R C Patel Institute of Technology

SELF ASSESSMENT REPORT(TIER - I) FOR Civil Engineering

Part A : Institutional Information

1 Name and Address of the Institution

R C Patel Institute of Technology,
Near Nimzari Naka, Shahada Road, Shirpur - 425405, Dist: Dhule (MS)

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:

2001

4 Ownership Status:

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

5 Name and Address of Affiliating University(if any)

Dr. Babasaheb Ambedkar Technological University,
Lonere, Tal- Mangaon, Dist – Raigad. Maharashtra (India). 402103

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

Name of Institutions	Year of Establishment	Programs of Study	Location
R.C.Patel Institute of Pharm	1992	Pharmacy	Shirpur
R.C.Patel Institute of Pharm	2003	Pharmacy	Shirpur
H.R.Patel Institute of Pharm	2004	Pharmacy	Shirpur
H.R.Patel Institute of Pharm	2006	Pharmacy	Shirpur
R.C.Patel College of Engine	2016	Engineering	Shirpur
R.C.Patel College of Educa	1990	BEd	Shirpur
SMT H.R.Patel Arts Mahila	1990	Arts	Shirpur

7 Details of all the programs being offered by the Institution under consideration:

Name of Program	Program Applied level	Start of year	Year of AICTE approval	Initial Intake	Intake Increase	Current Intake	Accreditation status	From	To	Program for consideration	Program for Duration
Civil Engineering	UG	2010	2010	60	No	60	Applying first time	--	--		4

8 Programs to be considered for Accreditation vide this application:

S No	Level	Discipline	Program
1	Under Graduate	Engineering & Technology	Civil Engineering
2	Under Graduate	Engineering & Technology	Electrical Engineering
3	Under Graduate	Engineering & Technology	Computer Science and Engineering (Data Science)

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	Computer Engineering	3	9	16	28	3	1	24	28	4	3	24	31
2	Electronics and Telecommunication	4	4	13	21	4	3	14	21	4	4	15	23
3	Mechanical Engineering	2	3	8	13	1	1	18	20	1	1	18	20
4	Computer Science Engineering (Data Science)	1	3	10	14	1	1	8	10	1	1	9	11
5	Electrical Engineering	1	3	7	11	1	1	10	12	1	0	13	14
6	Civil Engineering	1	3	8	12	1	2	11	14	0	1	13	14
7	Artificial Intelligence and Machine learning	1	3	7	11	1	1	7	9	0	0	6	6
8	Artificial Intelligence and Data Science	0	0	6	6	0	0	0	0	0	0	0	0
9	Information Technology	0	0	4	4	0	0	0	0	0	0	0	0
10	Applied Science and Humanities	2	2	20	24	2	2	20	24	2	2	15	19

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	Computer Engineering	778	787	756
2	Electronics and Telecommunication	498	514	460
3	Mechanical Engineering	229	221	267
4	Computer Science Engineering (Data Science)	389	327	263
5	Electrical Engineering	246	258	217
6	Civil Engineering	220	215	212
7	Artificial Intelligence and Machine learning	258	248	183
8	Artificial Intelligence and Data Science	254	124	0
9	Information Technology	254	125	0

11 Vision of the Institution:

To become a leading Institute in Technical education fostering innovation, research, ethical values, and sustainable development for the betterment of society.

12 Mission of the Institution:

To impart high quality Technical Education through:

M1: Innovative and Interactive learning process and high quality, globally recognized instructional programs.

M2: Fostering a collaborative scientific temper among students with ethical responsibility towards the society.

M3: Preparing students from diverse backgrounds to have aptitude for employment, entrepreneurship and research with a spirit of professionalism.

M4: To contribute to the nation’s sustainable development.

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

Head of the Institution	
Name	Prof. Dr. Jayantrao Bhaurao Pa
Designation	Director
Mobile No.	9923466699
Email ID	director@rcpit.ac.in

NBA Coordinator, If Designated

Name	Dr. Dharmaraj Rajaram Patil
Designation	Head and Professor
Mobile No.	9420404470
Email ID	dharmaraj.patil@rcpit.ac.in

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	86.25
5	FACULTY INFORMATION	100	83.93
6	FACULTY CONTRIBUTIONS	120	89.00
7	FACILITIES AND TECHNICAL SUPPORT	100	100.00
8	CONTINUOUS IMPROVEMENT	80	80.00
9	STUDENT SUPPORT AND GOVERNANCE	120	116.00
	Total	**1000**	**915**

Part B : Criteria Summary

1 OUTCOME-BASED CURRICULUM (120)

Total Marks 120.00

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

Total Marks 35.00

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

Institute Marks : 5.00

Vision of the institute	To become a leading Institute in Technical education fostering innovation, research, ethical values, and sustainable development for the betterment of society.
Mission of the institute	To impart high quality Technical Education through: **M1:** Innovative and Interactive learning process and high quality, globally recognized instructional programs. **M2:** Fostering a collaborative scientific temper among students with ethical responsibility towards the society. **M3:** Preparing students from diverse backgrounds to have aptitude for employment, entrepreneurship and research with a spirit of professionalism. **M4:** To contribute to the nation's sustainable development.
Vision of the Department	To provide quality Civil engineering education with socio-moral values catering to the need of nation and globe.
Mission of the Department	**Mission No.** / **Mission Statements** M1 / Provide civil engineering education with technical and ethical excellence. M2 / Empower students through innovation, research, and sustainable engineering design. M3 / Prepare civil engineers with research skills and entrepreneurial career mindset.

1.1.2 State PEOs of the Program (5)

Institute Marks : 5.00

PEO No.	Program Educational Objectives Statements
PEO1	Graduates will apply scientific, mathematical, and engineering principles to solve complex civil problems ethically and sustainably.
PEO2	Graduates will design and implement resilient civil solutions addressing societal needs through innovation, collaboration, and environmental responsibility.
PEO3	Graduates will exhibit professional competence, communication, teamwork, and lifelong learning for career advancement, entrepreneurship, and higher education.

1.1.3 Process of Defining Vision, Mission and PEOs (10)

Institute Marks : 10.00

The Program Assessment Committee (PAC), chaired by the Head of the Department, is responsible for defining, validating, and periodically reviewing the Vision, Mission, and PEOs of the department. The process is systematic, participative, iterative, and cyclic, ensuring alignment with institutional goals and stakeholder expectations. Stakeholder views and feedback are collected periodically by the Program Coordinator from students, faculty members, alumni, employers, industry professionals, and parents through feedback, meetings, discussions, and interactions. All related records such as feedback analysis, minutes of meeting, draft documents, and approvals are systematically maintained for transparency and verification. The process of defining Vision, Mission and PEOs shown in Figure 1.1.3.1 and steps are as follows.

Step 1: Reference to Institute Vision and Mission

The process begins with reference to the Vision and Mission of the Institute, which serve as the guiding framework for developing the department-level Vision, Mission, and PEOs. These ensure consistency with the long term strategic direction of the institute.

Step 2: Stakeholder Views and Feedback

Simultaneously, stakeholders' views and feedback are collected and analysed. Inputs focus on:

- Academic expectations
- Industry and employability requirements
- Professional ethics and societal needs
- Emerging technologies and future career paths

These inputs act as a critical foundation for formulation.

Step 3: Preparation of Draft through Department Brainstorming

Based on the institute Vision and Mission and analysed stakeholder feedback, the department conducts brainstorming sessions involving faculty members. During these sessions:

- Strategic priorities are discussed
- Academic and industry relevance is evaluated
- Alignment with Program Outcomes (POs) is ensured

Following this, a preliminary draft of the Vision, Mission, and PEOs is prepared.

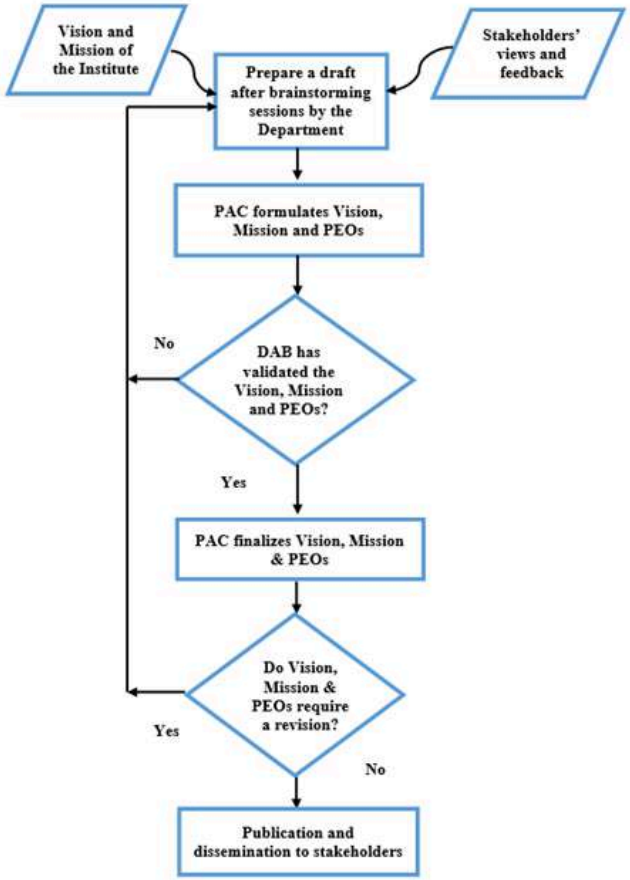

Figure 1.1.3: Process of defining the program Vision, Mission and PEOs

Step 4: Formulation by Program Assessment Committee

The PAC formally formulates the Vision, Mission, and PEOs based on:

- Draft prepared after brainstorming
- Stakeholder feedback
- Academic, industry, and national priorities

The draft emphasizes clarity, discipline relevance, employability, higher education, research orientation, ethical values, innovation, and societal contribution.

Step 5: Validation by Department Advisory Board (DAB)

The formulated Vision, Mission, and PEOs are presented to the DAB for validation.

- If DAB does not validate the statements, the process loops back to the draft preparation stage, and revisions are carried out based on DAB suggestions.
- If DAB validates the statements, the process proceeds to finalization.

This validation ensures external academic and industry perspectives are incorporated.

Step 6: Finalization by PAC

Upon successful validation by the DAB, the PAC finalizes the Vision, Mission, and PEOs of the department.

Step 7: Revision Requirement Check

The finalized statements are examined to determine whether any further revision is required:

- If revision is required, the process loops back for modification and revalidation.
- If no revision is required, the statements are approved for publication.

Step 8: Publication and Dissemination

Once finalized and approved, the Vision, Mission, and PEOs are published and disseminated to stakeholders through:

Institute website and department webpage.

- Display boards
- Faculty Student interactions
- Official communication platforms

Step 9: Periodic and Cyclic Review

The entire process is cyclic in nature. The PAC periodically reviews the Vision, Mission, and PEOs to ensure continued relevance with:

- Technological advancements
- Industry trends
- Academic developments

Any required changes follow the same structured process, ensuring continual improvement and alignment with stakeholder expectations.

1.1.4 Dissemination of Vision, Mission and PEOs (5)

Institute Marks : 5.00

The Vision and Mission of the Institute are published and disseminated among stakeholders as illustrated in Table 1.1.4.1

Table 1.1.4.1: Publication and dissemination of Vision, Mission and PEOs of the Institute

Publication of Vision and Mission of the Institute		**Stakeholders**
Mediums of publication	• Institute Website • Social Media Platforms • Institute Newsletter • Institute Magazine • Institute Information Booklet • Training & Placement activity (T&P) Report	Internal and External Stakeholders
	• Student Files and Reports • Laboratory manuals	Internal Stakeholders
Methods of display	• Director Office • Administrative Office • Auditorium • T & P Office • Canteen and Hostels	Internal and External Stakeholders
	• Central facilities and workshop • Classrooms and laboratories • Notice Boards	Internal Stakeholders
Methods of dissemination	• Induction Program • Alumni Meet • Governing Body Meetings • Academic Council (AC) and Internal Quality Assurance Cell (IQAC) • Letters and Correspondence • Employer Meetings during Placement Drives	Internal and External Stakeholders

The Vision, Mission and PEOs of the department are published and disseminated among stakeholders as mentioned in Table 1.1.4.2.

Table 1.1.4.2: Publication and dissemination of Vision, Mission and PEOs of the department

Publication of Vision and Mission of the Institute		**Stakeholders**
Mediums of publication	• Department Webpage • Department Activity Report • Department Newsletter and Magazine	Internal and External Stakeholders
	• Student Files, Reports • Laboratory Manuals • Faculty Diary	Internal Stakeholders

Methods of display	• Head of Department (HoD) Cabin • Faculty Cabin • Prominent Places in the Department	Internal and External Stakeholders
	• Department Library • Notice Boards • Classrooms • Laboratories	Internal Stakeholders
Methods of dissemination	• Alumni Interaction • PAC Meetings • DAB Meetings • Board of Studies (BoS) Meetings • Emails, Letters, and Correspondence • Parent-Teacher Meet	Internal and External Stakeholders

The Process of Dissemination of the Vision, Mission and PEOs among Stakeholders:

Online Presence:

The Institute and the department maintain a virtual presence through their websites and social media platforms.

Physical Displays in Campus:

The vision, mission, and PEOs are displayed prominently throughout the Campus. Displays can be found in the office, classrooms, laboratories, library, notice boards, corridors, etc.

Internal and External Communication:

The vision, mission, and PEOs are disseminated via different means of communication, such as Laboratory manuals, Project and Internship Reports. Parents know about them from institute letters and Institute Website. Alumni, industry professionals, management, training partners and other people who engage with the institute know about the vision, mission, and PEOs through formal interactions.

Meetings:

Every year, newly admitted students and their parents come to know about Vision, Mission and PEOs during an induction program. Formal and informal meetings that take place on a variety of occasions are another effective way to disseminate vision, mission, and PEOs through parents and teachers, Management, Governing Body, DAB, and BoS meetings.

Employers are our external stakeholders, and we communicate Vision, Mission, and PEOs to them through online and in-person meetings. Our employers visit campus in person during the placement drive. Faculty members use email signatures with the department vision and mission when communicating with external stakeholders.

1.1.5 Mapping of PEOs with Mission (10) Institute Marks : 10.00

PEO Statements	M1	M2	M3
Graduates will apply scientific, mathematical, and engineering principles to solve complex civil problems ethically and sustainably.	3	2	2
Graduates will design and implement resilient civil solutions addressing societal needs through innovation, collaboration, and environmental responsibility.	2	3	2
Graduates will exhibit professional competence, communication, teamwork, and lifelong learning for career advancement, entrepreneurship, and higher education.	2	2	3

The mapping of PEOs with the Department Mission statements is presented in Table No. 1.1.5.1, which highlights the alignment between departmental mission goals and the long-term achievements expected from graduates.

Mapping of PEOs with the department mission statements

Table No.1.1.5.1: Mapping of PEOs with mission.

PEO Statements	M1	M2	M3
PEO1: Graduates will apply scientific, mathematical, and engineering principles to solve complex civil problems ethically and sustainably.	3	2	2
PEO2: Graduates will design and implement resilient civil solutions addressing societal needs through innovation, collaboration, and environmental responsibility.	2	3	2
PEO3: Graduates will exhibit professional competence, communication, teamwork, and lifelong learning for career advancement, entrepreneurship, and higher education.	2	2	3

The justification and rationale behind the mapping of PEOs with the Department Mission statements are presented in Table No. 1.1.5.2, which explains how each PEO supports and contributes toward the fulfillment of the department's mission.

Table 1.1.5.2: Justification and rationale of the mapping of PEOs with mission statements

Mapping	Mission statements of program		
Program Educational Objectives (PEOs)	**M1:** Provide civil engineering education with technical and ethical excellence.	**M2:** Empower students through innovation, research, and sustainable engineering design.	**M3:** Prepare civil engineers with research skills and entrepreneurial career mindset.

PEO1: Graduates will apply scientific, mathematical, and engineering principles to solve complex civil problems ethically and sustainably.	3-High: PEO1 aligns with M1 as it emphasizes the application of technical knowledge, ethics, and sustainability, reflecting the department's commitment to producing competent engineers who address infrastructure and sustainability challenges responsibly	2-Medium: PEO1 partially supports M2 by encouraging analytical and research-based problem-solving approaches that integrate interdisciplinary knowledge for sustainable design.	2- Medium: PEO1 complements M3 by fostering analytical and research-oriented thinking, which contributes to developing competent professionals ready to address industry challenges.
PEO2: Graduates will design and implement resilient civil solutions addressing societal needs through innovation, collaboration, and environmental responsibility.	2- Medium: PEO2 supports M1 by focusing on ethical, sustainable, and technically sound engineering solutions that serve society and infrastructure development needs	3-High: Strongly aligned with M2, as PEO2 directly reflects the mission's focus on innovation, inclusivity, collaboration, and environmental consciousness in engineering design and implementation.	2- Medium: PEO2 connects with M3 by nurturing problem-solving and collaborative design skills that align with industry expectations and foster innovation-driven entrepreneurship.
PEO3: Graduates will exhibit professional competence, communication, teamwork, and lifelong learning for career advancement, entrepreneurship, and higher education.	2- Medium: PEO3 supports M1 by reinforcing professionalism and ethical behaviour necessary for contributing effectively to sustainable national and global engineering practices.	2- Medium: PEO3 partially supports M2 by fostering teamwork, communication, and continuous learning, which are essential for innovation and interdisciplinary collaboration.	3-High: Strongly aligns with M3 as PEO3 emphasizes professional development, entrepreneurship, and lifelong learning, key elements in achieving career success and advanced studies.

1.2 Curriculum Structure and Features (30) Total Marks 30.00

1.2.1 State the Process for Developing/Revising the Program Curriculum (10)

Institute Marks : 10.00

The program curriculum is developed and periodically revised through a systematic, outcome based and participative mechanism involving internal and external stakeholders. The process ensures alignment with PEOs, PSOs and POs, while addressing emerging industry needs, technological advancements, societal expectations, national educational reforms, and academic standards. All related documents - including feedback summaries, minutes of meeting, gap analysis reports, and approval resolutions are maintained for transparency and verification. The overall workflow adopted for curriculum development and revision is illustrated in Figure 1.2.1.1.

A. Committees Involved in Curriculum Development

To ensure academic consistency and industry relevance, curriculum revision follows a multi-level review involving:

Program Assessment Committee:

- Collects stakeholder feedback, analyses data, and identifies curriculum enhancement needs.
- Reviews attainment levels of POs and PSOs to ensure Outcome Based Education (OBE) alignment.

Department Advisory Board:

- Includes senior academicians, employers, alumni, and industry members.
- Reviews PAC recommendations and provides industry-oriented inputs.

Board of Studies:

- Statutory body including external academic and industry experts.
- Evaluates academic depth, credit structure, and regulatory compliance.

Academic Council:

- Academic Council is responsible for final confirmation and authorization for implementation.

B. Step-by-Step Curriculum Revision Process

The development and revision process as outlined below:

Step 1: Feedback Collection & Gap Identification

Structured feedback is collected from Students, Alumni, Employers, Faculty Members, Parents, exit feedback, and academic meetings. Inputs help identify gaps related to industry expectations, technological advancements, employability requirements, skill development, and higher education needs.

Step 2: Analysis by Program Assessment Committee

PAC reviews feedback outcomes along with PO/PSO attainment results. A detailed Gap Analysis and Curriculum Revision Report is prepared by comparing with:

- AICTE Model Curriculum
- Syllabus of premier institutions
- Autonomous colleges/universities

This ensures academic depth, contemporary relevance, and national competitiveness. The identified gaps, missing contents, and corresponding bridging actions proposed in related courses are summarized in Table 1.2.1.1.

The curriculum structure is also reviewed for alignment with the National Credit Framework (NCrF) to support academic mobility, multidisciplinary progression, and flexibility in credit distribution.

Step 3: Review by Department Advisory Board

The DAB validates PAC recommendations and suggests additions related to recent technologies, skill requirements, industry tools, professional competencies, and employability. Based on consolidated findings, a Revised Curriculum Proposal is drafted.

Step 4: Approval by Board of Studies

The Revised Curriculum Proposal is presented to the BoS for evaluation. The BoS assesses:

- Academic consistency and learning depth
- Course relevance

- Credit structure and load distribution
- OBE mapping with POs/PSOs
- Alignment with AICTE/University/NCrF norms

Upon approval, the updated syllabus and curriculum structures are finalized.

Step 5: Confirmation by Academic Council

The BoS approved curriculum is forwarded to the Academic Council for final confirmation and implementation authority. Once approved, it becomes operational.

Step 6: Implementation and Monitoring

The revised curriculum is delivered through classroom teaching, laboratory sessions, internships, project-based learning and skill-based activities. PAC periodically evaluates its effectiveness based on attainment results and feedback trends. Further revisions follow the same structured process as depicted in Figure 1.2.1.1.

C. Curriculum Review Frequency

Curriculum review is conducted:

- As per University/BoS/AICTE guidelines, or
- When major technological or industry shifts occur, or
- Based on attainment gaps identified through academic analysis.

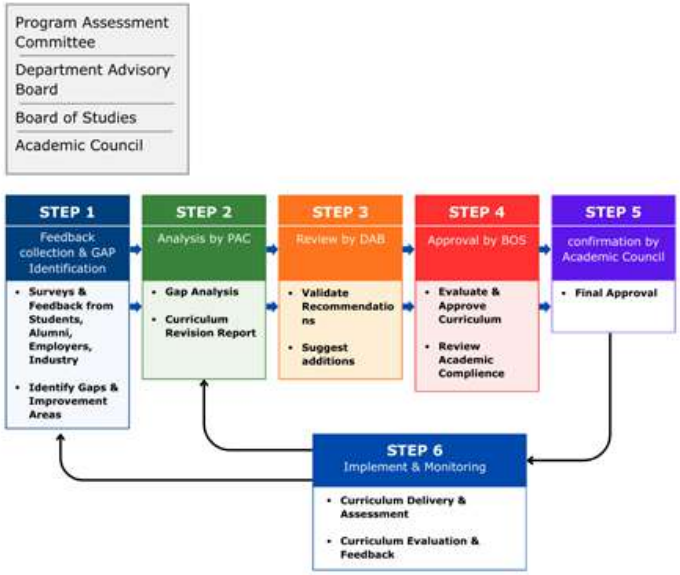

Figure 1.2.1.1: Process for Developing/Revising the Program Curriculum

Table 1.2.1.1: Identified Gap / Missing Content with related courses and Bridging Action proposed

Sr. No.	Stakeholder Feedback Source	Identified Gap / Missing Content	Related Courses	PO / PSO Not Addressed / Weak	Gap Type (Knowledge / Skills / Tools / Attitude)	Bridging Action Proposed	Activity Conducted (Evidence)

1	Student Feedback	Students faced difficulty in applying theoretical concepts to real-life civil engineering problems	Building Construction Materials, Surveying	PO1, PO2, PO5, PSO1	Skill Gap	Industry-oriented hands-on sessions and case-based problem-solving workshops	Market Survey and hands on practice on field
2	Alumni Interaction	Need exposure to modern construction practices and software tools	Planning of building, Structural Analysis and Design	PO3, PO4, PSO2	Knowledge + Skills Gap	Alumni interaction sessions and training on industry-standard software (ETABS/STAAD)	Two Alumni Interaction sessions conducted
3	Exit Survey	Limited teamwork, leadership, and collaborative project execution skills.	Semester Projects	PO9	Attitude / Soft Skill Gap	Structured team-based semester projects with defined roles and peer evaluation.	Role allocation records and peer assessment reports maintained (Implemented from 2024).
4	Industry Expert Talk	Lack of structured understanding of sustainable and green construction practices	Environmental Engineering, Elective Courses	PO2, PSO3	Knowledge Gap	Inclusion of sustainability concepts and green building practices in curriculum	Green Building & Sustainable Engineering content added
5	Employer Feedback	Weak communication, reporting, and presentation skills	Semester Projects, Internship	PO10	Soft Skills Gap	Enhancement of T&P activities including technical presentations, mock interviews, and group discussions	Mock interviews and GD sessions introduced
6	Academic Result Analysis	Students faced difficulty in understanding core concepts of structural analysis	Structural Analysis	PO1	Knowledge Gap	Remedial classes and tutorial sessions focusing on fundamental concepts and numerical problem-solving	Remedial classes completed
7	Comparing with IITs	Insufficient exposure to construction laws, contracts, safety regulations, and project economics	Construction Management, Professional Practice	PO1, PO2, PO8, PO12, PSO2	Knowledge & Exposure Gap	Expert lectures, site visits, and case studies on contracts, safety practices, and project management	Expert lectures and site visits completed

