, industry-linked problem-solving, seminars, and workshops.
- **Research, Innovation & Indian Knowledge System (IKS):** Strengthening research culture through minor projects, innovation cells, incubation initiatives, and promotion of Indian Knowledge System via guest lectures, curriculum integration, and celebration of Indian heritage and national days.
- **Inclusivity, Equity & Support for Slow Learners:** Implementation of scholarships, fee concessions, reservation policies, counselling, mentoring, and structured remedial measures including diagnostic tests, tutorial sessions, peer mentoring, and continuous academic monitoring.
- **Support for Physically Challenged Students:** Provision of a barrier-free campus with accessible infrastructure, academic accommodations such as extra exam time, scribes, flexible attendance, digital learning resources, and dedicated mentoring and counselling to ensure equal participation and dignity.

Objectives: In alignment with NEP-2020, the institute has adopted a learner-centric approach to foster academic flexibility, holistic development, and inclusive education. These initiatives aim to create an equitable, multidisciplinary, and value-driven learning environment for all students.

- To enhance student mobility and academic flexibility through the Academic Bank of Credits (ABC).
- To implement holistic education by integrating human values, ethics, wellness, and sustainability into the curriculum.
- To promote multidisciplinary and interdisciplinary learning across diverse academic domains.
- To create awareness and integrate the Indian Knowledge System (IKS) into teaching–learning practices.
- To ensure equity, inclusivity, and accessibility for economically, socially, and physically challenged students.
- To identify and support slow learners through structured academic monitoring and targeted remedial interventions.

Student Mobility & Academic Bank of Credits (ABC):

- Implementation of Academic Bank of Credits (ABC) as per UGC guidelines
- Credit earning and transfer through SWAYAM/NPTEL, MOOCs, and inter-institutional electives
- Orientation programs on ABC and multiple entry–exit options
- Collaborations with other HEIs for academic mobility and exposure
- Skill-based and value-added courses (e.g., Code Chef, industry certifications)

Holistic Education & Human Values

- Courses on Universal Human Values, ethics, environmental studies, and sustainability
- Yoga, meditation, wellness, and stress-management programs
- Emphasis on professionalism, social responsibility, and leadership skills

Multidisciplinary & Interdisciplinary Curriculum

- Open electives across engineering, science, humanities, management such as Product life cycle management, Personal Finance Management etc and arts such as Constitution of India, Universal Human Value etc.
- Interdisciplinary projects, seminars, workshops, and minor projects

- Project-based learning, internships, and industry-linked problem-solving activities

Indian Knowledge System (IKS)

- Guest lectures on ancient Indian science, mathematics, yoga, Ayurveda, and Vedic knowledge
- Integration of IKS concepts and examples in relevant subjects
- Celebration of Indian festivals, national heritage days, and cultural programs

Inclusivity, Equity & Student Support

- Scholarships, fee concessions, and reservation policies as per government norms
- Mentoring, counselling, and student support services & Awareness programs

Support for Economically, Socially & Physically Challenged Students

- Barrier-free campus with ramps, handrails, wide corridors, accessible classrooms and washrooms
- Lift facilities wherever required
- Academic accommodations including extra examination time, scribes/readers, and flexible attendance
- Access to digital resources, recorded lectures, and soft copies of study materials
- Dedicated faculty mentoring, counseling, and financial assistance

Action Plan for Slow Learners

- Identification through continuous internal assessment, and faculty observation
- Remedial classes and tutorial sessions
- Peer mentoring and faculty counselling
- Continuous academic monitoring and performance tracking
- Societal development and national priorities.

9.13 Faculty Performance Appraisal and Development System (FPADS (10)

Institute Marks : 10.00

Godavari Foundations Godavari College of Engineering (GFs GCOE), Jalgaon has established a Faculty Performance Appraisal and Development System (FPADS) to systematically assess, monitor, and enhance the professional performance of faculty members. The system is transparent, objective, and aligned with the Institutes Vision and Mission, Strategic Plan, NBA Outcome-Based Education (OBE) philosophy, AICTE guidelines, and the National Education Policy (NEP) 2020.