1.2.2 Curriculum Structure (10)

Institute Marks : 10.00

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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)	Total no. of Hours per semester	Total Credits (C)* (Total Hours/30)
			L	T	P	SL		
1	C101	Engineering Mathematics-I	70	14	0	66	150	5.00
2	C102	Engineering Physics-I	28	0	0	32	60	2.00
3	C103	Engineering Chemistry-I	28	0	0	32	60	2.00
4	C104	Engineering Mechanics	56	14	0	50	120	4.00
5	C105	Basic Electrical Electronics Engineering	42	0	0	48	90	3.00
6	C106	Engineering Science-I Laboratory	0	0	28	2	30	1.00
7	C107	Engineering Mechanics Laboratory	0	0	28	2	30	1.00
8	C108	Basic Electrical Electronics Engineering Laboratory	0	0	28	2	30	1.00
9	C109	Language Profiency English	0	0	28	2	30	1.00
10	C110	Engineering Mathematics-II	70	14	0	66	150	5.00
11	C111	Engineering Physics-II	28	0	0	32	60	2.00
12	C112	Engineering Chemistry-II	28	0	0	32	60	2.00
13	C113	Engineering Graphics	28	0	0	32	60	2.00
14	C114	Computer Programming	42	0	0	48	90	3.00
15	C115	Effective Communication Skills	28	0	0	32	60	2.00
16	C116	Engineering Science -II Laboratory	0	0	28	2	30	1.00
17	C117	Engineering Graphics Laboratory	0	0	28	2	30	1.00

18	C118	Computer Programming Laboratory	0	0	28	2	30	1.00
19	C119	Effective Communication Skills Laboratory	0	0	28	2	30	1.00
20	C120	Workshop	0	0	28	2	30	1.00
21	C201	Engineering Mathematics-III	56	14	0	50	120	4.00
22	C202	Mechanics of Solids	56	14	0	50	120	4.00
23	C203	Mechanics of Solids Laboratory	0	0	28	2	30	1.00
24	C204	Surveying -I	28	0	0	32	60	2.00
25	C205	Surveying -I Laboratory	0	0	28	2	30	1.00
26	C206	Concrete Technology	42	0	0	48	90	3.00
27	C207	Concrete Technology Laboratory	0	0	28	2	30	1.00
28	C208	Building Construction & Materials	28	0	0	32	60	2.00
29	C209	Introduction to Civil Engineering	14	0	0	16	30	1.00
30	C210	Introduction to Civil Engineering Lab	0	0	56	4	60	2.00
31	C211	Semester Project – I	0	0	28	2	30	1.00
32	C214	Engineering Mathematics-IV	56	14	0	50	120	4.00
33	C215	Fluid Mechanics	56	14	0	50	120	4.00
34	C216	Fluid Mechanics Laboratory	0	0	28	2	30	1.00
35	C217	Surveying - II	28	0	0	32	60	2.00
36	C218	Surveying-II Laboratory	0	0	28	2	30	1.00
37	C219	Building Planning and Design	28	0	0	32	60	2.00
38	C220	Building Planning and Design Laboratory	0	0	28	2	30	1.00
39	C221	Structural Analysis	56	14	0	50	120	4.00

40	C222	Universal Human Values	28	0	0	32	60	2.00
41	C223	Semester Project – II	0	0	28	2	30	1.00
42	C224	Employability Skill Development Program – I	0	0	28	2	30	1.00
43	C301	Hydraulics and Fluid Machinery	56	14	0	50	120	4.00
44	C302	Hydraulics and Fluid Machinery Laboratory	0	0	28	2	30	1.00
45	C303	Design of Concrete Structures	42	0	0	48	90	3.00
46	C304	Design of Concrete Structures Laboratory	0	0	28	2	30	1.00
47	C305	Transportation Engineering	28	0	0	32	60	2.00
48	C306	Transportation Engineering Laboratory	0	0	28	2	30	1.00
49	C307	Theory of Structure	42	14	0	34	90	3.00
50	C308	Smart city Planning	42	0	0	48	90	3.00
51	C309	Civil Engineering Social & Global Impact	14	0	0	16	30	1.00
52	C310	Professional & Business Communication	28	0	0	32	60	2.00
53	C311	Semester Project-III	0	0	28	2	30	1.00
54	C312	Employability skills development program- II	0	0	28	2	30	1.00
55	C313	Estimating & Costing	56	14	0	50	120	4.00
56	C314	Estimating & Costing Laboratory	0	0	28	2	30	1.00
57	C315	Design of Steel Structures	56	14	0	50	120	4.00
58	C316	Design of Steel Structures Laboratory	0	0	28	2	30	1.00
59	C317	Engineering Geology	42	0	0	48	90	3.00
60	C318	Engineering Geology Laboratory	0	0	28	2	30	1.00

61	C319	Construction Management	28	0	0	32	60	2.00
62	C320	Town & Urban Planning	42	0	0	48	90	3.00
63	C321	Project Stage-I	0	0	56	4	60	2.00
64	C322	Computer Aided Civil Engineering Drawing	14	0	0	16	30	1.00
65	C401	Geotechnical Engineering	56	14	0	50	120	4.00
66	C402	Geotechnical Engineering Laboratory	0	0	28	2	30	1.00
67	C403	Public Health Engineering	42	0	0	48	90	3.00
68	C404	Public Health Engineering Laboratory	0	0	28	2	30	1.00
69	C405	Water Resource Engineering	56	14	0	50	120	4.00
70	C406	Integrated Watershed Management	42	0	0	48	90	3.00
71	C407	Disaster Management and Mitigation Measures	42	0	0	48	90	3.00
72	C408	Project Stage –II	0	0	112	8	120	4.00
73	C409	Structural Audit	42	0	0	48	90	3.00
74	C410	Metro Construction Technique	42	0	0	48	90	3.00
75	C411	NPTEL- Environmental Remediation of Contaminated Sites	0	0	0	0	0	0.00
76	C412	NPTEL- Maintenance and Repair of Concrete Structures	0	0	0	0	0	0.00
77	C413	Internship	0	0	280	20	300	10.00
		Total	**1736**	**196**	**1288**	**1880**	**5100**	**170.00**

1.2.3 Components of Curriculum (5)

Institute Marks : 5.00

Course Components	Curriculum Content (% of total number of credits of the program)	Total number of contact hours	Total number of credits
Basic Sciences	16.47	840.00	28.00
Basic Engineering	15.29	780.00	26.00
Humanities and Social Scie	8.24	420.00	14.00
Program Core	38.24	19.50	65.00
Program Electives	8.82	450.00	15.00
Open Electives	1.76	90.00	3.00
Project(s)	5.29	270.00	9.00
Internships/Seminars	5.88	300.00	10.00
Any other (Please specify)	0	28.00	0.00
Total number of Credits			**170.00**

1.2.4 Strategies for Education Reforms (5)

Institute Marks : 5.00

The Government of Maharashtra, in consonance with the National Education Policy (NEP) 2020, has resolved to implement transformative reforms in higher and technical education to strengthen India's position as a global knowledge hub. Recognizing the urgent need to equip students with multidisciplinary competencies, critical thinking, and industry ready skills, the GR dated 4 July 2023 outlines directives for restructuring undergraduate engineering programmes across autonomous institutions and universities.

The reforms emphasize a four-year multidisciplinary UG framework with multiple entry and exit options, ensuring flexibility, inclusivity, and lifelong learning pathways. By integrating vocational skill enhancement, internships, community engagement, Indian Knowledge Systems, and value education, the curriculum seeks to balance academic consistency with holistic development. The credit framework, aligned with the National Credit Framework and AICTE guidelines, enables horizontal and vertical mobility, fostering innovation, entrepreneurship, and research orientation.

This initiative embeds several strategic reforms, summarized in Figure 1.2.4.1, which collectively support the effective implementation of NEP-2020 aligned education reforms:

- Curricular restructuring to promote multidisciplinary learning and employability.
- Skill integration through internships and experiential projects.
- Flexibility and mobility via credit transfer, online learning, and open electives.
- Ethical and societal orientation through value education, community projects, and co-curricular engagement.
- Research and innovation focus with honours and research tracks in the final year.

Through these reforms, institute aims to ensure uniformity, quality, and global competitiveness in engineering education, thereby nurturing graduates who are socially responsible, technologically adept, and prepared for emerging challenges in industry and research.

Maharashtra State Government Resolution Link: Click Here (http://www.rcpit.ac.in/files/NEP-2020-GR-Technical-4th-July-2023-030326.pdf)

https://www.rcpit.ac.in/files/NEP-2020-GR-Technical-4th-July-2023-030326.pdf

R. C. Patel Institute of Technology, Shirpur, Maharashtra, is a premier Autonomous Institute committed to excellence in technical education, research, and innovation. Established with the vision of nurturing competent professionals and responsible citizens, the institute has consistently upheld high academic standards and quality assurance practices.

Earlier affiliated with Dr. Babasaheb Ambedkar Technological University (DBATU), Lonere, now R. C. Patel Institute of Technology, Shirpur, has attained autonomous status, enabling it to design and implement a dynamic curriculum aligned with national priorities, industry needs, and global trends. The autonomy empowers the institute to introduce multidisciplinary and interdisciplinary programs, adopt outcome-based education frameworks, and integrate flexible credit systems such as the Academic Bank of Credits (ABC) and Automated Permanent Academic Account Registry (APAAR).

With a strong emphasis on innovation, transparency, and stakeholder engagement, R. C. Patel Institute of Technology, Shirpur, continues to evolve as a center of academic excellence, preparing graduates who are industry-ready, socially responsible, and globally competent.

The institute demonstrates commitment to educational reforms through structured strategies aligned with NEP 2020. The following aspects are emphasized:

Multidisciplinary and Interdisciplinary Curriculum Design

- Integration of open electives across engineering, sciences, humanities, and management.
- Promotion of interdisciplinary projects, hackathons, and research initiatives.
- Mapping of courses to POs and PSOs.

Academic Bank of Credits

- Adoption of ABC framework to allow accumulation, transfer, and redemption of credits.
- Facilitation of credit transfer from MOOCs, NPTEL, SWAYAM, and other recognized platforms.
- Ensures flexibility and lifelong learning opportunities.

Automated Permanent Academic Account Registry

- Registration of students under APAAR for unique academic identity.
- Transparent tracking of credits, achievements, and mobility across institutions.
- Strengthens accountability and recognition of academic progress.

Outcome-Based Mapping of Activities

- All curricular and co-curricular activities mapped to COs, POs, and PSOs.
- Continuous monitoring of attainment levels through direct and indirect assessment tools.
- Evidence-based reporting for accreditation compliance.

Skill Development and Industry Linkages

- Collaboration with industries for internships and training.
- Organization of interdisciplinary hackathons, innovation challenges, and entrepreneurship programs.
- Focus on employability, innovation, and societal impact.
- Introduction of value-added courses in emerging areas.

Digital and Flexible Learning Initiatives

- Integration of MOOCs, and online platforms.
- Credit transfer from digital courses under ABC.
- Regular feedback from students, alumni, faculty, and industry experts.
- Curriculum reforms aligned with emerging technologies and societal needs.
- Participatory governance ensuring inclusivity and transparency.
- Continuous review through IQAC and Academic Council.

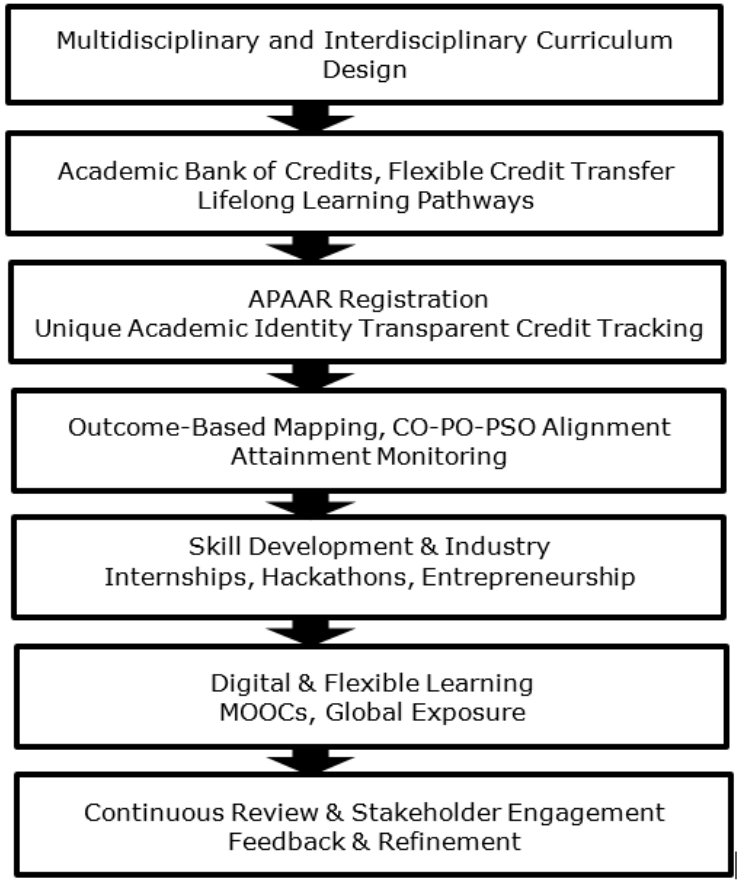


Figure 1.2.4.1: Strategies for Education Reforms

The curriculum design incorporates various educational reforms such as multidisciplinary and interdisciplinary learning approaches, implementation of the ABC, integration of skill-based courses, and recognition of prior learning to enhance flexibility and learner-centric education. The mapped activities reflecting the implementation of these reforms within the curriculum design are presented in Table No. 1.2.4.1.

Table 1.2.4.1: Mapped activities in curriculum design

Name of the Course/ Activity	Aligned with NEP Component	Details
Health and Wellness-Mind and Body Management	Liberal Learning	In 1st Semester
Indian Knowledge System	Humanities and Social Science	In 1st Semester
Automation in Construction	Multidisciplinary	In 3rd Semester
Community Engagement Service	Experiential Learning	In 3rd Semester
Remote Sensing and GIS	Multidisciplinary	In 4th Semester
Design Thinking laboratory	Humanities and Social Science	In 4th Semester
Legal Aspects in Civil Engineering	Multidisciplinary	In 5th Semester
Computer Aided Civil Engineering Drawing Lab	Multidisciplinary	In 6th Semester
Environmental Studies	Humanities and Social Science	In 6th Semester
Semester Project-I, II, III	Skill Enhancement Course	In 3rd Semester to 5th Semester
Project Stage- I, II	Skill Enhancement Course	In 6th Semester to 7th Semester
Internship	Skill Enhancement Course	8th Semester

1.3 PO, PSO and their Mapping with Courses (20) Total Marks 20.00

1.3.1 POs and PSOs (5) :

PSO1	Graduates will apply core Civil Engineering principles to survey, plan, analyze, design, and manage infrastructure systems using innovative, sustainable, and efficient approaches for real-world challenges.
PSO2	Graduates will uphold ethical professional practice, collaborate effectively in teams, and communicate clearly to enhance employability skills while fostering entrepreneurial ventures in diverse civil engineering contexts.

1.3.2 Mapping between the Courses and POs/PSOs (15) Institute Marks : 15.00

PO:

PO Number	List of Courses
PO1	C101, C102, C103, C104, C105, C106, C107, C108, C110, C111, C112, C113, C114, C115, C116, C117, C118, C119, C120, C201, C202, C203, C204, C205, C206, C207, C208, C209, C210, C211, C214, C215, C216, C217, C218, C219, C220, C221, C223, C224, C301, C302, C303, C304, C305, C306, C307, C308, C309, C311, C312, C313, C314, C315, C316, C317, C318, C319, C320, C321, C401, C402, C403, C404, C405, C406, C407, C408, C409, C410, C411, C412, C413
PO2	C101, C102, C103, C104, C105, C106, C107, C108, C109, C110, C111, C112, C113, C114, C115, C116, C117, C118, C119, C120, C201, C202, C203, C204, C205, C206, C207, C208, C209, C210, C211, C214, C215, C216, C217, C218, C219, C220, C221, C223, C224, C301, C302, C303, C304, C305, C306, C307, C308, C309, C311, C312, C313, C314, C315, C316, C317, C318, C319, C320, C321, C322, C401, C402, C403, C404, C405, C406, C407, C408, C409, C410, C411, C412, C413
PO3	C102, C104, C105, C106, C107, C108, C110, C111, C112, C113, C114, C115, C116, C117, C118, C119, C120, C206, C207, C208, C209, C210, C211, C215, C216, C217, C218, C219, C220, C221, C222, C223, C301, C302, C303, C304, C305, C306, C307, C308, C309, C311, C312, C313, C314, C315, C316, C317, C318, C319, C320, C321, C322, C401, C402, C403, C404, C405, C406, C407, C408, C409, C410, C411, C412, C413
PO4	C101, C104, C105, C107, C108, C109, C110, C112, C113, C115, C116, C117, C119, C120, C201, C202, C203, C204, C205, C206, C207, C208, C209, C210, C211, C214, C215, C216, C217, C218, C219, C220, C221, C223, C224, C301, C302, C303, C304, C305, C306, C307, C308, C311, C312, C313, C314, C315, C316, C317, C318, C321, C401, C402, C403, C404, C405, C406, C408, C409, C410, C411, C412, C413
PO5	C101, C104, C107, C109, C110, C112, C113, C114, C115, C116, C117, C118, C119, C120, C202, C203, C204, C205, C208, C209, C210, C211, C215, C216, C219, C220, C221, C223, C224, C301, C302, C303, C304, C305, C306, C307, C308, C309, C311, C312, C313, C314, C315, C316, C317, C318, C319, C321, C322, C401, C402, C403, C404, C405, C406, C408, C409, C410, C411, C412, C413
PO6	C105, C108, C109, C112, C115, C116, C119, C208, C209, C210, C211, C219, C220, C223, C301, C302, C303, C304, C305, C306, C308, C309, C311, C313, C314, C315, C316, C317, C318, C320, C321, C322, C401, C402, C403, C404, C405, C406, C407, C408, C409, C410, C411, C412, C413
PO7	C109, C112, C113, C115, C116, C117, C119, C219, C220, C222, C223, C305, C306, C308, C309, C310, C311, C405, C406, C407, C408, C411, C412, C413
PO8	C104, C107, C109, C113, C115, C117, C119, C120, C208, C211, C217, C218, C221, C222, C223, C305, C306, C307, C308, C309, C310, C311, C319, C321, C403, C404, C405, C406, C407, C408, C409, C411, C412, C413
PO9	C102, C103, C105, C106, C108, C109, C111, C112, C115, C116, C119, C206, C207, C208, C211, C215, C216, C219, C220, C223, C303, C304, C308, C310, C311, C313, C314, C315, C316, C320, C321, C401, C402, C408, C409, C413
PO10	C102, C106, C109, C111, C112, C113, C115, C116, C117, C119, C120, C206, C207, C208, C211, C223, C224, C305, C306, C308, C309, C311, C313, C314, C319, C321, C322, C401, C402, C403, C404, C405, C406, C407, C408, C409, C410, C411, C412, C413
PO11	C101, C102, C103, C104, C105, C106, C107, C108, C109, C110, C111, C112, C113, C115, C116, C117, C119, C120, C202, C203, C204, C205, C206, C207, C208, C209, C210, C211, C215, C216, C217, C218, C219, C220, C221, C222, C223, C224, C301, C302, C303, C304, C307, C308, C309, C310, C311, C312, C315, C316, C317, C318, C320, C321, C322, C403, C404, C405, C406, C407, C408, C409, C410, C411, C412

PSO:

PO Number	List of Courses
PSO1	C101, C103, C104, C106, C107, C110, C112, C113, C114, C115, C116, C117, C118, C119, C120, C201, C202, C203, C204, C205, C206, C207, C208, C209, C210, C211, C214, C215, C216, C217, C218, C219, C220, C221, C223, C224, C301, C302, C303, C304, C305, C306, C307, C308, C309, C310, C311, C312, C313, C314, C315, C316, C317, C318, C319, C320, C321, C322, C401, C402, C403, C404, C405, C406, C407, C408, C409, C410, C411, C412, C413
PSO2	C103, C104, C106, C107, C109, C112, C113, C114, C115, C116, C117, C118, C119, C120, C202, C203, C204, C205, C206, C207, C208, C209, C210, C211, C215, C216, C217, C218, C219, C220, C221, C222, C223, C301, C302, C303, C304, C305, C306, C307, C308, C309, C310, C311, C313, C314, C315, C316, C317, C318, C319, C320, C321, C322, C401, C402, C403, C404, C405, C406, C407, C408, C409, C410, C411, C412, C413

1.4 Course Outcomes and Course Articulation Matrix (30) Total Marks 30.00

1.4.1 Course Outcome (Semester Wise) (15)

Institute Marks : 15.00

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

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

Course Code :	C204	Semester :	3

Course Outcome	Statements
C204.1	Determine the Reduced Levels (RLs) of various points using different leveling methods.
C204.2	Analyze and perform theodolite surveying operations for measuring horizontal and vertical angles in elevation and positioning.
C204.3	Apply tachometric surveying techniques to calculate horizontal distances and elevations.
C204.4	Set out and evaluate horizontal curves using various field methods.

Course Code :	C221	Semester :	4

Course Outcome	Statements
C221.1	Explain fundamental concepts of structural analysis.
C221.2	Evaluate internal forces in fix and continuous beam, to draw shear force and bending moment diagram for the same.
C221.3	Analyse structure of statically determinate and indeterminate pin jointed structures.
C221.4	Determine normal thrust, shear force and bending moment in two and three hinged arches subjected to different loading condition.
C221.5	Analyse indeterminate structures using basics of slope deflection method.

Course Code :	C305	Semester :	5

Course Outcome	Statements
C305.1	Assess the implementation of Transportation Engineering concepts applied in Highway Engineering.
C305.2	Analyze the theoretical and practical aspects of highway engineering along with their design and management applications.
C305.3	Analyze pavement design by considering various aspects associated with traffic safety measures.
C305.4	Evaluate the basics and design considerations of various components of railway engineering.
C305.5	Analyze the types and functions of tracks, junctions, and railway stations.

Course Code :	C313	Semester :	6

Course Outcome	Statements
C313.1	Explain the concept of Estimating and its importance
C313.2	Calculate the detailed quantity, costing & numbers of man power etc. related to construction project.

C313.3	Prepare abstract cost, bill of quantities (BOQ), and detailed cost estimates in accordance with standard specifications.
C313.4	Analyze bar bending schedules for reinforcement works, focusing on key components and their interrelationships

Course Code :	**C403**	**Semester :**	**7**

Course Outcome	**Statements**
c403.1	Develop strategies that incorporate environmental and ecological factors to plan public water supply requirements.
C403.2	Apply BIS standards to assess water quality and determine the appropriate treatment method.
C403.3	Analyze source water characteristics and evaluate the best available technologies (BAT) for its physical and chemical treatment.
C403.4	Evaluate wastewater characteristics and recommend the best available technologies (BAT) for its physical, chemical, and microbiological treatment.
C403.5	Design strategies to address contemporary global water and wastewater challenges by identifying underlying causes and patterns related to water shortage, reuse, and emerging contaminants.

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

Course Outcome	**Statements**
C410.1	Analyze the importance of advanced methods of construction technology.
C410.2	Evaluate the application of structural design principles in Metro construction.
C410.3	Apply design principles of precast concrete and demonstrate understanding of fundamentals of metro rail systems.
C410.4	Analyze the importance of advanced methods of construction technology.

1.4.2 Course Articulation Matrix (15) :

1 . course name : C2C204

Course	Statements	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
C2C204.1	Determine t	2	1	-	1	1	-	-	-	-	-	1
C2C204.2	Analyze an	2	1	-	1	1	-	-	-	-	-	1
C2C204.3	Apply tachc	2	1	-	1	1	-	-	-	-	-	1
C2C204.4	Set out and	3	1	-	1	1	-	-	-	-	-	1
Average		**2.25**	**1.00**	**0.00**	**1.00**	**1.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.00**

2 . course name : C2C221

Course	Statements	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
C2C221.1	Explain fun	3	3	2	2	3	-	-	1	-	-	1
C2C221.2	Evaluate int	3	3	2	2	3	-	-	1	-	-	1
C2C221.3	Analyse str	3	3	2	2	3	-	-	1	-	-	1
C2C221.4	Determine t	3	3	2	2	3	-	-	1	-	-	1
C2C221.5	Analyse ind	3	3	2	2	3	-	-	1	-	-	1
Average		**3.00**	**3.00**	**2.00**	**2.00**	**3.00**	**0.00**	**0.00**	**1.00**	**0.00**	**0.00**	**1.00**

3 . course name : C3C305

Course	Statements	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
C3C305.1	Assess the	1	1	1	1	1	2	-	1	-	-	-
C3C305.2	Analyze the	1	2	1	1	1	1	1	1	-	-	-
C3C305.3	Analyze pa	1	1	1	-	1	2	1	-	-	-	-
C3C305.4	Evaluate th	1	1	1	-	1	-	1	1	-	-	-
C3C305.5	Analyze the	-	1	1	1	1	-	-	1	-	1	-
Average		**1.00**	**1.20**	**1.00**	**1.00**	**1.00**	**1.67**	**1.00**	**1.00**	**0.00**	**1.00**	**0.00**

4 . course name : C3C313

Course	Statements	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
C3C313.1	Explain the	3	1	1	-	1	2	-	-	1	-	-

C3C313.2	Calculate th	2	2	-	-	1	2	-	-	1	-	-
C3C313.3	Prepare abs	2	2	1	1	1	2	-	-	1	1	-
C3C313.4	Analyze ba	2	3	1	1	1	2	-	-	1	-	-
Average		**2.25**	**2.00**	**1.00**	**1.00**	**1.00**	**2.00**	**0.00**	**0.00**	**1.00**	**1.00**	**0.00**

5 . course name : C4C403

Course	**Statements**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
C4c403.1	Develop str	3	1	2	1	3	3	-	3	-	3	3
C4C403.2	Apply BIS s	3	3	2	3	3	3	-	-	-	1	1
C4C403.3	Analyze sou	3	3	1	3	3	2	-	-	-	1	3
C4C403.4	Evaluate wa	3	3	2	1	3	3	-	3	-	2	3
C4C403.5	Design stra	3	2	2	1	2	3	-	3	-	1	3
Average		**3.00**	**2.40**	**1.80**	**1.80**	**2.80**	**2.80**	**0.00**	**3.00**	**0.00**	**1.60**	**2.60**

6 . course name : C4C410

Course	**Statements**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
C4C410.1	Analyze the	2	1	1	1	1	3	-	-	-	1	3
C4C410.2	Evaluate th	2	3	1	1	1	3	-	-	-	1	2
C4C410.3	Apply desig	3	2	1	1	1	3	-	-	-	1	3
C4C410.4	Analyze the	2	2	1	1	1	3	-	-	-	1	3
Average		**2.25**	**2.00**	**1.00**	**1.00**	**1.00**	**3.00**	**0.00**	**0.00**	**0.00**	**1.00**	**2.75**

1 . Course Name : C2C204

Course	PSO1	PSO2
C2C204.1	3	3
C2C204.2	3	3
C2C204.3	3	3
C2C204.4	3	3
Average	**3.00**	**3.00**

2 . Course Name : C2C221

Course	PSO1	PSO2
C2C221.1	3	2
C2C221.2	3	2
C2C221.3	3	2
C2C221.4	3	2
C2C221.5	3	2
Average	**3.00**	**2.00**

3 . Course Name : C3C305

Course	PSO1	PSO2
C3C305.1	3	2
C3C305.2	3	1
C3C305.3	3	1
C3C305.4	3	1
C3C305.5	3	1
Average	**3.00**	**1.20**

4 . Course Name : C3C313

Course	PSO1	PSO2
C3C313.1	2	2

C3C313.2	3	2
C3C313.3	2	3
C3C313.4	3	2
Average	**2.50**	**2.25**

5 . Course Name : C4C403

Course	**PSO1**	**PSO2**
C4c403.1	3	3
C4C403.2	3	3
C4C403.3	3	3
C4C403.4	3	3
C4C403.5	3	3
Average	**3.00**	**3.00**

6 . Course Name : C4C410

Course	**PSO1**	**PSO2**
C4C410.1	3	1
C4C410.2	3	2
C4C410.3	3	1
C4C410.4	3	2
Average	**3.00**	**1.50**

1.5 Program Articulation Matrix (5) Total Marks 5.00

Program Articulation Matrix

:

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
C101	3	2	0	1.20	1	0	0	0	0	0	1
C102	2.25	1	1	0	0	0	0	0	1.75	1	1
C103	1.50	1.25	0	0	0	0	0	0	1	0	1
C104	3	2	1	1.50	1	0	0	1	0	0	1
C105	2	1.60	1	1	0	2	0	0	1	0	2
C106	1.88	1.13	0.50	0	0	0	0	0	1.38	0.50	1
C107	3	2	1	1.50	1	0	0	1	0	0	1
C108	2	1.60	1	1	0	2	0	0	1	0	2
C109	0	1	0	1	1	2	1.50	1	1	1	1
C110	3	2	1	1.20	1	0	0	0	0	0	1
C111	2	1	1	0	0	0	0	0	1.75	1	1
C112	2	2.50	1.33	1	1.75	2.33	2.33	0	1	1	1.67
C113	2.20	1.40	1.40	1.50	1.50	0	1	1	0	1	2
C114	1.67	1	2	0	1.17	0	0	0	0	0	0
C115	1	1	1	1	1	2	1.33	1	1.33	1	1
C116	2	1.75	1.17	0.50	0.88	1.17	1.17	0	1.38	1	1.33
C117	2.20	1.40	1.40	1.50	1.50	0	1	1	0	1	2
C118	1.67	1	2	0	1.17	0	0	0	0	0	0
C119	1	1	1	1	1	2	1.33	1	1.33	1	1
C120	3	3	2	1.8	0	0	1	0	1	1	2
C201	3	2	0	2	0	0	0	0	0	0	0
C202	3	2.20	0	1	2	0	0	0	0	0	1
C203	3	2.20	0	1	2	0	0	0	0	0	1
C204	2.25	1	0	1	1	0	0	0	0	0	1
C205	2.25	1	0	1	1	0	0	1	0	0	1
C206	2.40	2.80	2.40	1.60	0	0	0	0	2.75	1.50	1
C207	2.40	2.80	2.40	1.60	0	0	0	0	2.75	1.50	1
C208	2.60	1.60	1	2	1.67	2.75	0	3	2.20	1	2
C209	2.80	1.80	1.40	1.80	1.75	2.80	0	0	0	0	3

C210	2.80	1.80	1.40	1.80	1.75	2.80	0	0	0	0	3
C211	3	2.40	2.20	2.50	2.75	2.67	0	2.33	2.75	2	2.75
C214	3	2.80	0	2.20	0	0	0	0	0	0	0
C215	3	2	1	1.40	2	0	0	0	1.80	0	2
C216	3	2	1	1.40	2	0	0	0	1.80	1	2
C217	2	1.50	1	1.25	0	0	0	2	0	0	1
C218	2	1.50	1	1.25	0	0	0	2	0	0	1
C219	2.40	1	1	1	1	2.33	2	0	1.80	0	1.80
C220	2.40	1	1	1	1	2.33	2	0	1.80	0	1.80
C221	3	3	2	2	3	0	0	1	0	0	1
C222	0	0	1	0	0	0	2.40	1	0	0	1
C223	3	2.40	2.20	2.60	2.80	2	3	2	3	2	3
C224	2	1.67	0	1	1	0	0	0	0	1.25	1
C301	3	2.80	1	1	2.25	3	0	0	0	0	1
C302	3	2.80	1	1	2.25	3	0	0	0	0	1
C303	3	2.75	1	1	2	2	0	0	1	0	3
C304	3	2.75	1	1	2	2	0	0	1	0	3
C305	1	1.20	1	1	1	1.67	1	1	0	1	0
C306	1	1.20	1	1	1	1.67	1	1	0	1	0
C307	3	3	2	2	3	0	0	1	0	0	1
C308	2.75	2	2	1.25	2	2.67	3	2.33	2.33	1.67	1.67
C309	1	1.20	1	0	1	2	2.33	1	0	1	1
C310	0	0	0	0	0	0	3	1.80	1.60	0	1
C311	3	2.20	1	1.40	2	2.60	2.60	2.60	3	1.60	2.20
C312	1	2	1	1	2	0	0	0	0	0	1.25
C313	2.25	2	1	1	1	2	0	0	1	1	0
C314	2.25	2	1	1	1	2	0	0	1	1	0
C315	2.60	2	1.40	1	2.33	3	0	0	1	0	2.20
C316	2.60	2	1.40	1	2.33	3	0	0	1	0	2.20
C317	3	1.80	1.67	1	1.25	2.40	0	0	0	0	1

C318	3	1.80	1.67	1	1.25	2.40	0	0	0	0	1
C319	1	1	1	0	1	0	0	3	0	1.75	0
C320	1.67	1	1	0	0	2.80	0	0	1	0	1
C321	2.33	2	1.40	2	1.75	3	0	2	1.25	1.75	2
C322	0	1	1	0	1	1	0	0	0	1	1
C401	3	3	1	1	1	1	0	0	1	1	0
C402	3	3	1	1	1	1	0	0	1	1	0
C403	3	2.40	1.80	1.80	2.80	2.80	0	3	0	1.60	2.60
C404	3	2.40	1.80	1.80	2.80	2.80	0	3	0	1.60	2.60
C405	2.20	2.40	2.20	2.60	3	3	3	3	0	3	3
C406	3	1	1	1	1	3	2	1.	0	1	1
C407	3	1	1	0	0	3	3	1	0	1	1
C408	3	2.40	2.20	2.60	2.80	3	3	2	3	2	3
C409	2.50	2.25	1	1.50	1.75	2.50	0	1	1.25	1.75	2.75
C410	2.25	2	1	1	1	3	0	0	0	1	2.75
C411	3	2.25	1.25	1.50	1.50	2.75	3	1	0	1	2
C412	3	2.25	1.67	1.67	1.67	2.75	3	3	0	1.67	2.67
C413	3	1.25	1.33	1	2	2.67	3	3	1.50	1	0

Course Code	**PSO1**	**PSO2**
C101	1	0
C102	0	0
C103	1	1
C104	3	2
C105	0	0
C106	0.50	0.50
C107	3	2
C108	0	0
C109	0	1
C110	1	0
C111	0	0

C112	1	1
C113	1	1
C114	1	1
C115	1	1
C116	0.50	0.50
C117	1	1
C118	1	1
C119	1	1
C120	1	1
C201	1	0
C202	3	1
C203	3	1
C204	3	3
C205	3	3
C206	1.40	1
C207	1.40	1
C208	2.40	2.40
C209	1.20	1.50
C210	1.20	1.50
C211	3	2.25
C214	1	0
C215	2	1.40
C216	2	1.40
C217	3	3
C218	3	3
C219	1.20	1.40
C220	1.20	1.40
C221	3	2
C222	0	1
C223	3	3

C224	1	0
C301	1.33	1.33
C302	1.33	1.33
C303	2.75	1.75
C304	2.75	1.75
C305	3	1.20
C306	3	1.20
C307	3	2
C308	1.75	1.75
C309	1.40	2.40
C310	1	1
C311	2.20	2.20
C312	1	0
C313	2.50	2.25
C314	2.50	2.25
C315	3	1
C316	3	1
C317	1	1
C318	1	1
C319	3	2
C320	1	1.60
C321	2.50	1.20
C322	1	1
C401	3	3
C402	3	3
C403	3	3
C404	3	3
C405	2.60	3
C406	2.20	2.60
C407	1.25	1

C408	3	3
C409	2.50	1.50
C410	3	1.50
C411	2.75	2.25
C412	2	2
C413	2	1.25

2 OUTCOME-BASED TEACHING LEARNING (120)

Total Marks 120.00

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

Total Marks 20.00

Institute Marks : 20.00

We at R. C. Patel Institute of Technology, Shirpur implemented a structured framework to ensure quality in teaching and learning, aligned with Outcome-Based Education (OBE), regulatory mandates, and stakeholder expectations. Curriculum design is governed by the Board of Studies (BoS) and Academic Council (AC), incorporating industry inputs, alumni feedback and NEP 2020 guidelines.

Teaching methodologies emphasize learner-centric approaches such as flipped classrooms, experimental learning, interdisciplinary projects, and ICT-enabled instructions. Faculty members undergo regular training through Faculty Development Programs (FDPs), peer mentoring, and pedagogical workshops. Academic calendars and teaching plans are accurately prepared and monitor via ERP and LMS platforms.

Term Test (TT) evaluation, activity-based evaluation, and rubric-based evaluation are components of Continuous Assessment (CA). Students, instructors, alumni, and employers participate in feedback channels, and course changes are driven by actionable insights. The Internal Quality Assurance Cell (IQAC) fosters continuous improvement, monitors CO-PO attainment, and performs academic audits.

Digital tools such as virtual labs, MOOCs, and e-contents enhance accessibility and engagement. Student support is ensured through mentoring systems, remedial classes, and career guidance. Industry interaction is fostered via internships, guest lectures, and collaborative projects. Quality is further reinforced through benchmarking, strategic planning, and monitoring. This integrated approach ensures academic excellence, regulatory alignment, and holistic development of learners.

A. Curriculum Design and Revision

The Civil Engineering curriculum is systematically framed and periodically revised by the Board of Studies (BoS) and approved by the Institute Academic Council. Figure 2.1.1 shows the curriculum design process ensures alignment with POs, PSOs, and evolving industry requirements, in accordance with the principles of Outcome-Based Education (OBE).

Key Features of the Curriculum Design Process:

- **Stakeholder Involvement:** The curriculum revision is a participative process involving feedback and suggestions from diverse stakeholders
- **Industry Experts:** To integrate recent trends and technologies such as advance construction techniques for enhancing industry relevance.
- **Alumni:** To incorporate current professional practices, research trends, and employability skills expected in global market.
- **Faculty Members:** To introduce research-driven and academically enriching content supporting innovation and advanced learning.
- **Students:** To collect inputs through structured feedback mechanisms regarding curriculum relevance, delivery methods, and skill-based learning.

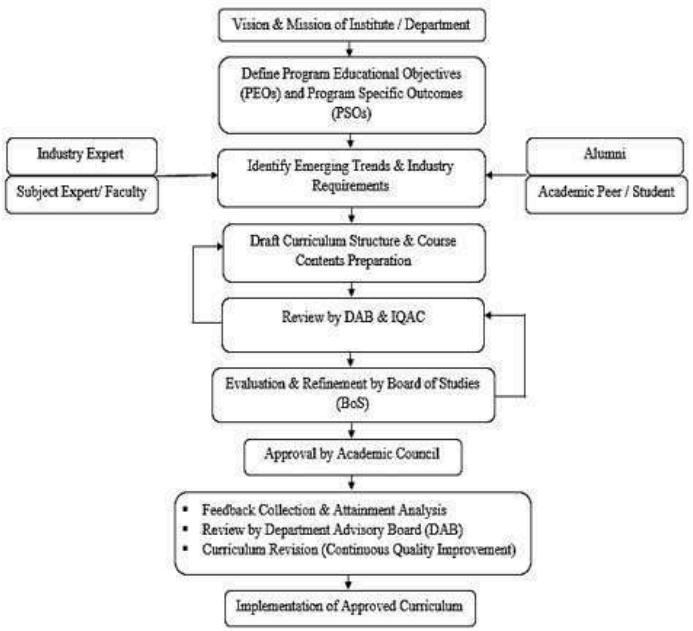


Figure 2.1.1: Process Flowchart for Curriculum Design and Revision

Curriculum Structure and Content: The curriculum maintains an appropriate balance among:

- Structured core courses cover essential and advanced Civil Engineering domains, ensuring strong theoretical and technical foundations.
- Integrated laboratories and mini-projects strengthen practical skills, design ability, and hands-on competency.
- Electives and Emerging Technologies: A range of electives in Intellectual Property Rights (IPR), Town and Urban Planning, Structural Audit, and Repair and Rehabilitation Technique support specialization and flexibility.
- Internship and Capstone Project: Industry internships and final-year projects build problem-solving skills, teamwork, innovation, and professional readiness.
- Contemporary and Societal Aspects: Curriculum includes sustainability, safety, ethics, and professional practices to promote responsible and socially aware engineering graduates.

Periodic Review and Continuous Improvement: The Civil Engineering program adopts a systematic and continuous review mechanism to ensure curriculum relevance, quality enhancement, and effective attainment of POs and PSOs. The process is driven by academic audits, stakeholder feedback, and recommendations from statutory bodies, enabling continuous improvement in teaching–learning and assessment practices.

- Review of technological advancements and emerging trends in Civil Engineering.
- Assessment of industrial developments and evolving professional skill requirements.
- Collection and analysis of feedback from industry experts, alumni, faculty and students (if required).
- Evaluation of academic audit outcomes and COs–POs/PSOs attainment analysis.
- Implementation of recommendations from the BoS, IQAC, and Academic Council.

As a result of the systematic review and continuous improvement process, the curriculum remains updated and relevant through the effective integration of emerging technologies and industry-driven practices. The outcome-based curriculum design, supported by enhanced laboratory work, projects, and practical exposure, significantly improves students' employability and professional competence.

Continuous interaction with industry and incorporation of research-oriented activities strengthen the linkage between academics, industry, and research, thereby fostering innovation, experiential learning, and problem-solving skills.

Furthermore, structured curriculum mapping, regular assessment, and continuous evaluation ensure effective attainment of POs and PSOs, contributing to sustained quality enhancement of the academic program.

B. Outcome-Based Education (OBE)

The Department of Civil Engineering follows the principles of OBE to ensure that graduates acquire the knowledge, skills, and professional competencies required by industry, society, and higher studies.

COs–POs/PSOs Mapping and Attainment for the Program

Each course offered by the department has clearly defined COs that are aligned with the POs and PSOs. COs–POs/PSOs mapping is carried out using a defined correlation scale (Low/Medium/High) to ensure effective linkage between COs and POs.

This systematic mapping ensures curriculum coherence, eliminates redundancy, and strengthens alignment with graduate attributes. It helps the department verify that students progressively achieve program competencies related to engineering knowledge, design skills, communication, ethics, teamwork, and modern tool usage.

Attainment of COs is evaluated through direct and indirect assessment tools and the aggregated COs attainment is used to determine POs and PSOs attainment at the program level.

Assessment and Attainment Tracking

A structured assessment process is adopted to measure student performance and outcome attainment. Direct assessment includes Continuous Assessments (CA), End-Semester Examinations (ESE), laboratory evaluations, mini-projects, seminars, and capstone projects. Indirect assessment is carried out through course exit and program exit surveys. Attainment levels are calculated using predefined targets, and the results are analyzed to identify gaps.

Regular tracking of attainment provides measurable evidence of student learning and academic effectiveness. It enables early identification of learning gaps, supports data-driven academic decisions, and enhances student performance through timely remedial actions, mentoring, and curriculum enrichment. Corrective and preventive actions are implemented through curriculum enrichment, teaching–learning improvements, and academic support mechanisms.

Tools and Documentation

The Civil engineering department maintains systematic documentation to support OBE implementation and review. Standard tools such as COs–POs/PSOs mapping matrices, attainment calculation sheets, rubrics, assessment records, exit forms, and analysis reports are used.

Digital tools and spreadsheets are employed for efficient data collection, analysis, and tracking of attainment. All records are periodically reviewed by the Department Committee and Academic bodies to ensure transparency, compliance, and continuous quality improvement in the teaching–learning process.

C. Teaching-Learning Process

The overall teaching-learning process is classified as Planning, Execution and Analysis Stages. The department follows a structured planning process to ensure effective delivery of the curriculum as shown in Figure 2.1.2.

C.1. Planning Phase: The process begins with the preparation of the Institute Academic Calendar and the Autonomy Syllabus.

Course Choice and Load Distribution:

- Faculty members submit a Course Choice Form prior to the commencement of the semester to ensure that course distribution is aligned with their areas of expertise.
- Based on these inputs, the Teaching Load Distribution is finalized to ensure balanced workload, effective course delivery, and improved attainment of COs.

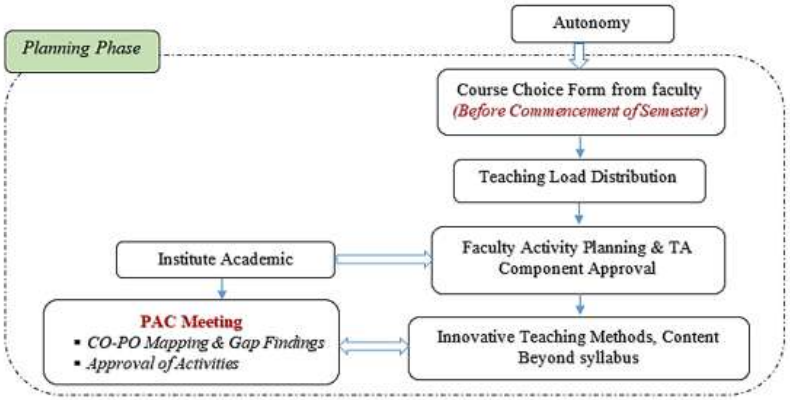


Figure 2.1.2: Planning Phase in Teaching–Learning Process

Faculty Activity Planning and Approval:

- Faculty members prepare detailed lecture wise teaching Activity Plans.
- Teacher's Assessment (TA) components are decided to ensure effective course delivery and evaluation.
- Course content based Individual Presentation, Group Discussion, Mock Interviews and many more activities are used.
- These plans are reviewed and approved by the department to maintain alignment with COs and facilitate continuous improvement in the teaching–learning process.

Innovative Teaching Methods and Content beyond Syllabus:

- Faculty members integrate innovative pedagogical practices (e.g., Interdisciplinary Projects, project-based learning, collaborative learning, case studies and ICT tools).
- Innovative Component, Virtual lab, Add on Courses and additional content beyond the syllabus is integrated to boost student learning and prepare them for industry demands.

Program Assessment Committee (PAC) Meeting:

- CO–PO Mapping and Gap Analysis: COs are systematically mapped to POs and PSOs to ensure alignment with the program objectives.
- Gap analysis is performed to identify areas where students may not be achieving the desired outcomes, and corrective measures are implemented.
- Review and Approval of Activities: All academic and co-curricular activities, including teaching plans, assessments, and student support initiatives, are periodically reviewed by faculty and approved by the Module coordinator / Head of Department / Dean Academics.
- This ensures alignment with course outcomes and continuous improvement in teaching–learning processes.

C.2. Execution Phase:

The department implements the curriculum through a systematic execution process covering theory, practical/tutorials and monitoring mechanisms.

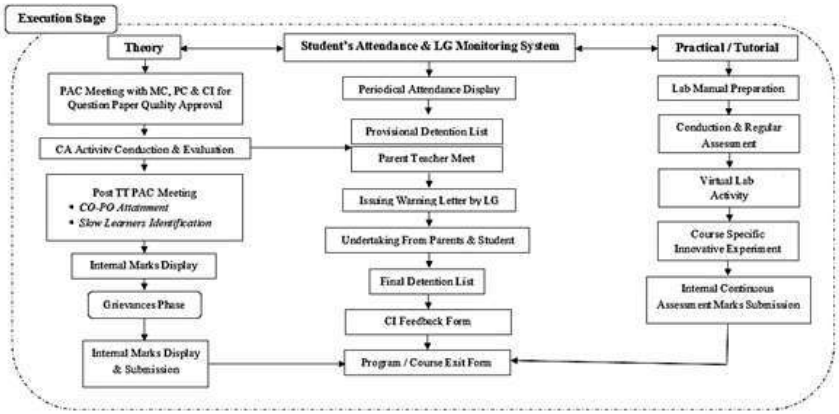


Figure 2.1.3: Execution Phase in Teaching–Learning Process

Theory Component:

- PAC meetings with Course and module coordinator are conducted for Term Test question paper quality approval.
- Question papers for the Term Test are designed based on Blooms Taxonomy levels.
- Term Tests (TT-1 and TT-2) and teacher's assessment components are conducted through continuous evaluation to effectively monitor and enhance student learning outcomes.
- After Term Test, Program Assessment Committee (PAC) meetings are conducted to review CO–PO attainment, identify slow learners for targeted academic support, and evaluate the effectiveness of teaching–learning strategies to ensure continuous improvement.
- The program supports advanced learners through value-added courses, projects, and certifications, and assists slow learners through remedial classes, mentoring, and continuous feedback, ensuring effective attainment of COs, POs, and PSOs.
- Internal marks are displayed transparently, with a grievance redressal phase before final submission.

Practical / Tutorial Component

- Faculty prepares lab manuals and conduct regular assessments.
- Students engage in virtual labs, and innovative experiments beyond curriculum.

Student Attendance and LG (Local Guardian) Monitoring System: Student attendance is monitored and displayed periodically, with provisional detention lists prepared for non-compliant students. Parent–teacher meetings and warning letters are employed to ensure timely corrective actions for students with low attendance. Students, along with their parents, submit formal undertakings when attendance falls below the required threshold.

C.3. Evaluation and Analysis Phase:

ESE Examination (Theory and Practical): Students undergo End Semester Examinations (both theory and practical) as a measure of attainment of COs and POs.

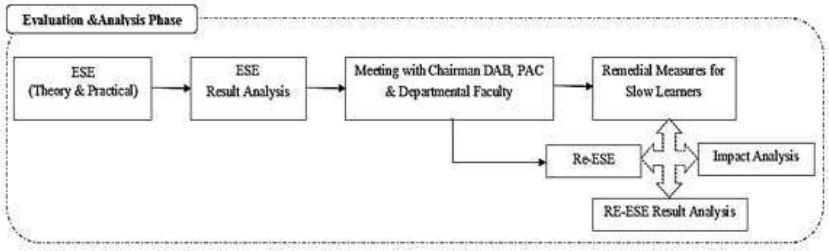


Figure 2.1.4: Evaluation and Analysis Phase in Teaching–Learning Process

Result Analysis: ESE results are analyzed to assess the level of CO attainment. The analysis identifies advanced learners, slow learners, and areas of improvement in the curriculum or teaching methods.

Review Meetings: Meetings are conducted with the Director, Controller of Examinations (COE), Program Assessment Committee (PAC), IQAC, and departmental faculty. The purpose is to analyze the results, identify gaps in CO-PO attainment, and plan appropriate corrective measures.