The primary objective of FPADS is to promote excellence in teaching-learning, research and innovation, industry engagement, institutional development, and continuous professional growth. The appraisal process is conducted annually and serves as a mechanism for evaluating faculty performance, identifying strengths and areas for improvement, recognizing achievements, assessing training and development needs, supporting career progression, and driving continuous institutional quality enhancement.

The College follows a structured self-appraisal framework comprising three categories that comprehensively evaluate faculty contributions across academic, research, professional, and institutional domains. The appraisal system incorporates systematic evaluation, constructive feedback, and targeted developmental initiatives to ensure continuous improvement in faculty performance. (Refer Figure 9.13.1.)

- Teaching, Learning and Evaluation
- Co-curricular, Extension Professional Development
- Research, Publications and Academic Contributions.

Faculty members submit the appraisal form with supporting documents at the end of each academic year, which is evaluated by an institute-appointed committee.

A. PerformanceAppraisal System

The implementation of a self-appraisal system involves the following steps:

- **Establishing a committee:** Committee comprising Governing Body members, Director and the respective Heads of Department (HODs) is constituted to conduct the Faculty Performance Appraisal at the end of each academic year.
- **Performance Review:** The committee reviews the progress and performance of faculty members based on various criteria and indicators. These include teaching effectiveness, research contributions, professional development, and other relevant factors.
- **Overall Performance Rating:** After reviewing the performance, an overall performance rating is assigned to each faculty member. This rating serves as feedback for self-improvement and helps identify areas where faculty members need to focus on enhancing their skills and performance.
- **Feedback and Recommendations:** Faculty members who receive a poor performance rating are provided with specific feedback on areas requiring improvement. The feedback aims to guide them towards self-improvement and professional development.

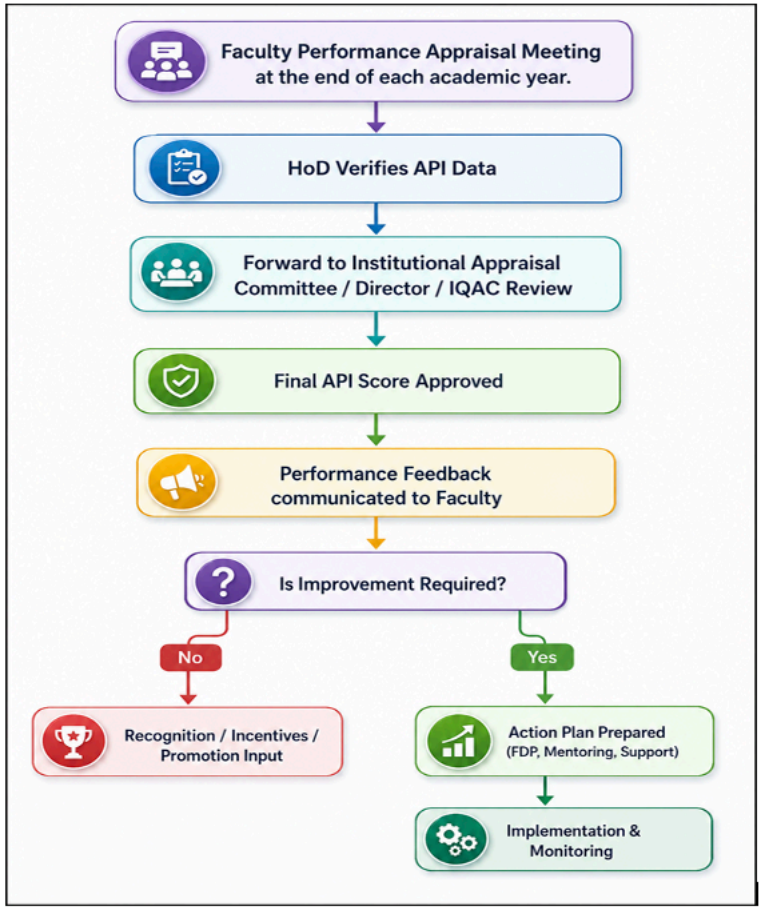


Figure 9.13.1: Faculty Performance Appraisal and Feedback Mechanism

Recognition and Rewards:

Faculty members who receive good performance ratings are rewarded with recognition, such as awards, appreciation letters, and promotions through a career advancement scheme. These rewards serve as incentives and acknowledgements for their dedication and contribution to their roles.