Remedial Measures for Slow Learners: Based on analysis and faculty discussions, remedial classes are organized to support slow learners, ensuring inclusive learning and enhancement of CO attainment

Re-ESE (Supplementary Exam): Students who failed are given the opportunity to improve their performance through a re-examination (Re-ESE), ensuring fairness and continuous learning.

Impact Analysis: Post Re-ESE, results are analyzed to measure the effectiveness of remedial actions and re-examination in improving CO attainment. Feedback from this analysis informs curriculum refinement, teaching methodology improvement, and continuous quality Improvement.

The process forms a feedback loop, ensuring systematic evaluation, identification of learning gaps, corrective actions, and improved CO-PO attainment over time.

D. OBE Implementation:

Based on teaching-learning experience, Civil Department has adopted the following Pedagogical approaches as shown in Figure 2.1.5. Department adopts a structured Outcome-Based Education approach where teaching–learning activities are aligned with COs and POs. Academic planning, delivery, and assessments are designed to ensure students progressively achieve the expected competencies. Continuous review and improvement mechanisms are followed to maintain effectiveness.

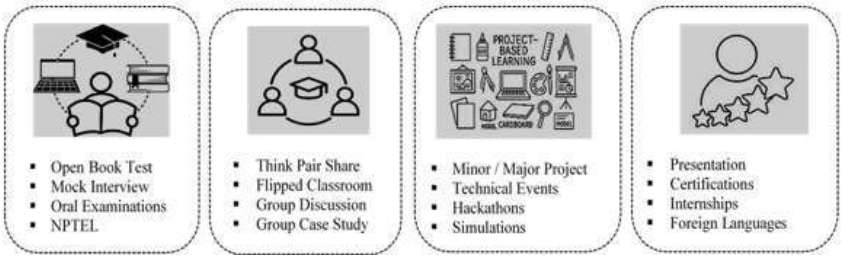


Figure 2.1.5: Pedagogical Approaches in the Teaching–Learning Process

- **Collaborative Learning Practices:** Collaborative learning is encouraged through group-centric academic tasks that promote peer interaction, shared problem-solving and active participation. These practices help enhance communication skills, teamwork, and a cooperative learning environment within the department.
- **Project-Based Learning Integration:** Project-Based Learning is included as part of regular teaching–learning activities to provide hands-on, experiential exposure. Students engage in project work that supports concept reinforcement, innovation, and the development of analytical and design thinking skills relevant to Civil engineering.
- **Competency and Skill Development:** The teaching–learning process emphasizes the development of essential competencies required for engineering practice. Students are encouraged to build technical proficiency, professional behavior, and problem-solving abilities through structured academic activities that complement classroom learning.

E. Faculty Development and Training

Faculty Development and Training programs have strengthened the department's capability to deliver high-quality education aligned with current trends in Civil Engineering. Through FDP's, workshops, industry trainings, and certification courses, faculty members have enhanced their proficiency in advanced domains such as concrete technology, remote sensing, construction management, and transportation system. shown in Table 2.1.1. This improved expertise directly contributes to better curriculum delivery, enriched laboratory experiences, and the adoption of innovative teaching–learning methods. As a result, students gain clearer conceptual understanding, improved practical exposure, and stronger attainment of course and program outcomes.

Table No.2.1.1: FDP/STTP/QIP/ Workshop Completed by Faculty

Sr. No.	Academic Year	Program Name / Topic	No of Faculty	Duration	Conducted By	Outcome impact
1	24-25	PYTHON proragmming	1	5 Days	IIRS Outreach programme	Develops automation and data analysis skills
2	24-25	GIS	2	5 Days	IIRS Outreach programme	Supports informed spatial decision-making in engineering applications

3	24-25	LIDAR	1	2 Week	IIRS Outreach programme	Provides high-precision data for terrain and infrastructure analysis
4	24-25	RS/GIS	2	3 Week	IIRS Outreach programme	Integrates remote sensing and GIS for advanced geospatial insights
5	24-25	Resource Management	1	1 Week	IIRS Outreach programme	Optimizes utilization of resources ensuring sustainability
6	24-25	Geotechnical Engineering	1	5 days	Ballari Institute of Technology & Management, Ballari, Karnataka	Ensures soil stability and safe foundation design
7	24-25	Geosynthetic Engineering	1	5 days	IGIT Sarang	Improves ground performance with cost-effective solutions
8	24-25	Materials, Methods & Technologies	1	5 days	Anand International College of Engineering, Jaipur	Enhances construction quality and structural performance
9	24-25	Risk to Resilience	2	5 days	AICTE Training and Learning (ATAL) Academy	Strengthens adaptive capacity against natural hazards
10	24-25	Energy and Environment Sustainability	1	5 Days	AICTE Training and Learning (ATAL) Academy	Balances energy needs with environmental conservation
11	24-25	Smart Cities	1	5 days	AICTE Training and Learning (ATAL) Academy	Improves urban living through technology-driven governance
12	24-25	Generative AI in Teaching and Research	1	6 days	Collegiate Education Department, Government of Kerala	Enhances academic productivity and personalized learning
13	24-25	Affordable Housing	2	1 Week	Rural Development Department at NITTTR, Chandigarh	Supports inclusive development and improved living standards
14	24-25	STAAD PRO	2	1 Week	NITTTR, Chandigarh	Enables accurate structural analysis and optimized design

15	24-25	Construction Repair and Maintenance	1	1 Week	Civil Engineering Department (One Week) at NITTTR, Chandigarh	Extends infrastructure service life through timely intervention
16	24-25	Theory of Relativity	1	12 Week	Centre for Continuing Education Indian Institute of Technology Kanpur	Develops deeper scientific reasoning and conceptual clarity
17	24-25	Universal Human Values	1	1 Week	All India Council for Technical Education (AICTE)	Promotes ethical responsibility and professional integrity
18	24-25	Advanced data analysis	1	2 Week	New age edu serv	Enables data-driven insights for informed decision-making
19	24-25	AI/ML for Geodata Analysis	2	5 Days	IIRS Outreach programme	Automates and improves accuracy of spatial data interpretation
20	24-25	Gnomio Moodle	2	1 Week	IMRD, Shirpur	Facilitates organized and accessible digital learning
21	24-25	Generative AI in Teaching and Research,	1	6 days	Collegiate Education Department, Government of Kerala	Drives innovation in education and research practices
Sr. No.	**Academic Year**	**Program Name / Topic**	**No of Faculty**	**Duration**	**Conducted By**	**Outcome impact**
1	23-24	RS & GIS	1	2 Week	IIRS Outreach programme	Enables accurate spatial analysis for effective planning and sustainable decision-making
2	23-24	Renewable Energy systems	1	1 Week	JSPM's Rajarshi Shahu College of Engineering, Pune	Promotes clean energy adoption reducing environmental pollution
3	23-24	Sustainable Development	1	1 Week	Rizvi College of Engineering, Mumbai	Ensures balanced economic growth with environmental protection

4	23-24	Affordable Housing	6	1 Week	Civil Engineering Department, NITTTR, Chandigarh	Improves social equity through cost-effective housing solutions
5	23-24	Emerging Technologies in Civil Engineering	1	1 Week	Civil Engineering, Kongunadu College Of Engineering and Technology, Trichy	Enhances construction efficiency through modern tools and innovations
6	23-24	Environmental Impact	1	1 Week	Department of Civil Engineering of Haldia Institute of Technology, West Bengal,	Minimizes ecological damage through informed assessment and planning
7	23-24	Sustainable Infrastructure	1	1 Week	Chandigarh Engineering College, Jhanjeri, Mohali	Develops durable infrastructure with reduced environmental footprint
8	23-24	Structural Audit	1	1 Week	ATS Sanjay Bhokare group Institute, Miraj	Improves safety and extends lifespan of existing structures
9	23-24	Pedagogy	2	2 Week	Teaching Learning Centre, Tezpur University	Enhances teaching effectiveness and student learning outcomes
10	23-24	Sustainable Development	1	01 Week	Raj Rishi Govt. Autonomous College, Alwar, Rajasthan	Encourages responsible utilization of natural resources
11	23-24	Hydrological	1	02 Day	Dr. Rangari Vinay Ashok	Improves understanding of water systems for better management
12	23-24	Hydrology	1	12 Week	Dr. Rajib Maity	Supports flood control and efficient water resource planning
13	23-24	Sustainable Development	1	1 Week	ISTE	Strengthens long-term environmental and societal resilience

14	23-24	Environmental Conservation	1	01 Week	Raj Rishi Govt. Autonomous College, Alwar, Rajasthan	Preserves ecosystems and biodiversity for future generations
15	23-24	Auto CAD	2	01 Week	NITTTR, Chandigarh	Improves accuracy and efficiency in engineering drawings
16	23-24	Classical Mechanics - 1	1	12 Week	IIT, Kharagpur	Builds strong fundamentals in physics and analytical thinking
17	23-24	Theory of Relativity	1	12 Week	IIT, Kharagpur	Enhances advanced scientific understanding of space and time
18	23-24	Hydrological Extremes	1	1 Week	PCCOE, Pune	Supports disaster risk reduction and climate resilience planning
19	23-24	NEP 2020	1	2 Week	MMTTC, UOH	Promotes holistic, skill-based and multidisciplinary education
20	23-24	Abroad Opportunities	1	1 Day	Jaypee University Of Engineering & Technology, Guna	Enhances global exposure and international career readiness
21	23-24	IPR	1	1 Week	Institutions Innovation Council, Indian Institution of Industrial	Encourages innovation through protection of intellectual property
22	23-24	Sustainable Buildings	1	1 Week	In association with Karnataka Science and Technology Academy (KSTA), Govt. of Karnataka, Bengaluru.	Reduces energy consumption through green building practices
23	23-24	NIPAM	1	1 Day	Goverment of india (NIPAM)	Increases awareness and participation in intellectual property creation
Sr. No.	**Academic Year**	**Program Name / Topic**	**No of Faculty**	**Duration**	**Conducted By**	**Outcome impact**

1	22-23	Geospatial Application for Forest Ecosystem Analysis	1	3 Weeks	ISRO Outreach Programme, Dehradun	Enhanced skills in geospatial tools for forest monitoring, environmental assessment, and sustainable resource management
2	22-23	Remote Sensing and Digital Image Analysis	1	1 Week	ISRO Outreach Programme, Dehradun	Improved capability in satellite data interpretation and image processing for engineering and environmental applications
3	22-23	Remote Sensing and GIS Technology	1	2 Weeks	ISRO Outreach Programme, Dehradun	Strengthened GIS-based spatial analysis skills for planning, mapping, and decision-making
4	22-23	Classical Electromagnetism–II	1	12 Weeks	Indian Institute of Technology, Kanpur	Advanced conceptual understanding of electromagnetism supporting higher studies and interdisciplinary research
5	22-23	Innovation Research & IPR – Journey Towards Excellence	1	6 Days	SSGBCOE&T, Bhusawal	Developed awareness and competency in innovation processes, patents, and intellectual property management
6	22-23	Self Sustainable Buildings	1	1 Week	Presidency University, Bengaluru	Gained insights into green building concepts, energy efficiency, and sustainable construction practices
7	22-23	National Intellectual Property Awareness Mission (NIPAM)	1	1 Day	Intellectual Property Office, India	Improved understanding of IPR policies, filing procedures, and national innovation ecosystem
8	22-23	Blockchain Technology	1	1 Day	MVPS's KBT College of Engineering	Acquired basic knowledge of blockchain concepts and their applications in engineering and technology

9	22-23	Innovation Research & IPR – Journey Towards Excellence	1	1 Week	FEELA under IQAC of SPCE, Mumbai & SSGBCOE&T, Bhusawal	Strengthened research orientation and practical exposure to intellectual property creation and protection
10	22-23	Interior Design Essentials	1	3 Days	RK Design Hub	Enhanced understanding of interior design principles, space planning, and aesthetics
11	22-23	Contrivance of SDGs for Environmental Conservation	1	1 Week	Raj Rishi Govt. Autonomous College, Alwar (Rajasthan), India	Strengthened knowledge of SDG integration for environmental protection and sustainable development
12	22-23	Basics of Quantum Mechanics	1	12 Weeks	IIT, Kanpur	Developed strong fundamentals in quantum mechanics supporting advanced scientific and engineering applications

During the assessment period, faculty members actively participated in various FDP's, workshops, industry trainings, and certification programs covering emerging and core areas of Civil Engineering. These programs, conducted by reputed academic institutions and industry bodies, enhanced faculty technical competency, pedagogical effectiveness and research orientation, thereby strengthening curriculum delivery and outcome-based education practices. Impact of Faculty Development Programs such as

- Enhanced faculty competency in emerging and core civil domains, enabling effective curriculum delivery aligned with industry and research trends.
- Exposure to advanced tools and laboratory practices resulted in enriched experiments and improved practical sessions.
- Training in modern pedagogical practices and OBE strengthened teaching–learning methodologies and assessment strategies.
- Improved research capability enhanced project guidance, publications, and interdisciplinary research activities.
- Industry-oriented FDPs strengthened industry–academia linkage and relevance of student projects.

F. Academic Calendar and Planning

The Academic Calendar at R. C. Patel Institute of Technology is prepared through a structured process aligned with OBE as shown in Figure 2.1.6.

Inputs & Data Sources: DBATU Academic Calendar, Holiday Circular, Controller of Examinations guidance, IQAC reviews, and departmental/event plans ensure synchronization with academic requirements.

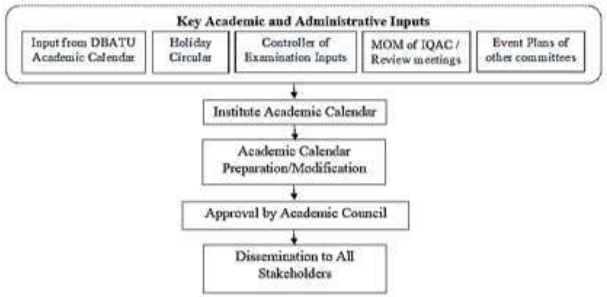


Figure 2.1.6: Academic Calendar Preparation Process Flow

- **Institute-Level Calendar:** An institute academic calendar is drafted to ensure uniformity, coherent planning, and timely execution of activities.
- **Approval and Finalization:** The draft is reviewed by the Director and finalized by the Academic Committee, ensuring alignment with academic objectives and POs.

The approved academic calendar is disseminated to all HOD and faculties to facilitate systematic planning of lectures, assessments, and co-/extra-curricular activities. The calendar outlines teaching days, TA schedules, examination schedules, holidays, workshops, seminars, and co-curricular activities.

Table 2.1.2 summarizes the planned and conducted academic activities for AY 2025–26 (Odd Semester) highlighting any deviations and the reasons for the same to ensure effective academic monitoring and implementation.

Table No.2.1.2: Academic Calendar Compliance and Deviations

(AY 2025-26, SEM–I)

AY 2025-26				Odd SEM	
Sr. No	**Activity / Event**	**Planned Date**	**Conducted Date**	**Deviation (if any)**	**Reason for Deviation / Action Taken**
1	Commencement of Classes	14/07/25	14/07/25	NA	
2	Term Test-I	15/9/25 -17/9/25	15/9/25 -17/9/25	NA	
3	Term Test-II	13/11/25 -15/11/25	15/11/25 -19/11/25	2 days Later	Syllabus completion to assess the intended course outcomes.
4	Project Monitoring- I	13/9/25	13/9/25	NA	
	Project Monitoring- II	11/10/25	11/10/25	NA	
	Project Monitoring- III	8/11/25	8/11/25	NA	
5	Presentations/ Group Discussion	8/9/25- 10/9/25	8/9/25- 10/9/25	NA	
6	Parent Meet	22/9/25	04/10/25	12 days Later	Rescheduled to ensure higher parent participation.
7	Mock Interview	25/10/25- 28/10/25	25/10/25- 28/10/25	NA	
8	Laboratory Completion	22/11/25	22/11/25	NA	
9	End of Classes	22/11/25	22/11/25	NA	
10	ESE (TH & PR) Conduction	2nd Week to Last Week of December	2nd Week to Last Week of December	NA	

Faculty prepares Teaching–Learning Plans aligned with the academic calendar, including weekly lecture plans, practical schedules, assignments and internal assessments. Implementation is monitored through periodic Departmental Academic Review meetings and necessary adjustments are made to ensure timely syllabus completion. This process ensures a uniform teaching schedule, timely conduct of assessments, and improved student performance with smooth execution of semester activities.

All academic activities, including classes, tests, labs, project monitoring, parents meet and examinations were executed as per planning. Structured project monitoring and assessments enhanced COs-POs attainment, practical skills, and student engagement, while stakeholder involvement and timely evaluation improved feedback and overall learning outcomes.

G. Assessment and Evaluation

The institute implements a structured Continuous Assessment (CA) system, as presented in Table 2.1.3, to systematically evaluate students' academic performance and measure the CO attainment.

Table No.2.1.3: Term Test Evaluation and Additional Component

Components	Description	Additional Component and Description
Term Tests (15)	TT-I = 30 Marks TT-II =30 Marks	Certification Course – 05 Marks per course Maximum 02 course certifications.

The Institute follows a several Teachers Assessment methods as shown in Table 2.1.4. TA-I (05 Marks) engages students in activity-based learning such as presentations, group discussions, Moodle quizzes, or virtual labs, enhancing conceptual understanding and communication skills.

Table No.2.1.4: Contribution of Assessment Methods to Attainment of POs and PSOs

Assessment Type	Outcome / Impact
Certification Course	Enhances PO1 (Engineering Knowledge); promotes PO12 (Lifelong Learning); improves analytical skills.
Presentation	Improves PO10 (Communication) & PO9 (Teamwork).
Moodle Quiz	Strengthens PO1 (Engineering Knowledge) & PO2 (Problem Analysis).
Group Discussion	Enhances PO9 (Teamwork) & PO8 (Ethics).
Virtual Lab	Improves PO1, PO2 and PSOs related to practical skills.
Mock Interview	Enhances PO10 (Communication), PO9 (Teamwork), and PO8 (Professional Ethics).
Innovative Component	Encourages PO3 (Design/Development), improves PO2 & PO5 (Problem-solving/Modern Tools), supports subject PSOs.
Skill Enhancement	Develops PO6–PO9, PO11, PO12 (Societal, Teamwork, Project Management, Lifelong Learning); real-world exposure.

TA-II builds professional readiness through mock interviews, TA-III encourages innovation via pre-approved creative tasks and TA-IV enhances skills through coding platforms and short-term internships, strengthening computational thinking and industry exposure. Aptitude Tests assess analytical, reasoning, and quantitative abilities through standardized tests for each semester.

H. Conduction of Laboratory Experiments

Laboratory experiments are a vital component of the Undergraduate Civil Engineering curriculum, providing students with essential hands-on experience to reinforce theoretical concepts and develop professional engineering skills. Well-structured experiments enable learners to gain practical proficiency in design analysis, material properties, ISI Standards, equipment handling skills, and modern techniques and tools.

- Continuous assessment through practical performance, post lab viva-voce, assignments which ensures effective outcome attainment.
- Along with conventional laboratories, the department integrates Virtual Laboratories to enhance experiential learning through simulation-based experiments, offering flexibility, repeated practice, and exposure to advanced systems beyond hardware limitations.
- Additionally, subject-specific innovative experiments promote creativity, design thinking, and application-oriented learning aligned with emerging industry trends and societal needs.
- Regular feedback and corrective measures strengthen conceptual clarity, practical competence, and overall student performance.

Overall, the Teachers Assessment framework ensures a balanced development of knowledge, innovation, communication, and professional skills, supporting CO attainment and reinforcing outcome-based education and continuous improvement.

I. Feedback Mechanism

Stakeholder's feedback is systematically analyzed and used to improve curriculum content, teaching methodologies, assessment strategies, laboratory practices and learning resources.

The feedback has led to curriculum enrichment, inclusion of industry-relevant topics, adoption of active learning methods, improved infrastructure and enhanced student support, thereby strengthening attainment of COs, POs and PSOs.

The department regularly collects structured feedback from key stakeholders to support continuous improvement. **Employer feedback** assesses graduate technical competence and industry readiness, **faculty feedback** reviews curriculum adequacy and teaching–learning effectiveness, **alumni feedback** evaluates curriculum relevance to careers, higher studies and **parent feedback** reflects student progress, discipline, and institutional support. The analysis of this feedback directly contributes to curriculum enhancement, improved delivery and better attainment of POs.

Collected feedback is analyzed by the Feedback Coordinator & all records and action-taken reports are documented and verified by IQAC.

J. Monitoring and Audit

The institute has established a comprehensive monitoring mechanism to ensure effective implementation of academic processes and continuous quality improvement. Table 2.1.5 outlines the frequency, scope, and outcomes of various internal and external monitoring practices aimed at strengthening teaching–learning processes and enhancing CO–PO attainment.

Table No.2.1.5: Internal Quality Assurance and Monitoring Activities

Monitoring Mechanism	Frequency	Scope / Activities	Outcome / Impact
Internal Academic Audits	Per Semester	Syllabus coverage, Teaching–Learning & Assessment Plans, CA/ESE records	Ensures academic plan adherence, Identifies gaps, corrective actions
Peer Reviews	Continuous per semester	Lecture & lab observations, project supervision, feedback on teaching- learning	Improves teaching- learning effectiveness, aligns with COs
IQAC-Led Monitoring	Three per year	Academic calendar, course delivery, CA/ESE oversight, project evaluation	Ensures teaching- learning quality & transparent assessment, Systematic improvement in CO–PO attainment
External Academic Audits	Once per Year	Audit by external experts on syllabus coverage, course files, assessment and attainment	Ensures impartial review, validates academic quality.

These processes review syllabus coverage, teaching plans, assessments, and project progress, resulting in improved course delivery, transparent evaluation, and enhanced faculty performance. The impact is evident in better CO–PO attainment, higher student engagement and continuous quality improvement.

K. Student Support and Mentoring

The Civil Department has a well-structured mechanism to identify and support students based on their learning abilities. The process shown in Figure 2.1.7 begins with continuous student feedback which is collected through multiple sources such as:

- Course Coordinator and Class Teacher observations
- Local Guardian (Mentor) interactions
- Performance in TT and TA activities.

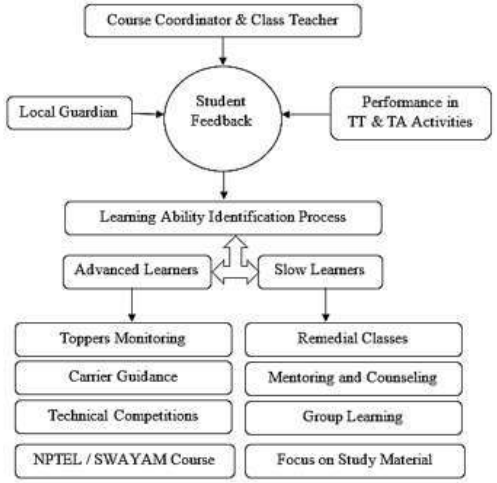


Figure 2.1.7: Learning Ability Identification and Student Support Mechanism

All these inputs help in assessing each student's comprehension level, academic progress, and learning challenges. Based on this assessment, students are broadly categorized into two groups:

- Slow Learners
- Advanced Learners

Students who consistently demonstrate higher academic performance, strong conceptual understanding, and active participation are identified as Advanced Learners. Students are identified based on strong academic performance, active participation, and faculty recommendations. They are supported through research projects, NPTEL/SWAYAM courses, certifications, technical competitions, and focused mentorship. These initiatives aim to promote research orientation, enhance technical and problem-solving skills, and prepare students for higher education and professional excellence, resulting in improved achievements, publications, and enhanced employability.

Students who require additional academic support or demonstrate average to slower conceptual clarity are identified as slow learners based on poor performance in internal assessments, low attendance or engagement, faculty and LG feedback. These students are supported through remedial classes for difficult subjects, one-to-one mentoring, peer and group learning mechanisms and simplified study materials with additional practice sessions.

The primary objectives are to bridge learning gaps, strengthen conceptual understanding, enhance confidence, and reduce failure or dropout rates. As a result, students show improved academic performance, better participation in learning activities, increased motivation, and enhanced course outcome attainment. Overall, this structured learning ability identification process ensures personalized, student-centric support, provides growth opportunities for advanced learners, timely assistance for slow learners, and leads to overall improvement in COs and POs.

L. Use of ICT and Quality of Classroom Teaching

The Civil Engineering Department effectively integrates ICT and digital tools to enhance the quality of teaching–learning as shown in Table 2.1.6. Faculty members adopt a blended teaching approach using multimedia, simulation platforms, online resources, and digital assessment tools.

Table No.2.1.6: Use of ICT and Digital Tools in Teaching Learning Process

Aspect	Description
Purpose	The department integrates ICT and digital tools to enhance teaching- learning quality.
Teaching Approach	Blended teaching using multimedia presentations, animations, smart boards, and digital resources.
Simulation & Lab Tools	Virtual lab, Department laboratory and field visit.

Aspect	Description
Online Learning Resources	NPTEL/SWAYAM videos, e-books, digital repositories
Digital Content Delivery Platforms	Google Classroom, MS Teams, Moodle for assignments, notes, announcements and communication.
Project & Publication Support	Plagiarism Checking & Paraphrase Tools.