Sample Appraisal Form

The sample API form is a structured self-appraisal tool designed to evaluate faculty performance in teaching–learning, research, professional development, and institutional contributions. It captures quantitative and qualitative details of academic activities along with supporting documents to ensure transparency. The form is verified by the HOD & reviewed by the IQAC Committee. It is used for feedback, performance improvement and career advancement.

Academic Year

GF's Godavari College of Engineering

PERFORMANCE APPRAISAL FORM

Department

1. Name :
2. Date of Birth :
3. Date of Appointment and Basic Pay :
4. Present Basic Pay :
5. Qualifications :
6. Educational Improvement M.E./M.Tech/Phd/PG Diploma/MBA etc :
7. Participation in FDP/Workshop/Seminar/Symposium

Name of Institute	Title	Duration/Period of Time	Online/Offline	Whether AICTE/ISTE Approved

8.Paper Publicationin International / National Level Journal (Include Only SCOPUS, SCI Journals):

Sr. No.	Author(s)	Year	Title	Name of Journal
1				
2				

9. Paper Presentation at International / National Level Conference

Sl. No.	Author(s)	Year	Title	Conference or Seminar Proceedings with Volume No. & other details
1				

10. Books/Book Chapters Published:

Sr.	Title	Authors	Publication	ISBN
1				

11. Awards received at State/National/International Level

1

Sr. No.	Award	Year	Award Giving Organization	Title

12. FDP/Workshop/Conference/STTP Organized

Sr. No.	FDP/Workshop/Conference/STTP	Year	Title
1			

13. Working on Research Projects:

Title	Sponsor	Grant Received	Duration	Completed/ On Going

14. Theory/Practical Subjects Taught in Previous Academic Year:

Year / Sem /Subject	Course Name	No. of Students	% Result

15. Subject Preparation:

a. Lecture Notes –

b. Power Point Presentation –

c. Number of Books Referred

d. Referred Papers from Reputed Journals –

e. Video Preparation –

16. Result Analysis Theory Subject:

Course Year / Sem /Subject Name	Students Appeared	Students Passed	Average Marks	High/Low Marks	Distinction/ First Class

17. Practical Preparation

Sr. No.	Subject	Number of Practical
1		
2		

Preparation of Lab Manuals –Yes

18. Content beyond Syllabus:

Sr. No.	Details of Topic taught beyond syllabus

19. Portfolio handled in department

Sr. No.	Portfolio	Kind of activities performed to handle Portfolio
1		

20. Portfolio handled at Institute Level

Sr. No.	Portfolio	Kind of activities performed to handle Portfolio
1		
2		

21. Code of Conduct (Memo/Warning)

Sr. No.	Date	Reason of Memo/Warning

22. CL, ML, Vacation (during academic)

Sr. No.	No. of Days	Date	Details of Leave (CL/DL/ML/Vacation)
1			

23. Extra Activity Carried:

Name and Sign of Staff

24. Remark of HOD :

25. Remark of Principal :

3

Outcome

The Faculty Performance Appraisal and Development System has enabled the institute to:

- Enhance teaching effectiveness.
- Improve faculty competency and professional growth.
- Increase research output and innovation.
- Strengthen industry collaboration.
- Improve student mentoring and placement support.

- Encourage lifelong learning among faculty.
- Develop academic leadership.
- Foster a culture of quality, accountability, and continuous improvement.

The FPADS has contributed significantly to institutional excellence by ensuring that faculty members actively contribute to academic quality, research, innovation, governance, and societal development.