ICT-based learning enhances the teaching–learning process by improving conceptual understanding through simulations and multimedia tools, increasing student engagement, providing 24×7 access to learning resources, enabling transparent digital assessments.

M. Industry Interaction and Exposure

The department ensures continuous industry interaction to enhance practical knowledge, professional skills, and employability of students.

- Organized industrial visits to provide students with real-time exposure to industrial environments, processes, and best practices.
- Conducted guest lectures, expert talks, and technical sessions delivered by professionals from industry and research organizations.
- Facilitated short-term and semester-long internships in reputed industries, startups, and research organizations to gain hands-on experience.
- Promoted industry-oriented projects, participation in Hackathons and technical activities to encourage problem-solving and innovation.
- Encouraged students to pursue industry-recognized certifications and skill-based training programs aligned with emerging technologies.

N. Research and Innovation Promotion

Students actively participate in national-level competitions such as Smart India Hackathons (SIH), which significantly enhance creativity, teamwork, design thinking, and problem-solving abilities, thereby contributing to POs attainment related to innovation, teamwork, and modern tool usage.

In addition, activities conducted through the Institution's Innovation Council (IIC) and Entrepreneurship Cell fosters an entrepreneurial mind-set by encouraging idea generation, start-up development, and innovation-driven projects. These initiatives strengthen POs related to entrepreneurship, leadership, and lifelong learning.

The department actively promotes research, innovation, and experiential learning through the structured institutional platforms such as CESA and IEI Student Chapter. These platforms provide students with opportunities for interdisciplinary collaboration, leadership development, and innovation-oriented engagement beyond the classroom. Through workshops, technical sessions, expert talks, project exhibitions, outreach activities, and research-focused initiatives, students are encouraged to explore emerging technologies and address real-world engineering challenges.

Active participation in these clubs enhances students' research aptitude, analytical thinking, and problem-solving skills, while also strengthening professional competencies such as teamwork, communication, ethical responsibility, and lifelong learning. The gained exposure supports the development of innovative project ideas, research publications, competitive participation, and community-oriented technological solutions.

Overall, the activities contribute significantly to the attainment of POs related to engineering knowledge, design and development of solutions, modern tool usage, teamwork, communication, and societal responsibility.

O. Quality Improvement Initiatives

The Civil Engineering Department implements well-defined quality improvement initiatives to strengthen the teaching–learning process and ensure sustained academic excellence. The department systematically reviews these initiatives through data-driven analysis and stakeholder feedback, aligning them with OBE principles.

Continuous monitoring of academic outcomes enables the department to enhance curriculum delivery, assessment methods, and the overall student learning experience.

The following section outlines the Key Quality Improvement Initiatives and their impact on the teaching-learning process.

COs–POs Attainment Analysis:

- Regular analysis of COs and POs attainment using direct and indirect assessment tools.
- Identification of learning gaps and weak outcome areas at course and program levels.
- This leads to improvement in teaching strategies, focused remedial actions, better assessment approaches, and enhanced student performance.

Benchmarking Practices:

- Comparison of curriculum structure, course content and laboratory practices with peer institutions.
- Adoption of best practices such as innovative teaching methods, modern tools and industry-relevant content.
- Ensures curriculum relevance, improves instructional quality and enhances student employability and practical competence.

Continuous Improvement through IQAC:

- Active participation in IQAC-led academic audits, feedback analysis, and quality reviews.
- Promotes structured academic planning, consistency in teaching–learning processes, accountability, and a culture of continuous quality enhancement.

Overall, these initiatives result in a more effective, student-centric teaching–learning environment, improved outcome attainment and quality assurance in the Civil engineering program.

2.2 Quality of Student Capstone Project (25) Total Marks 25.00

Institute Marks : 25.00

According to the curriculum, the Capstone Project is divided into two stages: Project Stage-I (Semester-VI) and Project Stage-II (Semester-VII). Table 2.2.1 outlines the activities to be completed in each stage as per the curriculum.

Table No.2.2.1: Project Stages and Activities

Project Stage	Activities / Description
Project Stage–I: [Sem-VI] Problem Identification & System Design	• Preparation of a concise abstract and detailed introduction covering the problem domain, objectives, scope, relevance, and a comprehensive literature review of existing systems. • Design of the proposed system detailing architecture, methodology, and required hardware implementation. • Development of a Stage–II implementation plan including selected tools and an execution timeline.
Project Stage–II: [Sem-VII] System Development & Evaluation	• Implementation of the proposed system using appropriate tools and platforms. • Testing, validation, and performance evaluation with comparative analysis. • Conclusion and future scope identification based on results. • Preparation and submission of a research paper/patent based on project outcomes.

The department of Civil Engineering follows the procedure as shown in Figure 2.2.1 for Identification of projects and allocation methodology to faculty members.

A. Identification of Projects and Allocation Methodology

The project development process at R. C. Patel Institute of Technology, Shirpur is systematically designed in line with the OBE framework to ensure effective planning, execution, and evaluation of student projects.

Head of the Department appoints a Project Coordinator to systematically manage, supervise, and monitor all project-related activities. Students are then required to form project groups and submit three proposed project topics along with concise abstracts for review, ensuring appropriate evaluation and approval before project initiation.

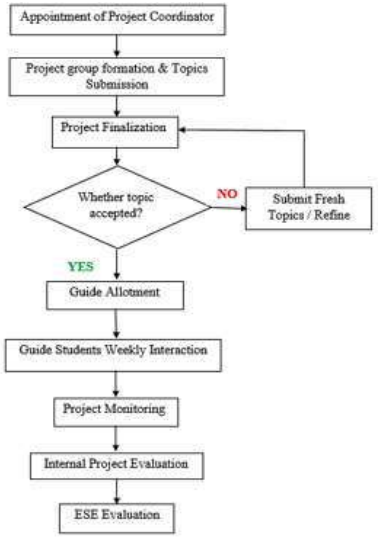


Figure 2.2.1: Process Flow for Project Topic Approval, Execution and Evaluation

- **Topic Finalization by Departmental Committee:** Proposed project topics are rigorously evaluated based on relevance, innovation, technical depth. Topics not meeting the criteria are refined and resubmitted.
- **Guide Allocation:** Department Head & Project Coordinator allocate faculty guides based on domain expertise, ensuring effective technical guidance, mentoring and outcome-oriented supervision.
- **Weekly Interaction and Monitoring:** Structured weekly meetings during scheduled project hours facilitate continuous progress monitoring, technical discussion and timely resolution of challenges.
- **Project Review and Internal Evaluation:** Periodic reviews during regular monitoring, presentations, and internal assessments are conducted to evaluate innovation, methodology, implementation quality and CO attainment.
- **Final Evaluation by External Examiner:** The completed project is assessed by an external expert using predefined rubrics, focusing on technical competence, originality, and overall outcome attainment, ensuring transparency and academic rigor.

B. Project Monitoring and Assessment

The project progress is systematically monitored through three monitoring stages. Each stage evaluates predefined activities such as documentation, literature review, requirement analysis, planning, implementation, and project development. Progress is assessed using clear parameters (Complete/Incomplete) to ensure timely execution, quality compliance, and readiness for subsequent project phases shown in Table 2.2.2.

Table No.2.2.2: Continuous Monitoring of Project Stage-I (Semester VI)

Monitoring Stage	Activities
Monitoring –I **(Project Initiation & Study)**	• Status of log book up to Monitoring–I • Introduction and problem definition with objectives • Literature review and analysis of existing systems

Monitoring Stage	Activities
Monitoring –II **(Design & Partial Implementation)**	• Status of Log Book up to the date of monitoring 2 • Methodology • Planning and Scheduling phase • Requirements Specification and lab resources • Implementation Part up to 30 % or 40 %
Monitoring –III **(Implementation, Testing & Documentation)**	• Status of Log Book up to the date of monitoring 2 • Testing phase • Implementation Plan for Project Stage-II and its sub-points • Experimental and field test results validation. • Submission of project Report

Each project is assessed through CA and graded based on project quality and consistent work progress. Table 2.2.3 presents the internal assessment rubrics for Project Stage-I (PS-I).

Table No.2.2.3: Continuous Assessment Rubrics for PS-I

Attendance	Logbook Maintenance	Literature survey	Depth of Understanding	Report	Total
05	05	05	05	05	25

Table No.2.2.4: ESE Assessment Rubrics for PS-I

Project Stage – I Selection	Literature/ Methodology	Testing/ Design	Result	Presentation	Total
05	05	05	05	05	25

Final Project demonstration and the report is evaluated by a panel of external examiners. ESE evaluation for Project Stage–I (Semester VI) is structured to assess multiple aspects of the project, as outlined in Table 2.2.4.

- Project stage–I is continued as Project stage–II in Semester VII, focusing on completing the remaining implementation as per the approved abstract shown in Table 2.2.5.
- Students plan and execute the project systematically to ensure completion within the semester timeline.

Table No.2.2.5: Continuous Monitoring of Project Stage-II (Semester VII)

Monitoring Stage	Activities
Monitoring –I	• Verification of log book up to Monitoring–I • Experimental progress up to 40%
Monitoring –II	• Verification of log book up to Monitoring–II • Results validation/ implementation.

Monitoring Stage	Activities
Monitoring –III	• Verification of log book up to Monitoring–III • Project completion & Publication Review • Submission of complete project report

- Project stage –II emphasizes design, fabrication, experimentation, testing, data analysis, and documentation. The CA and ESE Assessment Rubrics for Project Stage-II are shown in Table 2.2.6 & Table 2.2.7 respectively

Table No.2.2.6: Continuous Assessment Rubrics for PS-II

Attendance	Logbook Maintenance	Literature survey	Depth of Understanding	Report	Total
05	05	05	05	05	25

Table No.2.2.7: ESE Assessment Rubrics for PS-II

Depth of Understanding	Implementation	Testing	Report	Presentation	Total
05	05	05	05	05	25

- Each group maintains a project log book and submits a hard-bound project report at the end of Semester VII.
- Relevant domain knowledge beyond the core syllabus is applied for effective project implementation.

C. Capstone Project Timeline

A well-defined project timeline ensures systematic planning, timely execution and effective monitoring of Project Stage–I and Stage–II as elaborated in Table 2.2.8 and Table 2.2.9 respectively.

Table No.2.2.8: Timeline for Project Stage -I (Semester VI)

Sr. No.	Activity	Tentative Period
1	Project registration and submission of three probable topics with abstract	Third week of January
2	Scrutiny, topic finalization, and guide allocation by the Head of Department and project coordinator.	Last week of January
3	Introduction, literature review, and requirement analysis	Second week of February
4	Project planning, scheduling	Last week of February
5	Monitoring–I of Project Stage-I	First week of March
6	Conceptual Design and Methodology	Second week of March
7	Implementation plan for Project Stage-II	Third week of March
8	Monitoring–II of Project Stage-I	First week of April

Sr. No.	Activity	Tentative Period
9	Completion of Project Stage-I with report submission (as per guide approval)	Second week of April
10	Monitoring–III of Project Stage-I	First week of May

Table No.2.2.9: Timeline for Project Stage -II

Sr. No.	Activity	Tentative Period
1	System Implementation up to 40%.	Third Week of August
2	Monitoring–I of Project Stage-II	Second week of September
3	System Implementation up to 70%.	Third week of September
4	Demo of Project Stage-II (In front of departmental committee).	Second week of October
5	System Implementation up to 100%.	Last week of October
6.	Demo of Project Stage-II (In front of departmental committee).	First week of November
7	Completion of Project Stage-II along with the report in prescribed format by the approval of concerned guide	Third week of November

It facilitates structured progress from topic selection to implementation and evaluation, promotes optimal utilization of time and resources, enhances coordination between students and guides, and supports continuous assessment.

D. Domain-wise Categorization of Student Projects

Capstone Projects are designed to integrate theoretical knowledge with practical implementation, enabling students to solve real-world engineering problems. These projects promotes innovation, research aptitude, interdisciplinary learning and industry readiness. To ensure focused development and domain expertise, Capstone Projects are broadly categorized into the following domains:

- Environmental Engineering,
- Concrete Technology,
- Sustainable Materials,
- Structural Engineering,
- Transportation Engineering,
- Construction Management,
- Building Information Modelling (BIM),
- Smart Water Management,
- Water Resources Engineering,
- Water Supply Engineering

The following Table 2.2.10 presents the year-wise distribution of capstone projects across various technical domains along with their corresponding POs and PSOs mapping, demonstrating the department’s commitment towards OBE.

Table No.2.2.10: Domain-wise Categorization of Capstone Projects

Sr. No.	Project Areas	No. of Capstone projects			Mapping with POs	Mapping with PSOs
		25-26	24-25	23-24		
1	Environmental Engineering	2	3	1	PO1 to PO12	PSO 1, PSO 2
2	Concrete Technology / Sustainable Materials	5	4	5	PO1 to PO12	PSO 1, PSO 2
3	Structural Engineering	2	2	2	PO1 to PO12	PSO 1, PSO 2
4	Transportation Engineering	0	0	1	PO1 to PO12	PSO 1, PSO 2
5	Construction Management / BIM	0	1	1	PO1 to PO12	PSO 1, PSO 2
6	Smart Water Management / IoT	1	1	0	PO1 to PO12	PSO 1, PSO 2
7	Water Resources Engineering	1	1	0	PO1 to PO12	PSO 1, PSO 2
8	Water Supply Engineering	1	0	1	PO1 to PO12	PSO 1, PSO 2
Total		**12**	**12**	**11**		

Following Table 2.2.11 shows the mapping of sample Capstone projects for the Academic Year 2023-24 to 2025-26.

Table No.2.2.11: Sample Capstone projects Domain-wise POs, PSOs and SDGs Mapping

Academic Year	Project Name	Area of Specialization	Key Factors (Environment / Safety / Ethics / Cost)	Type of Project	POs and PSOs Mapping	Mapping to SDG
Domain Name: Concrete Technology / Sustainable Materials						
25-26	Partial Replacement of Cement with Marble Powder in M20 Concrete	Concrete Technology / Sustainable Materials	Reduced cement usage, cost reduction, sustainable waste utilization	PO1, PO2, PO4, PO7	PSO2	SDG 9, 12, 13

25-26	Sustainable Materials in Concrete Using Bagasse Ash	Concrete Technology / Sustainable Materials	Eco-friendly concrete, waste utilization, improved sustainability	PO1, PO2, PO4, PO7	PSO2	SDG 9, 12, 13
25-26	Concrete Mix Design for M40 Grade	Concrete Technology / Sustainable Materials	Optimized strength, cost-effective high-performance concrete	PO1, PO2, PO4	PSO2	SDG 9
25-26	Comparative Study of Concrete with Natural Admixtures	Concrete Technology / Sustainable Materials	Eco-friendly concrete, improved durability, green materials	PO1, PO2, PO4, PO7	PSO2	SDG 12, 13
25-26	Impact of Banana Stem Fiber on Concrete Properties	Concrete Technology / Sustainable Materials	Improved tensile strength, waste utilization, crack control	PO1, PO2, PO4, PO7	PSO2	SDG 12, 13
24-25	Sustainable Materials in Concrete with Partial Replacement of Cement Bagasse Ash	Concrete Technology / Sustainable Materials	Environment: Utilization of agricultural waste, reduces CO_2 emissions.Safety: Maintains structural performance.Ethics: Encourages green construction.Cost: Low-cost binder replacement.Type: Experimental Research.	PO1, PO2, PO4, PO7, PO12	PSO1, PSO2	SDG 9, SDG 11, SDG 12:
24-25	Partial Replacement of Cement with Marble Powder in M20 Grade of Concrete	Concrete Technology / Sustainable Materials	Environment: Reuse of marble waste.Safety: Comparable mechanical strength.Ethics: Industrial waste management.Cost: Reduces cement consumption.Type: Experimental Study.	PO1, PO2, PO4, PO7, PO12	PSO1, PSO2	SDG 9, SDG 11, SDG 12, SDG 13

24-25	Impact of Banana Stem Fibre on Concrete Properties	Concrete Technology / Sustainable Materials	Environment: Utilization of agricultural by-product.Safety: Increases crack resistance.Ethics: Promotes sustainability.Cost: Reduces synthetic fibre cost.Type: Experimental Study.	PO1, PO2, PO4, PO7, PO12	PSO1, PSO2	SDG 9, SDG 11, SDG 12
23-24	Experimental Study on Partial Replacement of Cement with Glass Waste Powder & Admixture	Concrete Technology / Sustainable Materials	Environment: Reduces CO_2 emissions by replacing cement.Safety: Improves mix durability.Ethics: Encourages waste utilization.Cost: Economical and sustainable.Type: Experimental Research.	PO1, PO2, PO4, PO5, PO7, PO12	PSO1, PSO2	SDG 9, SDG 11, SDG 12, SDG 13
23-24	Eco Mix: Sustainable Concrete Solution	Concrete Technology / Sustainable Materials	Environment: Eco-friendly mix with reduced cement.Safety: Enhanced durability.Ethics: Promotes sustainable building.Cost: Reduces construction cost.Type: Product & Research.	PO1, PO2, PO4, PO7, PO11, PO12	PSO1, PSO2	SDG 9, SDG 11, SDG 12, SDG 13

23-24	Impact of Advanced Fiber Reinforcement on the Mechanical Properties of Ferrocement	Concrete Technology / Sustainable Materials	Environment: Long-lasting material. Safety: Increases load capacity. Ethics: Innovation for public safety. Cost: Long-term cost saving. Type: Experimental Research.	PO1, PO2, PO4, PO5, PO7	PSO1, PSO2	SDG 9, SDG 11
23-24	Enhancing Durability of Recycled Aggregate Concrete Utilizing Mineral Admixture	Concrete Technology / Sustainable Materials	Environment: Encourages aggregate recycling. Safety: Improves long-term performance. Ethics: Reduces natural resource consumption. Cost: Cost-effective reuse of materials. Type: Experimental Research.	PO1, PO2, PO4, PO7, PO12	PSO1, PSO2	SDG 9, SDG 11, SDG 12
24-25	A Comparative Study of Concrete Strength with Natural Admixtures: A Sustainable Perspective	Sustainable Materials	Environment: Natural admixtures reduce cement demand. Safety: Comparable structural strength. Ethics: Promotes eco-alternatives. Cost: Economical material sourcing. Type: Comparative Research.	PO1, PO2, PO4, PO7, PO12	PSO1, PSO2	SDG 9, SDG 11, SDG 12, SDG 13

23-24	Enhancing Durability of Recycled Aggregate Concrete Utilizing Mineral Admixture	Concrete Technology / Sustainable Materials	Environment: Reduces construction waste.Safety: Durable structure quality.Ethics: Circular economy principle.Cost: Economical concrete.Type: Experimental Research.	PO1, PO2, PO4, PO7, PO11	PSO1, PSO2	SDG 9, SDG 11, SDG 12
Domain Name: Structural Engineering						
25-26	Design and Structural Analysis of High-Rise Building	Structural Engineering	Safe and economical structural design, earthquake-resistant design	PO1, PO2, PO3	PSO3	SDG 9, 11
25-26	Planning, Analysis and Structural Design of Hospital Building	Structural Engineering	Safe healthcare infrastructure, disaster-resistant building	PO1, PO2, PO3, PO6	PSO3	SDG 3, 9, 11
24-25	Concrete Mix Design for M40 Grade	Structural Engineering	Environment: Resource optimization in mix proportioning.Safety: Ensures strength and durability.Ethics: Follows IS standards.Cost: Optimized mix reduces material wastage.Type: Application & Research.	PO1, PO2, PO3, PO4, PO8	PSO1	SDG 9, SDG 11, SDG 12

24-25	Planning Analysis and Structural Design of a Hospital Building	Structural Engineering	Environment: Energy-efficient planning.Safety: Hospital design resilience.Ethics: Public safety priority.Cost: Economical design alternatives.Type: Application & Design Project.	PO1, PO2, PO3, PO5, PO6, PO8	PSO1	SDG 3, SDG 9, SDG 11
23-24	Analysis & Design of Earthquake Resistant Multistoreyed Residential Building	Structural Engineering	Environment: Safe urban design.Safety: Life protection in seismic zones.Ethics: Public safety commitment.Cost: Optimized and economical design.Type: Application & Design.	PO1, PO2, PO3, PO5, PO6, PO8	PSO1, PSO3	SDG 9, SDG 11, SDG 13
23-24	Comparative Study of IS 10262:2009 Vs IS 10262:2019 with High Grade Concrete	Structural Engineering	Environment: Efficient use of resources.Safety: Ensures design compliance.Ethics: Follows updated standards.Cost: Cost optimization through mix design.Type: Comparative Research / Review.	PO1, PO2, PO4, PO8, PO12	PSO1	SDG 9, SDG 11, SDG 12
Domain Name: Environmental Engineering						
25-26	Wastewater Treatment using Water Hyacinth Plant	Environmental Engineering	Low-cost water purification, improved water quality, CPCB indexing	PO1, PO2, PO6, PO7	PSO1	SDG 6, 3, 13

25-26	Innovative Use of C&D Waste for River Erosion Control	Environmental Engineering	River protection, waste reuse, habitat restoration	PO1, PO2, PO4, PO7	PSO1	SDG 12, 13, 15
25-26	Assessment of Water Quality Stability and Leakages in Shirpur WDS	Water Supply Engineering	Reduced losses, improved water quality, efficient management	PO1, PO2, PO4, PO7	PSO1	SDG 6, 11
24-25	Assessment of Water Quality Stability and Impact of Leakages in Shirpur Water Distribution System	Environmental Engineering	Environment: Water quality assessment and conservation.Safety: Ensures potable supply.Ethics: Promotes community health.Cost: Low-cost maintenance model.Type: Field Research.	PO1, PO2, PO4, PO6, PO7	PSO2	SDG 6, SDG 11, SDG 13
24-25	Innovative Applications of C&D Waste for River Erosion Control and Habitat Restoration	Environmental Engineering	Environment: Restores ecosystem, reduces waste.Safety: Prevents bank erosion.Ethics: Environmental stewardship.Cost: Low-cost restoration method.Type: Research & Application.	PO2, PO3, PO4, PO6, PO7, PO12	PSO2	SDG 6, SDG 13, SDG 15

24-25	Experimental Investigation on Industrial Waste Water by Water Hyacinth Plant to Improve Its Quality for Drinking Purpose	Environmental Engineering	Environment: Phytoremediation using natural plants.Safety: Improves water quality.Ethics: Eco-friendly waste treatment.Cost: Low-cost purification system.Type: Experimental Research.	PO1, PO2, PO4, PO6, PO7	PSO2	SDG 6, SDG 13, SDG 15
23-24	The potential use of Waste Water Treatment Plants Waste as sustainable material in construction Industry	Environmental Engineering	Environment: Promotes reuse of waste, reduces pollution.Safety: Reduces landfill hazards.Ethics: Encourages eco-friendly practices.Cost: Low-cost substitute material.Type: Research & Application.	PO1, PO2, PO3, PO6, PO7, PO10	PSO1, PSO2	SDG 9, SDG 11, SDG 12,
23-24	Study of Portable Water Supply in Rural Area Village Bhorkheda	Environmental Engineering	Environment: Water conservation and management.Safety: Ensures potable water.Ethics: Social welfare and equality.Cost: Low-cost rural model.Type: Field Research & Application.	PO1, PO2, PO3, PO6, PO7, PO9	PSO2, PSO3	SDG 6, SDG 11
Domain Name: Water Resources Engineering						
25-26	Performance Assessment of Urban Drainage System in Shirpur City	Water Resources Engineering	Improved stormwater management, flood mitigation, sustainable drainage planning	PO1, PO2, PO3, PO7	PSO1	SDG 6, 11

24-25	Performance Assessment of the Urban Drainage System in Shirpur City – Challenges and Solutions	Water Resources Engineering	Environment: Safety:.Ethics: Cost-effective design improvement.Type : Field Research & Application.	PO2, PO3, PO4, PO6, PO7	PSO2, PSO3	SDG 6, SDG 11, SDG 13
Domain Name: Smart Water Management / IoT						
25-26	IoT Based Water Network System	Smart Water Management / IoT	Reduced water loss, real-time monitoring, smart infrastructure	PO1, PO3, PO5, PO12	PSO1	SDG 6, 9, 11
24-25	IoT Based Water Network System	Smart Water Management / IoT	Environment: Smart monitoring reduces water loss.Safety: Ensures supply reliability.Ethics: Transparency in resource management.Cost: Low maintenance automation.Type: Application / Technological Innovation.	PO2, PO3, PO5, PO6, PO7, PO11	PSO2, PSO3	SDG 6, SDG 9, SDG 11
Domain Name: Construction Management / BIM						
2024-25	Design of High-Rise Building Using BIM Software	Construction Management / BIM	Environment: Minimizes material wastage.Safety: Accurate design analysis.Ethics: Transparent workflow.Cost: Reduces rework and cost.Type: Application / Digital Design.	PO3, PO5, PO7, PO10, PO11	PSO3	SDG 9, SDG 11, SDG 12

2023-24	Planning, Designing & Sustaining Using BIM	Construction Management / BIM	Environment: Reduces material wastage.Safety: Improves design accuracy.Ethics: Ensures data transparency.Cost: Reduces project cost.Type: Application & Review.	PO3, PO5, PO7, PO10, PO11	PSO3	SDG 9, SDG 11, SDG 12
Domain Name: Transportation Engineering						
2023-24	Efficient Intersection Management : A Traffic Light Free Approach for Karwand Naka	Transportation Engineering	Environment: Reduces emissions.Safety: Improves traffic flow.Ethics: Public convenience focus.Cost: Low-cost solution.Type: Design & Application Study.	PO2, PO3, PO5, PO6, PO7	PSO3	SDG 9, SDG 11, SDG 13
Domain Name: Water Supply Engineering						
2025-26	Assessment of Water Quality Stability and Leakages in Shirpur	Water Supply Engineering	Reduced losses, improved water quality, efficient management	PO1, PO2, PO4, PO7	PSO1	SDG 6, 11

2.3 Internship/Industrial Training (10) Total Marks 10.00

Institute Marks : 10.00

Internship and Industrial Training provide Civil engineering students with practical industry exposure, enabling them to apply theoretical knowledge to real-world engineering problems and understand professional practices and emerging technologies. These programs enhance technical skills, problem-solving ability, teamwork, and industry readiness, thereby improving employability and contributing effectively to Program Outcome attainment.

A. Process of Internship/ Industrial Training for Students:

The internship process at our institute is designed to ensure a smooth and systematic placement and training experience for students. Figure 2.3.1 presents the detailed steps involved in the internship process.

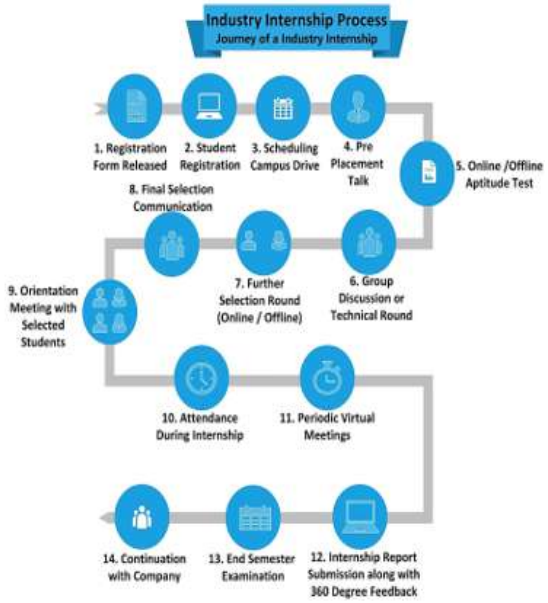


Figure 2.3.1: Flowchart of Industry Internship Process

Step 1: Registration Form Release: The Training and Placement (T&P) Department floats the internship registration form based on the eligibility criteria provided by the recruiting company. This form contains all necessary details regarding eligibility and requirements.

Step 2: Student Registration: Students who meet the eligibility criteria must register themselves by submitting the complete registration form within the stipulated deadline communicated by the T&P Department.

Step 3: Scheduling of Campus Drive: The campus drive date is finalized through discussions and coordination between the T&P Department and the company officials.

Step 4: Pre-Placement Talk: The Company conducts a pre-placement talk where it introduces the working domain, organizational culture, promotion policies, bond or service agreement terms, internship or training duration, stipend details, and other relevant information to the students.

Step 5: Aptitude Test Round: Most companies begin the selection process with an aptitude test to evaluate students' problem- solving skills, logical reasoning, and quantitative aptitude.

Step 6: Group Discussion (GD) or Technical Round: Students who clear the aptitude test are shortlisted for the next round, which may be either a group discussion or a technical interview, depending on the company's recruitment process.

Step 7: Further Selection Rounds: Based on the availability of technical experts or panel members, the company decides whether subsequent rounds will be conducted in an online or offline mode.

Step 8: Final Selection Communication: After completion of all rounds, the company sends the final selection list to the Training & Placement Officer (TPO), who then officially communicates the results to the selected students.

Step 9: Orientation Meeting for Selected Students: Upon receiving the final selection list, the T&P Department conducts a meeting with the selected students to provide important instructions regarding the internship start and end dates, attendance policies, and other guidelines.

Step 10: Attendance during Internship: Students undergoing the internship are permitted to attend their regular college examinations scheduled during the internship period without any hindrance.

Step 11: Periodic Virtual Meetings: The T&P Department organizes monthly virtual meetings with the students and their assigned mentors or trainers to discuss progress, address concerns, and ensure the smooth conduct of the internship. These meetings are scheduled based on the availability of mentors/trainers.

Step 12: Internship Report Submission: At the end of the internship, students are required to submit a comprehensive internship report in the prescribed format provided by the institute.

Step 13: End Semester Examination (ESE): Finally, after the completion of the internship, all students must appear for the End Semester Examination (ESE) as per the academic schedule.

Step 14: Continuation of Students: After the ESE, students whose performance is good as per Company officials they can resume their duty as per said timeline given by company officials.

B. Mapping of Internship/ Industrial Training with POs and PSOs:

The Table 2.3.1 summarizes the details of student internships, highlighting the skills gained and their relevance to POs and PSOs.

Table No.2.3.1: Summary of Student Internship, Skill Development and POs–PSOs

Year 2024-25					
Company Name	**Students Benefitted**	**Duration**	**Company Domain**	**Skill Gained**	**Relevance to POs and PSOs**
Hiliks Technologies Ltd.	7	3 to 5 Months	Construction Management and Structure Engineering	Construction and Supervision, Civil Engineering Software, GIS Drafting Software	PO1, PO2, PO4, PO5, PSO1, PSO2
Adiconstro Infrastructure	1	3 to 5 Months	Structure Engineering	Construction and Supervision	PO3, PO4, PO6, PSO1, PSO2
Quantum Industries	6	3 to 5 Months	Construction Management and Structure Engineering	Construction and Supervision	PO3, PO4, PO6, PSO1, PSO2
Indovance Pvt. Ltd.	1	3 to 5 Months	Construction Management and Structure Engineering	Civil Engineering Software	PO3, PO4, PO6, PSO1, PSO2

Metaroll	2	3 to 5 Months	Construction Management and Structure Engineering	Civil Engineering Marketing	PO3, PO4, PO6, PSO1, PSO2
Probian Tech Pvt. Ltd.	2	3 to 5 Months	Construction Management and Structure Engineering	Civil Engineering Software	PO3, PO4, PO6, PSO1, PSO2
Sayeesha Infrastructure	2	3 to 5 Months	Construction Management, Structure Engineering	Construction and Supervision	PO3, PO4, PO6, PSO1, PSO2
Year 2023-24					
Company Name	**Students Benefitted**	**Duration**	**Company Domain**	**Skill Gained**	**Relevance to POs & PSOs**
ISRO, Technician Apprentice	1	3 to 5 Months	Construction Management	Construction and Supervision	PO3, PO4, PO6, PSO1, PSO2
Kokan Railway	1	3 to 5 Months	Structure Engineering	Construction and Supervision	PO3, PO4, PO6, PSO1, PSO2
Grow Steel Tech, WFH	1	3 to 5 Months	Structure Engineering	Civil Engineering Software	PO3, PO4, PO6, PSO1, PSO2
Hiliks Technology	5	3 to 5 Months	Construction Management and Structure Engineering	Civil Engineering Software	PO3, PO4, PO6, PSO1, PSO2
Engconsulting, Dhule	4	3 to 5 Months	Construction Management and Structure Engineering	Civil Engineering Software	PO3, PO4, PO6, PSO1, PSO2
MDP Contractors	2	3 to 5 Months	Construction Management and Structure Engineering	Construction and Supervision	PO3, PO4, PO6, PSO1, PSO2
Ekam Venture	1	3 to 5 Months	Construction Management, Structure Engineering	Construction and Supervision	PO3, PO4, PO6, PSO1, PSO2

Capital Via, Indore	1	3 to 5 Months	Construction Management, Structure Engineering	Civil Engineering Marketing	PO3, PO4, PO6, PSO1, PSO2
Metaroll	4	3 to 5 Months	Construction Management, Structure Engineering	Civil Engineering Marketing	PO3, PO4, PO6, PSO1, PSO2
Year 2023-24					
Company Name	**Students Benefitted**	**Duration**	**Company Domain**	**Skill Gained**	**Relevance to POs & PSOs**
Tata Consultancy Services	2	3 to 5 Months	Management	Programming Software	PO3, PO4, PO6, PSO1, PSO2
Corbello Construction	1	3 to 5 Months	Environmental, Structure	Construction and Supervision	PO3, PO4, PO6, PSO1, PSO2
Finulent, Mumbai	1	3 to 5 Months	Structure	Design on Civil Engineering Software	PO3, PO4, PO6, PSO1, PSO2
Ekam Venture	5	3 to 5 Months	Construction Management, Structure Engineering	Construction and Supervision	PO3, PO4, PO6, PSO1, PSO2
Green Design	2	3 to 5 Months	Construction Management, Structure Engineering	Design on Civil Engineering Software	PO3, PO4, PO6, PSO1, PSO2
Vilas Javdekar	8	3 to 5 Months	Construction Management, Structure Engineering	Civil Engineering Marketing	PO3, PO4, PO6, PSO1, PSO2
360 Realtors	1	3 to 5 Months	Construction Management, Structure Engineering	Civil Engineering Marketing	PO3, PO4, PO6, PSO1, PS

C. Feedback:

A systematic mechanism is implemented to monitor, evaluate, and document student learning outcomes during industrial training. Weekly progress and learning are recorded through a weekly log record, while discipline and internship duration compliance are ensured via an industry-authenticated Attendance Sheet. The Industry Supervisor Evaluation Form provides an objective assessment of professional conduct, technical skills, communication, and work performance. Further, the Student Feedback Form captures reflections on skill development, practical application of theory, and career readiness, supporting continuous improvement and outcome as shown in Table 2.3.2.

Table No.2.3.2: Industrial Training Monitoring and Outcome Assessment Mechanism

Document Used	Nature of Data Collected	Parameters Analyzed	Method of Analysis	Outcome
Weekly log record	Weekly tasks, activities performed, key learning's,	Level of learning, practical exposure, skill development	Compare tasks assigned vs. tasks completed and learning outcomes achieved	Measures attainment of practical and technical skills
Attendance Sheet	Daily presence, holidays, absences	Regularity, discipline,	Calculate attendance percentage and identify irregular students	Ensures compliance with internship duration and participation
Supervisor Evaluation Form	Ratings on dependability, teamwork, initiative, technical skills, communication, professionalism	Work performance employability skills	Convert ratings into scores and classify performance (Excellent/Good/Satisfactory/ Needs Improvement)	Used to judge professional competency and industry readiness
Student Feedback Form	Self-assessment on skills, learning, career relevance, satisfaction	Student perception of learning and relevance to curriculum	Analyze responses to identify strengths, weaknesses, and improvement areas	Supports continuous improvement and curriculum relevance
Overall Internship Record	Diary, attendance, evaluation, feedback	Overall effectiveness of internship	Correlate supervisor ratings with attendance and student feedback	Helps validate internship outcomes and quality assurance

2.4 Seminar and Mini/Micro Projects (10) Total Marks 10.00

Institute Marks : 10.00

To enhance experiential learning and practical application of theoretical concepts, Semester Projects are introduced in Semesters III, IV, and V. These projects strengthen students' technical skills, problem-solving ability, teamwork, and presentation skills, while fostering design thinking and implementation capabilities. Each project concludes with a Semester Project Report submitted as part of requirements, following a standardized departmental format to ensure academic rigor and uniformity.

A. Identification of Projects and Guide Allocation

The project development process at the Institute follows the OBE framework and is implemented in the same structured manner as the capstone project.

The Head of the Department appoints a Project Coordinator to oversee planning, execution, and monitoring. Students form project groups and submit multiple project proposals with brief abstracts, which are evaluated based on relevance, innovation, technical depth, and feasibility. Approved topics proceed for implementation, while others are refined and resubmitted.

B. Process for Monitoring and Evaluation

Weekly meetings are conducted between project groups and their respective guides during scheduled project hours to review progress and ensure systematic documentation through a Project Log Book maintained from project initiation to completion.

In addition, the department organizes three formal monitoring reviews each semester, which are evaluated by a faculty panel appointed by the Head of the Department and the Project Coordinator to ensure effective tracking and academic rigor.

Table No.2.4.1: Internal Continuous Assessment of Semester Project-I, II and III

Attendance	Logbook Maintenance	Literature survey	Depth of Understanding	Report	Total
05	05	05	05	05	25

Each project is evaluated according to their project quality and work done regularly. Table 2.4.1 shows rubrics for Continuous Assessment for all Semester Projects.

- Reviews cover key stages such as problem definition, literature survey, requirement analysis, design, and feasibility.
- Each group submits a Project Report at the end of the semester in the prescribed format, verified by the project guide.
- CA is carried out by the Departmental Committee including the project guide based on defined rubrics.
- The working prototype demonstration, report and final viva are evaluated by the guide and panel of examiners using a structured project grading sheet as shown in Table 2.4.2.

Table No.2.4.2: ESE Evaluation of Semester Project- I, II and III

Project Stage Selection	Design / Simulation / Logic	Testing and Evaluation	Result	Presentation	Total
05	05	05	05	05	25

C. Domain-wise Categorization of Semester Project

All semester projects are a key component of Outcome-Based Education, enabling students to apply core engineering knowledge (PO1) and perform effective requirement analysis and problem definition (PO2) for real-world applications. Through structured project work, students develop skills in Environmental Engineering, Concrete Technology / Sustainable Materials, Structural Engineering, Transportation Engineering, Construction Management, Smart Water Management, Water Resources Engineering, Environmental Engineering (PO4).

Effective use of lab tools and insitu testing (PO5) is reinforced, while attention to social, environmental, and sustainability aspects (PO6, PO7) ensures responsible engineering practice. Students are trained to uphold safety, ethics (PO8), collaborate effectively in teams (PO9), and prepare thorough documentation, presentations, and oral reports (PO10).Project management, cost analysis, and resource planning (PO11) are also emphasized. Finally, the projects encourage lifelong learning and adaptation to new technologies (PO12).

The following Table 2.4.3, Table 2.4.4 & Table 2.4.5 represents year-wise distribution of Semester Project-I, II and III respectively.

Table No.2.4.3: Domain-wise Categorization of Semester Project–I and POs–PSOs Mapping

Sr. No.	Project Areas	No. of Semester Projects 2025-26	No.of Semester Projects 2024-25	No.of Semester Projects 2023-24	Mapping with POs	Mapping with PSOs
1	Concrete Technology & Building Materials	8	5	3	PO1 to PO12	PSO 1,PSO 2
2	Structural Engineering	0	1	1	PO1 to PO12	PSO 1,PSO 2
3	Water Resources Engineering	1	0	2	PO1 to PO12	PSO 1,PSO 2
4	Geotechnical Engineering	1	0	1	PO1 to PO12	PSO 1,PSO 2
5	Environmental Engineering	0	2	0	PO1 to PO12	PSO 1,PSO 2
6	Transportation Engineering	1	1	1	PO1 to PO12	PSO 1,PSO 2
7	Renewable Energy	0	0	1	PO1 to PO12	PSO 1,PSO 2
8	Remote Sensing, GIS & Surveying	2	0	0	PO1 to PO12	PSO 1,PSO 2
9	Hydraulic Structures	0	1	1	PO1 to PO12	PSO 1,PSO 2
10	Urban & Environmental Engineering	0	1	0	PO1 to PO12	PSO 1,PSO 2
	Total	**13**	**11**	**10**		

Project management, cost analysis, and resource planning (PO11) are also emphasized. Finally, the projects encourage lifelong learning and adaptation to new technologies (PO12).

Table No.2.4.4: Domain-wise Categorization of Semester Project–II and PO–PSO Mapping

Sl. No.	Project Areas	No. of Semester projects			Mapping with POs	Mapping with PSOs
		2025-26	2024-25	2023-24		
1	Construction Technology	4	2	2	PO1 to PO12	PSO 1, PSO 2
2	Renewable Energy	0	0	1	PO1 to PO12	PSO 1, PSO 2
3	Transportation Engineering/ Sustainable Pavements	0	0	1	PO1 to PO12	PSO 1, PSO 2
4	Hydraulic Structures	1	1	2	PO1 to PO12	PSO 1, PSO 2
5	Construction Management	0	1	1	PO1 to PO12	PSO 1, PSO 2
6	Structural Engineering	1	1	1	PO1 to PO12	PSO 1, PSO 2
7	Urban Planning	0	2	2	PO1 to PO12	PSO 1, PSO 2
8	Geotechnical & Surveying Engineering	3	1	0	PO1 to PO12	PSO 1, PSO 2
9	Water Resources / GIS	5	2	0	PO1 to PO12	PSO 1, PSO 2
Total		**14**	**10**	**10**		

Table No.2.4.5: Domain-wise Categorization of Semester Project–III and PO–PSO Mapping

Sl. No.	Project Areas	No. of Semester projects			Mapping with POs	Mapping with PSOs
		2025-26	2024-25	2023-24		
1	Environmental / Water Resources Engineering/ Environmental Sustainability	2	1	4	PO1 to PO12	PSO 1, PSO 2
2	Construction Materials/ Sustainable Materials	1	2	2	PO1 to PO12	PSO 1, PSO 2

3	Construction Technology	0	0	1	PO1 to PO12	PSO 1, PSO 2
4	Renewable Energy	0	0	1	PO1 to PO12	PSO 1, PSO 2
5	Transportation Engineering/ Sustainable Pavements	1	1	2	PO1 to PO12	PSO 1, PSO 2
6	Hydraulic Structures	0	0	1	PO1 to PO12	PSO 1, PSO 2
7	Construction Management	0	0	1	PO1 to PO12	PSO 1, PSO 2
8	Structural Engineering	1	2	0	PO1 to PO12	PSO 1, PSO 2
9	Geotechnical Engineering	1	1	0	PO1 to PO12	PSO 1, PSO 2
10	Urban & Rural Planning/	1	1	0	PO1 to PO12	PSO 1, PSO 2
11	Structural Health Monitoring	3	0	0	PO1 to PO12	PSO 1, PSO 2
Total		**10**	**09**	**12**		

Through these domain-specific experiences, students strengthen PSO-1 by applying core civil engineering knowledge in planning, analysis, design, and execution of infrastructure systems using modern engineering tools. PSO-2 is enhanced through the development of professional competencies related to construction practices, project management, sustainable design, quality control, and real-time problem solving in civil engineering applications. Overall, semester projects ensure comprehensive POs–PSOs attainment, practical competence, and preparedness for higher studies, advanced projects, or professional engineering practice.

The projects under various domain are aimed at providing students with practical exposure to real-world problem solving using modern civil engineering tools and technologies. Through these projects, students effectively apply core engineering knowledge, analytical skills, and design principles, leading to the attainment of relevant POs and PSOs. Consideration of safety, ethical responsibility, environmental impact, and cost effectiveness ensures socially responsible engineering solutions. Table 2.4.6 shows project aligned with appropriate Sustainable Development Goals (SDGs), demonstrating their relevance to societal needs and sustainable development in line with the OBE.

Table No.2.4.6: Sample Capstone projects Domain-wise PO, PSO and SDG Mapping

Year	Project Name	Guide Name	Domain	Key Factors (Environment / Safety / Ethics / Cost)	Type of Project	POs & PSOs Mapping	Mapping to SDG
23-24	Case Study on Ready Mix Concrete Plant	R D Patil	Concrete Technology	Environment, Cost	Case Study	PO1, PO5, PO7, PSO3	SDG 9, SDG 12

23-24	Various Types Of Curing	G V Tapkire	Concrete Technology	Environment, Cost	Experimental Study	PO1, PO4, PO5, PSO3	SDG 9
24-25	Cement mortar properties with bagasse ash and crush sand	Dr. H S Patil	Concrete Technology	Environment, Safety: Ethics, Cost	Experimental	PO4, PO7, PO11, PSO3	SDG 12
24-25	Study and analysis of concrete ingredients and mineral admixtures	Dr. H R Kumavat	Concrete Technology	Environment, Safety: Ethics, Cost	Experimental	PO1, PO4, PO5, PSO3	SDG 12
25-26	Impact of Curing Methods on Quality of Concrete	Prof. G V Tapkire	Concrete Technology	Environment	Experimental	PO1, PO4, PO5, PSO3	SDG 9
25-26	Effect of Wheat Straw as Partial Sand Replacement	Dr. H S Patil	Concrete Technology	Environment, Cost	Experimental	PO4, PO7, PO11, PSO3	SDG 12
24-25	Study of advanced construction technique	Prof. G V Tapkire	Construction Engineering	Safety, Ethics	Study	PO1, PO5, PO10, PSO3	SDG 9
24-25	Power generation using Speed Breaker	Prof. J M Joshi	Environmental Engineering	Safety, Ethics, Cost	Prototype	PO3, PO5, PO12, PSO1	SDG 7
24-25	Water testing analysis	Prof. P S Patil	Environmental Engineering	Cost	Laboratory Analysis	PO1, PO6, PO8, PSO1	SDG 6
23-24	Parametric Design and Optimization of Tesla Valve	Y N Sonawane	Fluid Mechanics	Safety, Ethics, Cost	Simulation & Design	PO2, PO3, PO5, PSO2	SDG 9

23-24	Study on Patterns of Geogrids and Tests on Soil	R D Patil	Geotechnical Engineering	EnvironmentCost	Experimental	PO1, PO4, PO5, PSO2	SDG 9
25-26	Soil Testing in Different Regions of Shirpur	Prof. J M Joshi	Geotechnical Engineering	Environment,Safety: Ethics, Cost	Experimental	PO1, PO4, PO5, PSO2	SDG 9
24-25	Design of energy dissipator by pervious concrete	Prof. G V Tapkire	Hydraulic Engineering	EnvironmentCost	Design	PO3, PO4, PO7, PSO1	SDG 6
23-24	Floating Solar Panel over the Canal at Shirpur	G V Tapkire	Renewable Energy	EnvironmentCost	Design & Feasibility	PO3, PO7, PO12, PSO1	SDG 7, SDG 13
25-26	Monitoring River Channel Dynamics Using RS & GIS	Dr. H R Kumavat	RS & GIS	EnvironmentEthics,	Analytical	PO2, PO5, PO7, PSO1	SDG 13
23-24	Case Study on Tensegrity Structure	C J Chitte	Structural Engineering	Environment Cost	Case Study	PO1, PO2, PO4, PSO2	SDG 9
24-25	Retrofitting and rehabilitation of RCC Structures	Dr. M N Patil	Structural Engineering	Environment, Safety: Cost	Case Study	PO1, PO3, PO6, PSO2	SDG 11
25-26	Profile Levelling & Cross Sectioning using Advanced Techniques	Prof. T S Bhamare	Surveying	Environment	Practical Study	PO1, PO5, PO10, PSO2	SDG 9
23-24	Green Building	J M Joshi	Sustainable Materials	EnvironmentCost	Design & Study	PO3, PO7, PO10, PSO1	SDG 11, SDG 12

23-24	Low Cost Building Material	J M Joshi	Sustainable Materials	Environment, Safety: Ethics, Cost	Experimental	PO3, PO7, PO11, PSO3	SDG 11, SDG 12
24-25	Study of advanced VS conventional construction material	Prof. R D Patil	Sustainable Materials	Environment, Safety: Ethics, Cost	Comparative Study	PO1, PO2, PO5, PSO3	SDG 9
25-26	Use of Titanium dioxide in bricks	Dr. Y N Sonawane	Sustainable Materials	EnvironmentCost	Experimental	PO4, PO7, PO11, PSO3	SDG 12
25-26	M-Sand (Manufactured Sand)	Dr. M N Patil	Sustainable Materials	EnvironmentCost	Comparative Study	PO1, PO7, PO11, PSO3	SDG 12
25-26	Comparison Between Different types of Bricks	Dr. C J Chitte	Sustainable Materials	EnvironmentCost	Experimental	PO1, PO4, PO5, PSO3	SDG 11
25-26	Green Solution for Sustainable (Papercrete)	Dr. P S Patil	Sustainable Materials	EnvironmentCost	Experimental	PO3, PO7, PO11, PSO3	SDG 12
25-26	Manufactured Sand vs. Fine Natural Sand	Prof. R D Patil	Sustainable Materials	EnvironmentCost	Comparative	PO1, PO2, PO7, PSO3	SDG 12
25-26	Comparative study between hydrated cement and normal cement	Dr. H R Kumavat	Sustainable Materials	Environment, Safety: Ethics, Cost	Experimental	PO1, PO4, PO7, PSO3	SDG 12
23-24	Study On Hyper Loop	M N Patil	Transportation Engineering	EnvironmentEthics, Cost	Conceptual Study	PO2, PO6, PO12, PSO1	SDG 9, SDG 11