9.14 Outreach Activities (5)

Institute Marks : 5.00

A. Initiatives

The institute also promotes community service and social internships, where students participate in health awareness programs, blood donation camps, environmental conservation drives, and Swachh Bharat initiatives. Through society connect activities, local bodies, and government agencies to conduct technical awareness programs, skill development workshops. These outreach efforts have resulted in improved social awareness among students, enhanced leadership and teamwork skills, and a strong sense of civic responsibility, while creating a positive impact on the surrounding community.

Student Development through Clubs: Student clubs and professional society chapters offer structured experiential learning beyond the classroom, complementing the curriculum and supporting Outcome-Based Education (OBE) and attainment of POs and PSOs.

Clubs such as Elite group, Coding Club, Embedded hub, Cyber security, Drone club, MESA, CESA, EESA, TESA, AISA club and other institute-level forums promote hands-on learning, technical skill development, innovation, leadership, teamwork, professional communication, and social responsibility. Through workshops, competitions, projects, hackathons, and community-oriented activities, students gain practical exposure, ethical values, and lifelong learning skills, thereby strengthening OBE and effective PO attainment.

To enhance holistic student development through club activities aligned with Outcome-Based Education (OBE).

- Improves technical knowledge, problem-solving, innovation, and modern tool usage (PO1–PO3, PO5).
- Develops teamwork, leadership, communication, and project management skills (PO7–PO9).
- Instills ethics, social responsibility, and community engagement (PO6, PO10).
- Encourages lifelong learning and overall attainment of POs & PSOs (PO11).

The institution promotes Outcome-Based Education (OBE) by encouraging student participation in outreach and society-connect activities, fostering societal development along with professional and ethical competencies. Some of the outreach activities undertaken are as follows:

Sr. No	Name & Details of Activity	Organized By	A.Y.	Date/ Duration	Relevant SDG(s)
1	Fit India	NSS	23-24	29/08/2023	SDG 3
2	Meri Matti Mera Desh	NSS	23-24	09/08/2023	SDG 15
3	Swachhtta Hi Seva	NSS	23-24	26/09/2023	SDG 3,SDG 6,SDG 11
4	World Heart Day	NSS	23-24	29/09/2023	SDG 3
5	Unity Run	NSS	23-24	31/10/2023	SDG 3 ,SDG 16
6	Tree Plantation	NSS	23-24	26/01/2024	SDG 13, SDG 15
7	Blood Donation	NSS	23-24	23/02/2024	SDG 3
8	'Mera pahela vote desh ke Liye' Abhiyan	NSS	23-24	04/03/2024	SDG 16
9	Jal Jagruti Abhiyan	NSS	23-24	21/03/2024	SDG 6, SDG 13

Sr. No	Name & Details of Activity	Organized By	A.Y.	Date/ Duration	Relevant SDG(s)
1	Ek Ped Maa Ke Naam	NSS	24-25	16/07/2024	SDG 13, SDG 15
2	Nasha Mukti Abhiyan	NSS	24-25	12/08/2024	SDG 3
3	Tiranga Yatra	NSS	24-25	14/08/2024	SDG 16
4	Swachhata Abhiyan	NSS	24-25	27/09/2024	SDG 3, SDG 6, SDG 11
5	Anemia Mukt Bharat Mission	NSS	24-25	27/09/2024	SDG 2, SDG 3
6	Matdan Jan JagrutiAbhiyan	NSS	24-25	19/11/2024	SDG 16
7	Blood Donation	NSS	24-25	24/02/2025	SDG 3
8	EYE Donation	NSS	24-25	25/02/2025	SDG 3
9	International Yoga Day	NSS	24-25	21/06/2025	SDG 3

10	Ek Ped Maa Ke Naam 2.0	NSS	24-25	25/06/2025	SDG 13

Sr. No	Name & Details of Activity	Organized By	A.Y.	Date/ Duration	Relevant SDG(s)
1	Har Ghar Tiranga	NSS	25-26	14/08/2025	SDG 16
2	Partition Horrors Remembrance Day	NSS	25-26	14/08/2025	SDG 16
3	Blood Donation	NSS	25-26	29/08/2025	SDG 3
4	National Ayurveda Diwas	NSS	25-26	23/09/2025	SDG 3
5	Ek Ped Maa Ke Naam Rally	NSS	25-26	24/09/2025	SDG 13, SDG 15
6	Tree Plantation	NSS	25-26	24/09/2025	SDG 13, SDG 15
7	Swachhata Abhiyan	NSS	25-26	27/09/2025	SDG 3, SDG 6,SDG 11
8	World Heart Day	NSS	25-26	29/09/2025	SDG 3
9	Rashtriya Ekta Diwas	NSS	25-26	31/10/2025	SDG 16
10	Jeevan Sanjivani Training Program	NSS	25-26	14/11/2025	SDG 3
11	Tabacco Free Abhiyan	NSS	25-26	17/11/2025	SDG 3
12	Cardiac Health checkup Camp	NSS	25-26	18/12/2025	SDG 3
13	Swadeshi Rally	NSS	25-26	12/01/2026	SDG 8, SDG 12

Sr. No	Name & Details of Activity	Organized By	A.Y.	Date/ Duration	Relevant SDG(s)
1	Technovation	GF's GCOE	2023-24	15 March 2024	4,5,8
2	Embedded Hub Inauguration	GF's GCOE	2023-24	29 April2024	9,17
3	AVISHKAR Competition	GF's GCOE	2023-24	11 march 2023	4,9
4	International Yoga Day	GF's GCOE	2023-24	21 June 2023	SDG 3
5	Teachers day	GF's GCOE	2023-24	5 sep 2023	SDG 4
6	Engineers day	GF's GCOE	2023-24	15 Sep 2023	SDG 9
7	Garba Night &Dandiya Raas Celebration (Navratri 2023)	GF's GCOE	2023-24	15/10/2023	SDG 4, SDG 11
8	Ulhas- Cultural Event 2024	GF's GCOE	2023-24	25/02/2024	SDG 4, SDG 11
9	Matrubhasha Divas Celebration	GF's GCOE	2024-25	21 Feb 2025	SDG4
10	Teachers day	GF's GCOE	2024-25	5 sep 2024	SDG 4
11	Engineers day	GF's GCOE	2024-25	15 Sep 2024	SDG 9
12	National Sport Day	GF's GCOE	2024-25	28 August 2024	3,4,5,10

13	National Youth Day	GF's GCOE	2024-25	12 Jan 2025	4,8,16
14	Technovation	GF's GCOE	2024-25	12 April 2025	4,5,8
15	ULHAS 2K25	GF's GCOE	2024-25	26-29 March 2025	4,11
16	International Yoga Day	GF's GCOE	2024-25	21 June 2024	SDG 3

NSS Activity 2023-24: https://www.gfgcoe.ac.in/Students/Cells/NSS/NSS.pdf (https://www.gfgcoe.ac.in/Students/Cells/NSS/NSS.pdf)

NSS Activity 2024-25: https://www.gfgcoe.ac.in/Students/Cells/NSS/NSSReport.pdf (https://www.gfgcoe.ac.in/Students/Cells/NSS/NSSReport.pdf)

NSS Activity 2025-26: https://www.gfgcoe.ac.in/Students/Cells/NSS/NSSReport-25-26.pdf (https://www.gfgcoe.ac.in/Students/Cells/NSS/NSSReport-25-26.pdf)

Special NSS Camp(2025): https://www.gfgcoe.ac.in/Students/Cells/NSS/NSSCamp.pdf (https://www.gfgcoe.ac.in/Students/Cells/NSS/NSSCamp.pdf)

Outcomes and Impact

- Students demonstrated enhanced professional competencies, including leadership, teamwork, communication, and ethical responsibility through sustained community engagement.
- Improved ability to apply technical knowledge to real-life societal problems such as sanitation, water management, digital literacy, health awareness, and environmental sustainability.
- Increased awareness and commitment towards Sustainable Development Goals (SDGs), particularly SDG 3 (Good Health & Well-being),SDG 4 (Quality Education), SDG 5 (Gender Equality), SDG 6 (Clean Water & Sanitation), SDG 11 (Sustainable Communities), SDG 13 (Climate Action), and SDG 15 (Life on Land).
- Development of civic sense and social sensitivity, aligning with Graduate Attributes and Program Outcomes related to ethics, environment, and lifelong learning.
- Special camp was conducted to provide students with unique opportunities for group living, collective experience sharing, and constant interaction with the community also Focusing on national developmental issues and fostering social responsibility. Improved health, hygiene, and environmental awareness among community members due to campaigns like Swachh Bharat Abhiyan, and tree plantation drives.
- Overall, these activities reinforced Outcome-Based Education (OBE) by ensuring holistic student development while contributing meaningfully to societal development and national priorities.