24-25	Pre-Stressed Concrete Road	Prof. T S Bhamare	Transportation Engineering	EnvironmentEthics, Cost	Design Study	PO1, PO3, PO5, PSO2	SDG 9
25-26	Use of plastic in road construction and its future impacts	Dr. R K Pawar	Transportation Engineering	Environment, Ethics, Cost	Experimental	PO3, PO7, PO11, PSO2	SDG 11, SDG 12
24-25	Analysing the role of urban planning in mitigating flash floods	Prof. A S Pawar	Urban & Environmental Engineering	Environment, Ethics, Cost	Analytical Study	PO2, PO6, PO7, PSO1	SDG 11, SDG 13
23-24	Study On Watershed Management	A S Pawar	Water Resources Engineering	Environment, Ethics, Cost	Study & Analysis	PO1, PO3, PO6, PSO1	SDG 6, SDG 13
23-24	Case Study on Sulvade Jamphal Dam	A S Pawar	Water Resources Engineering	Environment, Ethics, Cost	Case Study	PO1, PO6, PO7, PSO1	SDG 6, SDG 9
25-26	Design and analysis of Gravity Dam	Prof. A S Pawar	Water Resources Engineering	Environment, Ethics, Cost	Design	PO1, PO3, PO6, PSO1	SDG 6
23-24	Cement mortar characteristics with plastic waste	Prof. Dr. H. S. Patil	Concrete Technolog/ Sustainable Materials	Environment, Ethics, Cost	Research	PO1, PO2, PO4, PO7, PSO1	SDG 12, 13
23-24	3D Printing is Transforming the Construction Industry	Prof. R. D. Patil	Concrete Technology / Sustainable Materials	Cost, Ethics, Safety	Research	PO1, PO5, PO12, PSO1	SDG 9, 11

25-26	Implementation of Rainwater Harvesting in Residential Building	Dr. M. N. Patil	Concrete Technology / Sustainable Materials	Environment, Cost	Application	PO3, PO6, PO7, PSO2	SDG 6, 11
23-24	Properties of cement with bitumen plant waste	Prof. Dr. H. S. Patil	Concrete Technology / Sustainable Materials	Environment, Cost	Research	PO1, PO2, PO4, PO7, PSO1	SDG 12, 9
24-25	Enhanced Compressive Strength of Cement by Adding Human Hair Fibres	Prof. Dr. H. S. Patil	Concrete Technology / Sustainable Materials	Ethics, Environment	Research	PO1, PO2, PO4, PSO1	SDG 12
25-26	Impact of Banana Stem Fibre on Concrete Properties	Dr. H. S. Patil	Concrete Technology / Sustainable Materials	Environment, Ethics	Research	PO1, PO2, PO4, PSO1	SDG 12
24-25	Self Curing Concrete	Prof. G. V. Tapkire	Concrete Technology / Sustainable Materials	Environment, Cost	Research	PO1, PO4, PO7, PSO1	SDG 9, 12
23-24	Compressive Data Collection on Construction Equipment & Materials From Local Construction Site & Existing Literature	Prof. Y. N. Sonawane	Construction Management	Cost, Ethics	Research	PO4, PO10, PO11, PSO1	SDG 9

23-24	Design a Sustainable water treatment plant	Prof. A. S. Pawar	Environmental Engineering	Environment, Safety, Cost	Application	PO1, PO2, PO3, PO6, PO7, PSO2	SDG 6, 9, 11
23-24	Water Quality Monitoring system	Prof. G. V. Tapkire	Environmental Engineering	Safety, Environment	Product / Application	PO3, PO4, PO5, PO6, PSO2	SDG 6, 3
23-24	Water conservation practices	Prof. L. S. Mahajan	Environmental Engineering	Environment, Ethics	Application	PO6, PO7, PO8, PSO2	SDG 6, 12
24-25	Soil Stabilization	Prof. Dr. M. N. Patil	Geotechnical Engineering	Safety, Cost	Application	PO1, PO3, PO6, PSO1	SDG 9
25-26	Study and Implementation of Erosion Control Techniques for Slopes	Prof. R. K. Pawar	Geotechnical Environmental	Safety, Environment	Application	PO3, PO6, PO7, PSO2	SDG 13, 15
23-24	Rubber dam	J. M. Joshi	Hydraulic Structures	Safety, Environment	Application	PO1, PO3, PO6, PSO2	SDG 6, 11
23-24	Review of Cost Analysis & Effectiveness of Bioga Plant using Food Waste	J. M. Joshi	Renewable Energy	Environment, Ethics, Cost	Research	PO2, PO4, PO6, PO7, PSO2	SDG 7, 12, 13
24-25	Canal Top Solar Panel System	Prof. P. S. Patil	Renewable Energy	Environment, Cost	Product / Application	PO3, PO5, PO7, PSO2	SDG 7, 13

25-26	Structural Analysis and Design of G+8 Building Using Stadd-Pro.	Dr. Y. N. Sonawane	Structural Engineering	Safety, Cost	Application	PO3, PO5, PO11, PSO1	SDG 11
25-26	Carbonation of Concrete Simulation by Finite Element Modeling	Dr. H. R. Kumavat	Structural Engineering	Environment, Safety	Research	PO2, PO4, PO5, PSO1	SDG 9
24-25	Structural Audit - Case Study on Existing old Bulding	Prof. Y. N. Sonawane	Structural Engineering	Safety, Ethics	Application	PO1, PO2, PO6, PSO1	SDG 11
24-25	Design and Analysis of Earthquake Resistant Structures	Prof. J. M. Joshi	Structural Engineering	Safety, Ethics	Application	PO3, PO6, PO8, PSO1	SDG 11
25-26	Analysis and Design of G+5 Residential Building using STAAD-PRO	Prof. A. S. Pawar	Structural Engineering	Safety, Cost, Ethics	Application	PO1, PO2, PO3, PO5, PO6, PSO1, PSO2	SDG 9, SDG 11
25-26	Non-Destructive Evaluation of Civil Engineering Structures: A Comphrensive Study	Prof. R. D. Patil	Structural Engineering	Safety, Ethics	Research	PO1, PO4, PO5, PSO1	SDG 9, 11
23-24	Fly Ash Concrete Pavement	Prof. C. J. Chitte	Transportation Engineering	Environment, Cost	Research	PO1, PO2, PO7, PSO1	SDG 9, 12

25-26	Permeable Concrete Pavement with Filtration and Recharge Layer	Prof. J.M.Joshi	Transportation Engineering	Environment, Safety	Research	PO1, PO4, PO7, PSO1	SDG 9, 11
23-24	Highway Safety Measures to be Adopted by Civil Engineering	Prof. R. K. Pawar	Transportation Engineering	Safety, Ethics	Application	PO2, PO6, PO8, PSO2	SDG 3, 11
24-25	Noise Barrier Traffic on Road	Prof. C. J. Chitte	Transportation Engineering	Safety, Environment	Application	PO3, PO6, PO7, PSO2	SDG 3, 11
24-25	Case Study on Smart Village Planning	Prof. A. S. Pawar	Urban & Rural Planning	Ethics, Environment	Application	PO6, PO7, PO11, PSO2	SDG 11
23-24	Sustainable Drainage System for Hilly and Urban Area	Prof. M. N. Patil	Water Resources Engineering	Environment, Safety	Application	PO3, PO6, PO7, PSO2	SDG 6, 11
25-26	Performance Assessment of Urban Drainage System	Prof. T.S. Bhamare	Water Resources Engineering	Environment, Safety, Cost	Research / Application	PO1, PO2, PO3, PO4, PO6, PO7, PO11, SO1, PSO3	SDG 6, SDG 11

24-25	Study of Water Metering Systems for domestic Water Supplied by Municipal Corporation of Shirpur-Warwade	Prof. R. K. Pawar	Water Supply Engineering	Cost, Ethics	Research	PO2, PO6, PO11, PSO2	SDG 6

The domain-wise student projects effectively support the Outcome-Based Education (OBE) framework of NBA by enabling students to apply and integrate all program outcomes in practical settings. These projects allow students to use engineering knowledge (PO1), perform problem analysis (PO2), and develop design solutions (PO3) while conducting investigations (PO4) using modern engineering tools (PO5). They also foster an understanding of the engineer and society (PO6), promote environmental awareness and sustainability (PO7), and instil professional ethics (PO8). Through collaborative work and team activities (PO9), students improve their communication skills (PO10), gain experience in project management (PO11), and develop a mind set for lifelong learning (PO12).

At the same time, these projects enhance PSO-1 by applying core civil engineering concepts and strengthen PSO-2. The domain-wise student projects enhance the attainment of POs and PSOs by applying engineering knowledge, problem analysis, solution design, and modern tools to real-world challenges. These projects contribute to sustainable development by promoting health and well-being, smart and sustainable urban solutions, resource efficiency, climate action, technological innovation, and ecosystem protection, thereby aligning with relevant SDGs and improving industry readiness and societal impact.

D. Seminar / Presentation Activity

The Presentation Activity is a key component of continuous learning and assessment in the Department of Civil Engineering. Conducted for 2–3 subjects as a key component of teacher assessment, this activity aims to enhance students' technical knowledge, communication skills, confidence, and professional presentation abilities.

Students are assigned topics from core subjects or interdisciplinary areas aligned with COs, POs, and PSOs. Students prepare a PowerPoint presentation through research and analysis of credible academic and industry sources, fostering self-learning and awareness of technological advancements.

Process for Conducting the Activity:

- Announcement of activity in the academic calendar and notify students.
- Assign topics aligned with curriculum and program outcomes.
- Share evaluation rubric and marking criteria with students.
- Communicate dress code and presentation etiquette.
- Confirm panel members and schedule.
- Panel evaluates and records scores immediately after Q&A.
- Compute final marks as the average of panel scores.

Presentations are evaluated by a faculty panel using rubrics covering organization, clarity, delivery, visual aids, technical knowledge, and audience engagement. This activity not only reinforces engineering concepts but also develops critical soft skills such as teamwork, analytical thinking, and public speaking. Suggestions from panel members contributes to improve in presentation skills.

Overall, the Presentation Activity bridges theoretical knowledge and practical application, preparing students for professional presentations, project defenses, and future academic or industry roles. The following Table 2.4.7 shows the rubrics for the presentation activity, while Table 2.4.8 highlights the course-wise presentation topics along with their corresponding POs and PSOs mapping.

Table No.2.4.7: Evaluation of Presentation Activity

Organization and content of Presentation	Clarity and Delivery	Use of Visual aids	Technical Knowledge	Engagement with Audience	Total
05	05	05	05	05	25
The total marks are then Scale down to 5					

Table No.2.4.8: Sample Mapping of Presentation Topics for A.Y. 2025-26

Presentation Topic	Course	POs Mapping	PSOs Mapping
Nagpur-Mumbai Samrudhhi Mahamarg	Transportation Engg	PO1, PO2, PO5, PO10, PO12	PSO-2
Building Retrofitting	Structure Engg	PO1, PO2, PO3, PO5, PO10, PO12	PSO-2
Green Building	Structure Engg	PO1, PO2, PO4, PO5, PO6, PO7, PO12	PSO-1
Aluform for Building	Concrete Technology	PO1, PO2, PO4, PO5, PO6, PO7, PO12	PSO-2
Jamphal_kanoli Lift Irrigation project	Water Resources Engg	PO1, PO2, PO4, PO5, PO6, PO7, PO12	PSO-1

2.5 Case Studies and Real-Life Examples (10) Total Marks 10.00

Institute Marks : 10.00

Case studies and real-life examples support the OBE framework by effectively linking theoretical concepts with practical applications. They enhance students' engineering knowledge, problem analysis, and solution design while promoting the use of modern engineering tools. Such activities foster critical thinking, ethical awareness, teamwork, communication, and project management skills. Overall, they strengthen POs and PSOs attainment, improve industry readiness, and encourage lifelong learning.

Table 2.5.1 presents a comprehensive overview of student projects implemented in the Department of Civil Engineering, highlighting the integration of course-based learning with real-world applications. The table captures representative projects across core civil engineering domain. Each entry maps the project to the relevant POs and COs demonstrating alignment with the OBE framework.

This table 2.5.1 reflects how department-level projects contribute to:

- PO & CO attainment: Reinforcing core engineering competencies and course objectives.
- Industry-readiness: By applying theoretical knowledge to real-life scenarios and interacting with relevant industries or organizations.
- Sustainable Development Goals (SDGs): Many projects address SDGs such as SDG 3 (Health & Well-being), SDG 6 (Clean Water & Sanitation), SDG 9 (Industry, Innovation & Infrastructure), SDG 11 (Sustainable Cities & Communities), SDG 12 (Responsible Consumption & Production), and SDG 13 (Climate Action).
- Hands-on learning and innovation: Students acquire practical skills in software and material testing
- This representation demonstrates the department's commitment to Outcome-Based Education (OBE), bridging academic learning, practical implementation, industry interaction, and societal impact.

Table No.2.5.1: Real-Life Examples Domain-wise Project Outcome and SDG Mapping

Sr. No	Title / Topic	Course Name	POs Mapped	COs Mapped	Description of Case / Real-Life Example	Industry / Organization Involved	Application Area / Domain	Learning Outcome / Insight	Assessment Method Used	Reference / Source
1	Floating Solar Panel Over the Canal at Shirpur	Water Resources Engg	PO1, PO2, PO3	CO1, CO2	Real-life renewable energy application on canal infrastructure	Local Authority / Energy Dept.	Renewable Energy / Sustainability	Understanding sustainable energy solutions	Project Report, Presentation	Field Study, Govt. Reports
2	Use of plastic in road construction and its future impacts	Transportation Engg.	PO1, PO3, PO7	CO1, CO3	Case study on waste plastic utilization in roads	Municipal Corporation	Transportation Engineering	Awareness of sustainable road materials	Report, Viva	IRC Guidelines
3	Analysing the role of urban planning in mitigating flash floods	Urban Planning	PO2, PO3, PO6	CO2, CO4	Urban flood mitigation strategies through planning	Urban Local Body	Urban Planning / Hydrology	Flood risk reduction knowledge	Case Study Analysis	CPHEEO Manuals
4	Noise Barrier Traffic on Road	Traffic Engineering	PO1, PO5	CO1, CO2	Traffic noise control measures on highways	Highway Authority	Traffic Engineering	Noise pollution mitigation	Presentation	IRC / MoRTH

5	Study of Portable Water Supply in Rural Area Village Bhorkheda	Water Supply Engg	PO2, PO6	CO2, CO3	Rural drinking water supply assessment	Gram Panchayat	Water Supply Engineering	Rural infrastructure understanding	Field Survey, Report	Govt. Water Supply Data
6	Efficient Intersection Management: A Traffic Light Free Approach for Karwand Naka	Traffic Engineering	PO1, PO4, PO5	CO1, CO4	Real-time traffic management case study	Traffic Police / Local Body	Traffic Engineering	Intersection efficiency analysis	Project Report	Field Observation
7	Assessment of Water Quality Stability and Impact of Leakages in Shirpur Water Distribution System	Water Supply Engg	PO2, PO3	CO2, CO3	Leakage impact on water quality	Municipal Council	Water Distribution Systems	Water quality assessment skills	Lab Analysis, Report	IS Codes
8	Performance Assessment of the Urban Drainage System in Shirpur City – Challenges and Solutions	Sanitation and water supply Engg.	PO2, PO6	CO2, CO4	Urban drainage performance evaluation	Municipal Corporation	Urban Drainage	Stormwater management insight	Case Study Report	City Drainage Maps
9	Sustainability Assessment: Energy and Green Audit – RCPIT	Environmental Engg.	PO6, PO7	CO3, CO4	Institutional energy audit case study	Educational Institute	Energy Management	Green audit competence	Audit Report	Energy Audit Manuals
10	Aesthetic Planning of Garden at Janikaran Nagar	Urban Planning	PO3, PO8	CO2, CO3	Landscape planning for urban aesthetics	Local Community	Landscape Engineering	Sustainable landscaping skills	Design Submission	Landscape Standards
11	Power Generation Using Speed Breaker	Environmental Engg.	PO1, PO5, PO7	CO1, CO4	Innovative energy harvesting case	Local Road Authority	Energy Systems	Concept of alternative energy	Model, Presentation	Research Articles

12	Water Quality Monitoring System	Environmental Engg.	PO2, PO5	CO2, CO3	Sensor-based water quality monitoring	Water Supply Dept.	Environmental Engineering	IoT-based monitoring skills	Demonstration, Viva	Journals / IS Codes

2.6 SWAYAM/NPTEL/MOOC/Self Learning (10) Total Marks 10.00

Institute Marks : 10.00

The Department of Civil Engineering at R. C. Patel Institute of Technology, Shirpur, actively promotes SWAYAM, NPTEL, and other recognized MOOC certifications as an integral component of the academic ecosystem. The following Table 2.6.1 presents the module-wise skill development framework and its alignment with POs and PSOs. These certifications are encouraged not only for knowledge enhancement but also as an alternative mechanism for evaluating student's Term Test performance as per institutional academic policies.

Table No.2.6.1: Curriculum Modules, Skills Acquired, and Mapping to POs and PSOs

Sr. No.	Name of the Module	Skill Gained	Relevance to POs and PSOs
IIRS:2022-23	• Geospatial application for forest ecosystem analysis • Remote sensing and digital image analysis • Remote sensing and GIS technology	Ecosystem analysis, environmental monitoring, satellite image interpretation	PO1, PO4, PO7, PO12; PSO3
IIRS:23-24	• RS & GIS Applications in Natural Resource Management	Resource mapping, sustainability assessment, decision support using RS & GIS	PO2, PO5, PO7; PSO3
IIRS: 2024-25	• AI/ML for Geodata Analysis • LIDAR Data Processing and Applications • Basics of "Remote Sensing, Geographical Information System and Global Navigation Satellite System • Remote Sensing and Digital Image Analysis • Overview of Geographical Information System	AI-based spatial analytics, LiDAR data handling, integrated geospatial systems	PO1, PO2, PO5, PO12; PSO2

Following Table 2.6.2 shows academic year-wise participation of UG students in SWAYAM/NPTEL/MOOC and other online certification courses. .

Table No.2.6.2: Year wise Certification by Students

	No. of Students		
Platform	2022-23	2023-24	2024-25
IIRS	27	3	26
NPTEL	0	0	5

Participation increased steadily over the years, with a significant rise in AY 2024–25 due to systematic promotion of certifications and their acceptance as an option for term test performance evaluation. This initiative has strengthened self-learning, technical competency and outcome attainment among students.

Scope for Self-Learning and Facilities and Its Use:

The department provides a strong ecosystem to promote self-learning and continuous professional development among students.

Platforms such as AutoCad, StaddPro are actively used to enhance students' problem-solving ability, and design thinking through regular practice, contests, and peer learning.

The Central Library with DELNET access offers extensive digital and print resources, including e-books, e-journals, research articles, theses, and conference proceedings, enabling students to engage in independent learning, literature surveys, and research-oriented activities.

Additionally, the ISTE, IEI facilitates self-learning through technical talks, workshops exposing students to emerging technologies and best industry practices. Collectively, these facilities effectively support OBE and foster lifelong learning.

The institute provides VLAB facilities to strengthen the scope of self-learning beyond regular classroom and laboratory hours. Virtual Labs allow students to independently perform experiments, visualize complex concepts, and practice laboratory procedures at their own pace, thereby reinforcing theoretical understanding through hands-on learning. The effective use of this facility enhances students' experimentation skills, analytical and problem-solving abilities, and familiarity with modern engineering tools.

2.7 Solving Complex Engineering Problems Incorporating Sustainability Goals (20) Total Marks 20.00

Institute Marks : 20.00

Solving complex engineering problems incorporating sustainability goals strongly supports the OBE framework by effectively connecting theoretical concepts with practical implementation. Such activities enhance engineering knowledge, problem analysis, solution design, and the use of modern engineering tools, while fostering critical thinking, ethical awareness, teamwork, communication, and project management skills. Overall, they strengthen POs and PSOs attainment, improve industry readiness, and promote lifelong learning.

The following Table 2.7.1 presents selected industry-driven problem scenarios, their engineering methodology, proposed solutions, societal impact, and assessment methods, demonstrating practical implementation and sustainable innovation.

Table No.2.7.1: Sample Projects for Solving Complex Engineering Problems Incorporating Sustainability Goals

Sr. No.	Problem Title / Scenario	Course Name	POs Mapped	SDG	Description of Problem	Engineering Approach / Methodology	Tools / Technologies Used	Solution Proposed	Impact on Society / Environment	Assessment Method
1	Tapi River Suicide Attempt Remedial Action	Environmental Engineering	PO2, PO3, PO6, PO7	SDG 3, SDG 11	Frequent suicide attempts at river ghats	Site survey, risk assessment, safety planning	GIS mapping, field survey tools	Installation of barriers, warning systems, surveillance planning	Improved public safety and mental health awareness	Project report, design evaluation, presentation
2	Sustainability Assessment: Energy and Green Audit – RCPIT	Environmental Engineering	PO3, PO5, PO7, PO11	SDG 7, SDG 11, SDG 13	High energy consumption and carbon footprint of institutional buildings	Energy auditing, data analysis, sustainability assessment	Energy audit tools, Excel, simulation software	Energy conservation measures and green building strategies	Reduced energy use and carbon emissions	Audit report, data analysis, viva
3	Aesthetic Planning of Garden at Janikaran Nagar	Environmental Engineering / Planning	PO3, PO6, PO7	SDG 11, SDG 15	Lack of green recreational spaces in residential area	Landscape planning, soil analysis, eco-design	AutoCAD, landscape design software	Eco-friendly garden layout with native plantation	Enhanced urban aesthetics and environmental quality	Design submission, site-based evaluation
4	Bio-brick Development of Sustainable and Cost-effective Building Material	Concrete Technology	PO3, PO4, PO7	SDG 9, SDG 12, SDG 13	High cost and environmental impact of conventional bricks	Material characterization, mix design, testing	UTM, material testing equipment	Development of bio-bricks using waste materials	Sustainable construction and waste utilization	Lab testing, performance analysis
5	Power Generation Using Speed Breaker	Renewable Energy / Transportation Engg.	PO3, PO5, PO7	SDG 7, SDG 9	Untapped kinetic energy of vehicles on roads	Mechanical energy harvesting design	Mechanical components, generators	Speed breaker-based power generation system	Renewable energy generation for street lighting	Prototype demonstration, performance testing

6	Study of Water Metering Systems for Domestic Water Supply	Water Resources Engineering	PO2, PO3, PO6	SDG 6, SDG 11	Water loss and inefficient billing in municipal supply	Field study, data collection, system analysis	Flow meters, GIS, Excel	Improved water metering and monitoring strategy	Water conservation and efficient management	Field report, case study evaluation

2.8 Steps Taken for Enhancing Industry Institute Partnerships (15) Total Marks 15.00

Institute Marks : 15.00

The department has taken consistent efforts to strengthen Industry–Institute interaction by bridging academic learning with real-world industrial practices. Through collaborations with industries, start-ups, and professional bodies, students are provided opportunities for internships, industry-oriented projects, expert lectures, and hands-on training.

These initiatives shown in Table 2.8.1 helps student to gain practical exposure to emerging technologies, enhance technical and professional skills, and improve employability, while enabling faculty to align teaching–learning processes with current industry requirements.

A. Industry-Led Technical Training and Visits

Civil Department has established active Memoranda of Understanding (MoU's) with reputed industries, training organizations, and CSR partners to strengthen industry–academia interaction.

MoU's strengthen outcome-based education by enabling industry-relevant technical training, internships, live projects, expert interactions, and placement-focused skill development for students.

Table No.2.8.1: MoU-Supported Industry Interaction and Training Programs

Sr. No	Name of the Industry	MOU for	Activities Conducted
1	Campus Credential	1) Aptitude & Technical Training 2) Pre-placement expert lectures (seminars/webinars). 3) Career guidance sessions. 4) Training students for placement. 5) Employability skills enhancement (aptitude, logical reasoning, verbal ability, domain skills)	1) Aptitude Training Program and Assesment 2) Technical Placement Training and Assesment 3) Webinars/Seminars by experts. 4) Career Guidance Workshops. 5) LMS for placement preparation 6) Assesment of students for company
2	MakeMyCareer WCF	1) Training under Make My Career Program for underprivileged graduates 2) Domain knowledge, soft skills, project work, case studies 3) WCF responsible for training delivery; RCPIT for mobilisation & attendance (85%) 4) Branding & CSR promotion guidelines 5) Confidentiality, IP Terms, anti-corruption compliance	1) Student identification & enrolment 2) Online/offline skill-based training 3) Project-based learning & assessments 4) Career readiness sessions 5) CSR publicity as per WCF guidelines.
3	Sayeesha Infrastructure	Internship, Industrial Training, Live Projects	Site-based training in construction and supervision, exposure to quality control and safety practices, guidance for student projects
4	Ekam Venture	Internship, Industrial Training, Project Guidance	Training in construction supervision, project execution, estimation and planning, field visits to ongoing projects
5	Hitesh Lahoti and Associates	Skill Development, Software Training	Hands-on training on AutoCAD, STAAD, ETABS and other civil engineering software, workshops for design and drafting
6	Quantum Industries	Internship, Industrial Training, Industry Interaction	Industrial training in construction activities, exposure to site management, quality assurance and professional practices

Through these collaborations, students gain hands-on exposure, problem-solving ability, professional skills, and familiarity with modern tools and technologies, leading to improved attainment of POs and PSOs. The following Table 2.8.2 and Table 2.8.3 represents the industry collaborations along with their impact analysis and mapping with relevant POs and PSOs.