Annexure I
(A) PROGRAM OUTCOME (POs)

Engineering Graduates will be able to:

PO1: Engineering Knowledge: Apply knowledge of mathematics, natural science,computing, engineering fundamentals and an engineering specialization as specified in WK1 to WK4 respectively to develop to the solution of complex engineering problems.

PO2: Problem Analysis: Identify, formulate, review research literature and analyze complex engineering problems reaching substantiated conclusions with consideration for sustainable development. (WK1 to WK4)

PO3: Design/Development of Solutions: Design creative solutions for complex engineering problems and design/develop systems/components/processes to meet identified needs with consideration for the public health and safety, whole-life cost, net zero carbon, culture, society and environment as required. (WK5)

PO4: Conduct Investigations of Complex Problems: Conduct investigations of complex engineering problems using research-based knowledge including design of experiments, modelling, analysis & interpretation of data to provide valid conclusions. (WK8).

PO5: Engineering Tool Usage: Create, select and apply appropriate techniques, resources and modern engineering & IT tools, including prediction and modelling recognizing their limitations to solve complex engineering problems. (WK2 and WK6)

PO6: The Engineer and The World: Analyze and evaluate societal and environmental aspects while solving complex engineering problems for its impact on sustainability with reference to economy, health, safety, legal framework, culture and environment. (WK1, WK5, and WK7).

PO7: Ethics: Apply ethical principles and commit to professional ethics, human values, diversity and inclusion; adhere to national & international laws. (WK9)

PO8: Individual and Collaborative Team work: Function effectively as an individual, and as a member or leader in diverse/multi-disciplinary teams.

PO9: Communication: Communicate effectively and inclusively within the engineering community and society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations considering cultural, language, and learning differences

PO10: Project Management and Finance: Apply knowledge and understanding of engineering management principles and economic decision-making and apply these to one’s own work, as a member and leader in a team, and to manage projects and in multidisciplinary environments.

PO11: Life-Long Learning: Recognize the need for, and have the preparation and ability for i) independent and life-long learning ii) adaptability to new and emerging technologies and iii) critical thinking in the broadest context of technological change. (WK8)

(B) PROGRAM SPECIFIC OUTCOME (PSOs)
Program should specify 2-4 program specific outcomes.

PSO1	Power System and Electrical Equipment: Apply the principles of electrical engineering to analyze, design, operate, and maintain power systems, electrical machines, power electronics, and protection systems using modern engineering tools.
PSO2	Automation and Sustainable Technologies: Design, implement, and evaluate solutions for industrial automation, control systems, renewable energy systems, electric vehicles, and smart grid applications by considering technical, economic, environmental, and safety aspects.
PSO3	Professional Competency and Lifelong Learning: Demonstrate professional competence through effective communication, teamwork, ethical practices, lifelong learning, research, innovation, entrepreneurship, and successful careers in industry, higher education, and competitive examinations.

Declaration

The head of the institution needs to make a declaration as per the format given -

- 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 inforce as on date and the institutes hall fully abide by them.
- It is submitted that information provided in this Self Assessment Report is factually correct.
- I understand and agree that an appropriate disciplinary action against the Institute willbe initiated by the NBA. In case, any false statement/information is observed during pre-visit, visit, postvisit and subsequent to grant of accreditation.

Head of the Institute
Name : DR VIJAYKUMAR H PATIL
Designation : PRINCIPAL
Signature :



Seal of The Institution :



Place : JALGAON
Date : 21-08-2026 15:09:11