Table No.2.8.2: Industry Engagements, Outcome Impact, and POs/PSOs Alignment

Name of the Industry	Impact Analysis	PO Mapping	PSO Mapping
Campus Credential	Enhanced student employability through aptitude and technical training, improved placement readiness, exposure to expert sessions, and continuous assessment using LMS platforms	PO9, PO10, PO11, PO12	PSO1, PSO2
Make My Career – WCF	Improved skill development of underprivileged students through structured training programs, project-based learning, career readiness sessions, and CSR-driven educational outreach	PO6, PO8, PO9, PO10	PSO1, PSO2
Sayeesha Infrastructure	Provided hands-on exposure to construction supervision, quality control, and safety practices, enhancing practical knowledge and site management skills	PO3, PO4, PO6, PO11	PSO2
Ekam Venture	Improved understanding of construction planning, estimation, execution, and professional practices through field-based training and internships	PO3, PO4, PO11	PSO2
Hitesh Lahoti and Associates	Enhanced students' technical competency in civil engineering software tools, drafting, and structural analysis, improving industry readiness	PO1, PO5, PO11	PSO1, PSO2
Quantum Industries	Strengthened industry exposure through training in construction activities, site management, quality assurance, and professional ethics	PO3, PO4, PO6	PSO2

Table No.2.8.3: Industry Visit, Gap Addressed and Impact Analysis

Industry/ Site Visited	Date	No. of Students	Gaps Addressed	Impact Analysis
Shirpur Market Yard	29/04/2023	58	Gap between theoretical knowledge of steel structure design and actual site execution, including understanding of real-life steel connections, fabrication methods, erection procedures.	The visit enhanced students' understanding of practical aspects of steel structure design, connection detailing, fabrication and erection processes, and site safety practices. .
Shirpur Market Yard	6/05/2024	45		
Shirpur Market Yard	3/05/2025	55		

ZTC, Bhusawal	13/12/2023	60	Gap between theoretical knowledge of Transportation Engineering and study the Varoius control system rules and regulations in railway transportation ; limited exposure to modern units control practices.	The visit enhanced students' understanding of Transportation Engineering
Sardar Sarovar Dam, Gujrat	16/11/2024	52	Limited practical exposure to large hydraulic structures, dam components, and water resource management beyond classroom learning.	Students gained real-world insight into design, construction, and operation of major hydraulic infrastructure, improving problem analysis skills and understanding of large-scale civil systems.
Site Visit at MERI, Nashik	24-10-2024	55	Insufficient awareness of applied research facilities, advanced testing methods, and industry-oriented civil engineering research.	The visit exposed students to research methodologies, advanced equipment, and modern investigative practices, encouraging analytical thinking and use of contemporary tools.
Sardar Sarovar Dam,Gujrat	09-10-2025	50	Lack of understanding of sustainability, safety measures, and societal impact of mega Irregation projects.	Students developed awareness of environmental, social, and safety aspects of dam projects, reinforcing sustainable development concepts and ethical engineering practices.
Water Treatment Plant	15-10-2025	60	Limited understanding of operational control, automation, and maintenance aspects of water treatment plants.	Students gained practical insights into plant operation, monitoring, and automation, enhancing problem-solving ability and familiarity with modern tools.
Site Visit at MERI, Nashik	01-10-2025	50	Lack of exposure to interdisciplinary applications and industry–academia research collaboration.	The visit motivated students towards collaborative learning, research orientation, and life-long learning through exposure to professional research environments.

B. Industrial Guest Lectures

The Civil Department organized a series of expert lectures, pre-placement talk to enhance students' awareness of innovation, entrepreneurship, intellectual property rights, societal responsibilities, and global career opportunities. These activities bridge the gap between academic learning and real-world practices, thereby improving the attainment of POs and PSOs.

Table No.2.8.4: Impact of Expert Lectures and Resource Person Sessions on POs–PSOs Attainment

Sr. no	Resource Person with Designation	Title/Topic Addressed	Date	Number of student Participated	Gaps Addressed	Impact Analysis (*To be written in relevance to PO and PSOs)*
1	Mr. Prashant Nagar, Territory Manager, Ultra Tech Cement Ltd., Dhule (Technical Division).	career opportunities in the cement industry	21/09/2022	60	Insufficient awareness about Industry feedback	PO9, PO10, PO11, PSO1, PSO2
2	Dr. Shitalkumar Rawandale, Dean T&P, PCCOE	Placement and Skills required as per Industry point of view	21/09/2024	600	Career planning, placement readiness, higher education awareness	PO9, PO10, PO11; PSO1, PSO2
3	Dr. Santosh Borde, Dean Student Progression & Industry Relations, JSPM Pune	Placement and Skills required as per Industry point of view	20/09/2024	500	Industry-academia gap, employability skills, professional ethics	PO6, PO9, PO10; PSO2
4	Amol Patil, Vishal Wagh, Snehal Sisode	Engineers day and Government job preparation	14/9/2024	55	Lack of awareness regarding government job opportunities, competitive exams, and systematic career planning.	PO10, PO11, PO12, PSO1
5	Rushikesh Shinde, (Technical Officer) Nilesh Kulkarni (Sales officer) Kalika Steel,	Kalika Steel Company information	09/04/2025	180	Limited understanding of real-time industrial working environment, steel manufacturing process, and quality control practices.	PO5, PO9, PO10, PO11, PSO1, PSO2
6	Sagar Shirsath and Nikhil Nawarkar(Regional Manager and Assistant Sales Manager)Just Dial	Just Dial	18/4/2023	40	Lack of exposure to industrial marketing strategies, customer relationship management, and corporate sales operations.	PO9, PO10, PO11, PO12, PSO1
7	Prof. Rugved deolekar, Kshitij Agrawal, Yasha jain (industry Expert	TSS, Lower Parel, Mumbai	25/7/2023	40	Insufficient knowledge of large-scale software practices, project execution planning, and management techniques.	PO5, PO6, PO11, PSO2

8	Miss. Divyan, Jaidev, Merlin, Nagarjun (Industry Person)	Sutherland global campus	23/11/2023	110	Lack of awareness about corporate work culture, and professional communication skills.	PO8, PO9, PO10, PO12, PSO1

Outcomes of Activities

- Research Orientation: Enhanced understanding of global research challenges and interdisciplinary approaches, improving problem identification and research skills (PO1, PO2, PO4; PSO1, PSO2).
- Innovation & IPR Competence: Improved awareness of patents and IPR processes, strengthening innovation planning, problem-solving, and protection of research outcomes (PO1, PO2, PO4; PSO1, PSO2).
- Lifelong Learning & Career Planning: Increased clarity on overseas education and career pathways, promoting higher studies and self-directed learning (PO12).
- Global Communication Readiness: Improved preparedness for international education and multicultural environments through language and test-prep exposure (PO10, PO12).
- Global Employability Awareness: Motivated students to acquire additional skills and certifications, enhancing adaptability to global industry requirements (PO10, PO12).

C. Pre Placement Talks

Pre-placement talks prepare students for industry expectations by providing insights into recruitment processes, job roles, and required skills, thereby enhancing employability, confidence, and industry readiness while supporting POs and PSOs attainment as shown Table 2.8.5.

Table No.2.8.5: Industry Awareness, and Training Activities with POs–PSOs Impact

Name of the Activity	Date	No. of Students	Gaps Addressed	Impact Analysis (POs & PSOs)
Knest Aluminium Formwork Company – Pre Placement Talk	06/11/2025	39	Lack of awareness about modern formwork systems, industry expectations	PO3, PO5, PO11; PSO2
Ekam Venture Company – Pre Placement Talk	22/09/2025	33	Limited exposure to construction supervision and execution practices	PO3, PO4, PO11; PSO2
S. J. Contract, Pune – Pre Placement Talk	18/01/2025	40	Gap in understanding contractor roles, site management, and safety	PO6, PO11; PSO2
Probian Tech Ltd., Nashik – Pre Placement Talk	18/11/2024	22	Insufficient exposure to civil engineering software and digital tools	PO5, PO11; PSO1
SVKM and Quantum Industries – Industry Interaction Session	06/05/2024	20	Limited industry interaction and practical exposure	PO3, PO4, PO11; PSO2
Suroj Buildcon – Pre Placement Talk	03/05/2024	46	Awareness of large infrastructure project execution and career roles	PO3, PO6, PO11; PSO2
Indovance – Pre Placement Talk	04/04/2024	37	Exposure to design consultancy, BIM and software-based workflows	PO5, PO11; PSO1
TCS, Pune – Pre Placement Talk on TCS NQT	03/04/2024	125	Awareness of IT career, aptitude preparation, recruitment process	PO5, PO9, PO11; PSO1

D. Alumni Interaction

Alumni interactions enrich the teaching–learning process by sharing industry experiences, career guidance, and emerging trends, helping students connect theory with practice and improving learning outcomes, employability, and POs–PSOs attainment as shown in Table 2.8.6.

Table No.2.8.6: Alumni Interaction and Its Impact on POs–PSOs Attainment

Sr No	Resource Person	Expertise Domain	Title / Topic	Date	No. of Students	Gaps Addressed	Impact Analysis (PO–PSO Mapping)
1	Jitendra Prajapati	Structure and management	Government Job Preparation	10 July 2022	80	Lack of awareness regarding government job opportunities, competitive examinations, preparation strategy, and career planning in public sector.	PO10, PO11, PO12, PSO1
2	Bhushan Dilip Patil	TCS, System Engineer	Diverse background to Placement preparation	25 April 2023	80	Lack of industry awareness, placement readiness, interview skills, corporate expectations	PO1, PO7, PO10, PO11; PSO1
3	Krushna Manoj Patil	Dredging and Marine Works	Site Challeges	29 Aug 2023	30	Limited practical knowledge of marine construction, site challenges, safety practices	PO1, PO2, PO6; PSO2
4	Harshal Jitendra Wagh	Junior Engineer in CSIR, Bhavnagar)	Engineers Day	15 Sept 2023	80	Gap between academic learning and professional engineering practice	PO3, PO8, PO9; PSO1
5	Chaudhari Harshal Vikas	Billing Engineer Juniper Constructions Pvt Ltd	Billing and Site experience	27 Sept 2023	33	Insufficient exposure to billing procedures, BOQ preparation, real-time site practices	PO1, PO5, PO11; PSO2
6	Ashutosh Patil	System Engineer	Journey of Placement	23 March 2024	25	Lack of structured guidance on placement process and career planning	PO10, PO11, PO12; PSO1
7	Mr. Sandip Thakare	Asst. Vice President Union Bank of Switzerland, Poland	Importance of Programming skills for An Engineer to secure good placement.	11 sept 2024	120	Deficiency in soft skills, programming mindset, and employability competencies	PO4, PO10, PO11; PSO1
8	Shubham Sughandi	Entrepreneur, founder, Marketing Mantra	Entrepreneurship and Startups	16 Jan 2025	110	Lack of entrepreneurial mindset, startup ecosystem awareness	PO2, PO7, PO12; PSO3

9	Shweta Shah	Assistant Manager HR in Quant Insti	Marketing Job appotunity	13 Nov 2025	12	Limited understanding of non-core career opportunities and marketing roles	PO7, PO10, PO12; PSO3
10	Sandecha Shreyans Kiranmal	Assistant Manager HR in Quant insti	Marketing Job appotunity	13 Nov 2025	12	Awareness gap regarding corporate HR expectations and skill requirements	PO7, PO10, PO12; PSO3

3 OUTCOME-BASED ASSESSMENT (120)

Total Marks 120.00

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

Total Marks 10.00

Institute Marks : 10.00

As per the Autonomy curriculum of Institute, for attaining COs, POs and PSOs, Internal Assessment is conducted through Term Tests and Teacher Assessment components. The mark distribution scheme followed for internal and external examination is as shown in Table 3.1.1.

Table 3.1.1: Mark Distribution of Internal and External Examination

Sr. No.	Evaluation Parameter	Marks
Theory (35%- Internal, 65%- External)		
1	Term Test-1 (TT-1) and Term Test-2 (TT-2) are conducted 30 marks each and scaled down to 15	15
2	Teacher Assessment	20
3	End Semester Examination (ESE)	65
Practical (50%- Internal, 50%- External)		
1	Continuous Assessment Laboratory (CA)	25|50
2	End Semester Examination Laboratory (ESE)	25|50

A. Process for setting and evaluation of internal semester question paper

- Combination of summative and Informative assessment enables assessing and evaluating students in periodic intervals improves the impact of estimating performance in terms of outcomes.
- In this context, assessment/evaluation refers to the process of determining the value of the instruction given in the classroom and the degree to which course objectives have been fulfilled.
- The alignment of course outcomes, curriculum, pedagogy, and assessment contributes to the total learning experience for students clearer and more meaningful because assessment/evaluation is blended with teaching-learning pedagogy.
- For efficient learning of students, the institute makes sure that assessment techniques are well-aligned with learning outcomes and ensures measurable attainment.

Process to Ensure Quality

- The department wise examination coordinators are appointed to ensure confidentiality and security during the examination.
- The departmental examination coordinator for TT-1 and TT-2 (duration: 1 hour) ensures smooth conduction of examination and concerned course teachers frame question banks/papers for the prescribed syllabus. The questions are framed according to
  - The curriculum and assessment frameworks for different courses.
  - The course outcomes and bloom taxonomy levels are mapped. The question paper audit/moderation ensures that all the COs are addressed.
  - Controller of examination prepares Internal Examination Time Table and Dy. Director and Director approves it.

A.1. Term Test Paper Based on Question Bank

For the 2023–24 batch, the following process is adopted:

Preparation of Question Banks

- Course teachers prepare and submit comprehensive question banks to the examination coordinator.
- Each question bank covers the full syllabus decided for Term Test, ensuring an appropriate mix of knowledge-based, analytical, and application-oriented questions as per Bloom's Taxonomy.
- For a course, the question bank comprises of 8-10 questions for each unit.
- Questions are also mapped to the relevant Course Outcomes (COs) for outcome-based evaluation.

Review and Finalization

- The question papers are reviewed by the module coordinator, who checks for syllabus coverage, cognitive level balance, and alignment with COs.

- Suggestions are provided if required, and the finalized version is forwarded to the Head of Department (HOD) for approval.

Selection of Paper for Examination

- During the term test, the Controller of Examinations (COE) selects questions from the approved question banks according to the prescribed paper pattern (including marks distribution).
- The finalized papers are then distributed to students at the time of the examination.

Evaluation Process

- Answer sheets are evaluated by respective course teachers within one week from the completion of test.
- A detailed marking scheme is followed to ensure fairness and consistency.
- Evaluated answer sheets are then shown to students for self-analysis, enabling them to identify strengths and weaknesses.

Documentation

- The entire process, including copies of the question papers, marking schemes, student performance analysis, and CO attainment reports, is maintained in Course Files as evidence for accreditation and quality assurance.
- After every internal assessment test, the course teachers discuss the solution of the questions in the class which enable students to perform well in the final examinations.
- The evaluation process helps in identifying the slow learner students among the class.

Format of Question Bank for TT-1 and TT-2: (**Batch 2023-24)**

Table 3.1.2: Question Bank Format TT-1 and TT-2

Type of questions per unit	Total No. of questions	No. of questions selected by COE	No. of questions mandatory to attempt	Marks
Short Answer Questions	04 or 05	02	02	02 X 05 = 10
Long Answer Questions	04 or 05	02	02	02 X 10 = 20

A.2. Term Test Paper Based on Question Paper Set(s)

For the 2024–25 batch, the following process is adopted:

Preparation of Question Papers

- Each course teacher prepares and submits two sets of question papers (with solutions and marking schemes) to the Examination Coordinator/Examination Office.
- These papers are designed to ensure adequate syllabus coverage, representation of different cognitive levels as per Bloom's Taxonomy, and alignment with the respective Course Outcomes (COs).

Review and Finalization

- The question banks are reviewed by the module coordinator, who checks for syllabus coverage, cognitive level balance, and alignment with COs.
- Suggestions are provided if required, and the finalized version is forwarded to the Head of Department (HOD) for approval.
- Once finalized, the hard copies/Soft copies of the question papers are submitted to the Examination Department.

Selection of Paper for Examination

- On the day of the test, the COE selects one paper from the two submitted sets.
- This selected paper is then printed, distributed, and administered to students under standard examination protocols.

Evaluation Process

- Answer sheets are evaluated by respective course teachers within one week from the completion of test.
- A detailed marking scheme is followed to ensure fairness and consistency.

- Evaluated answer sheets are then shown to students for self-analysis, enabling them to identify strengths and weaknesses.

Documentation

- The entire process, including copies of the question papers, marking schemes, student performance analysis, and CO attainment reports, is maintained in Course Files as evidence for accreditation and quality assurance.
- After every internal assessment test, the course teachers discuss the solution of the questions in the class which enable students to perform well in the final examinations.
- The evaluation process helps in identifying the slow learner students among the class.

Format of Question Paper for TT-1 and TT-2: (Batch 2024-25)

Table 3.1.3: Question Paper Format TT-1 and TT-2

Type of questions	No of question papers prepared by course faculty	No. of question paper selected by COE	Total No. of questions in question paper	No. of questions mandatory to attempt	Marks
Short Answer Questions	02	01	02	02	02 X 05 = 10
Long Answer Questions			04	02	02 X 10 = 20

Term Test Examination Process Flow

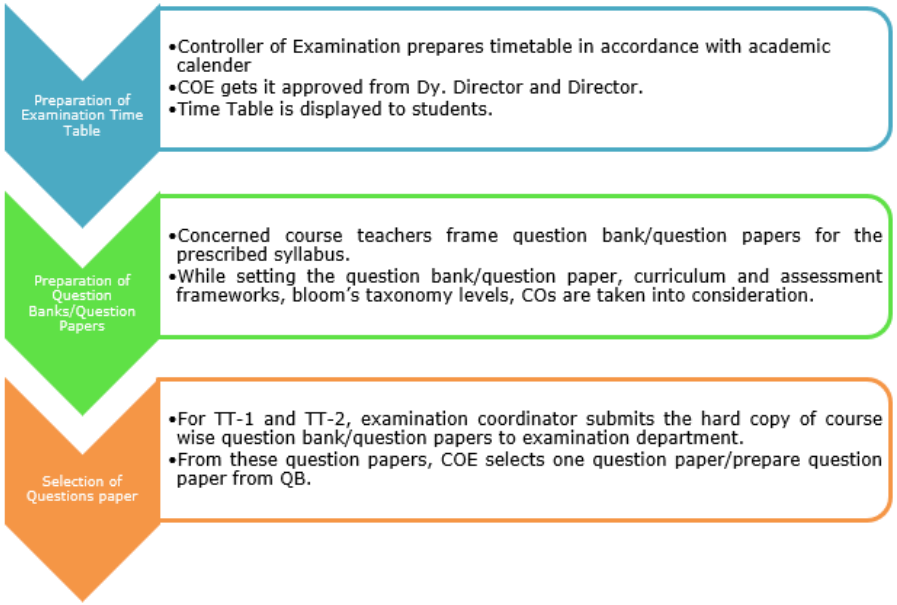


Figure 3.1.1: Term Test Examination Process Flow

B. Quality of questions, appropriateness of mapping with the COs

- The department ensures that the questions used in term tests evaluate students at different cognitive levels.
- Questions are designed according to Bloom's Taxonomy levels. Each question is mapped with the appropriate CO.
- The paper contains a balanced mix of conceptual, analytical, and problem-solving questions.
- Internal question papers undergo departmental moderation by module coordinator to maintain academic quality.
- The sample copy of term test question paper is as shown in Table 3.1.4 and 3.1.5.

Table 3.1.4: Term Test-1 Examination Question Paper

R. C. PATEL INSTITUTE OF TECHNOLOGY

(An Autonomous Institute)

Near Nimzari Naka, Shahada Road, Shirpur - 425405, Dist. Dhule (MS)

Telefax: (02563) 259600, 601, 602 Web: www.rcpit.ac.in E-mail: principal@rcpit.ac.in

A.Y.-2023-24 – Department of Civil Engineering (T. Y. B. Tech)

ODD SEMSTER (SEM- V) TT-I (Marks-30)

Subject Name with Code- Theory of Structure (PCCE5040T)

Day & Date- 28 /10/2023, Saturday **Time-** 10 am to 11 am

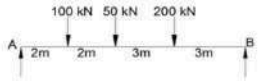
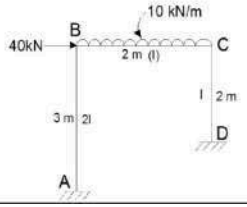
Q. No.	All Questions are Compulsory	CO Mapped (Correlation Level)	Bloom's Level	Max. Marks
Q.1	Calculate reactions at the support A&B for the simply supported beam shown below 	CO1	L5	5
Q.2	Derive equation and Draw ILD of simply supported beam AB for following case (a) Reaction at A (b) Reaction at B (c) Moment at any point C in the span AB (d) Shear force at C (C is any intermediate point in the span AB)	CO1	L3	10
Q.3	Explain in detail carry over factor and stiffness	CO2	L3	5
Q.4	Analyze the given frame by MDM 	CO2	L4	10

Table 3.1.5: Term Test-2 Examination Question Paper

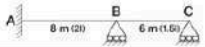
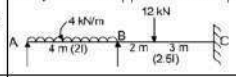
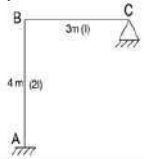
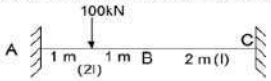
R. C. PATEL
INSTITUTE OF TECHNOLOGY
(An Autonomous Institute)
Near Nimzari Naka, Shahada Road, Shirpur - 425405, Dist. Dhule (MS)
Telefax: (02563) 259600, 601, 602 Web: www.rcpit.ac.in E-mail: principal@rcpit.ac.in

A.Y.-2023-24 – Department of Civil Engineering (T. Y. B. Tech)

ODD SEMSTER (SEM- V) TT-I (Marks-30)

Subject Name with Code- Theory of Structure (PCCE5040T)

Day & Date- 7/12/2023, Thursday **Time**- 10 a.m. to 11.00 a.m.

Q. No.	All Questions are Compulsory	CO Mapped (Correlation Level)	Bloom's Level	Max. Marks
Q.1	Generate stiffness matrix for the beam shown 	CO3	L5	5
Q.2	Analyze beam by stiffness method if support A sink by 120/EI and support B sink by 150/EI 	CO3	L4	10
Q.3	Formulate flexibility matrix for the frame shown below 	CO4	L5	5
Q.4	Analyze the beam by flexibility method 	CO4	L4	10

C. Assessment of COs coverage in unit tests/class tests/mid-term tests/assignments

The department ensures that all course outcomes are assessed through internal evaluation components.

C.1. Assessment of COs coverage through term tests

- Each question is mapped to a specific CO. CO coverage is verified using a CO-Question Mapping Table in attainment sheet.
- Performance data is collected for each CO.
- CO attainment is calculated using the percentage of students achieving the set benchmark.
- This ensures that internal assessments contribute effectively to CO attainment measurement.

C.2. Assessment of COs coverage through Teacher Assessment Components

The Institute has standardized the Continuous Assessment (CA) policies for FY, SY, TY and Final Year B. Tech students. To ensure holistic development and enhance the industry readiness of students, the department implements a structured Continuous Assessment (CA) framework of 35 marks. This framework is designed to evaluate students not only on academic knowledge but also on aptitude, innovation, and professional skills. At the college level, students are assessed through centralized term tests and an aptitude test conducted by the T&P department, which ensures uniformity and benchmarking across all branches. At the department level, assessment is diversified into components such as presentations, mock interviews, Quiz, GD, course-specific innovative assessment component, NPTEL/SWAYAM courses and skill enhancement exercises.

These components focus on practical applications, real-world problem-solving, and professional readiness. The overall system thus balances academic rigor with experiential learning, preparing students for both higher studies and industry careers. The amendments focus on enhancing fairness, constructive alignment with learning outcomes, and incorporating skill-based, industry-oriented, and professional development components. The details

are given in Table 3.1.6.

Table 3.1.6: Continuous Assessment Policy (Batch 2024-25)

Component	FY B. Tech	SY B. Tech	TY B. Tech	Final Year
Term Test Marks	15 marks	15 marks	15 marks	10 marks
Presentation/Virtual Lab/CodeChef	05 Marks	05 Marks	05 Marks	05 Marks
Group Discussion	05 Marks	05 Marks	--	--
Moodle Quiz	--	--	05 Marks	--
Mock Interview	--	--	--	05 Marks
Innovative Component	10 Marks	10 Marks	10 Marks	05 Marks
TA4/Skill Enhancement + Aptitude	--	--	--	10 Marks
Total Continuous Assessment	**35 Marks**	**35 Marks**	**35 Marks**	**35 Marks**

C.2.1. Key Components of the Continuous Assessment Policy

Term Tests

- Two term tests Term Test–1 and Term Test–2 are conducted per semester, each of 30 marks. The marks are scaled down to 15|10.
- Additional weightage: Students can earn bonus marks through online certifications to encourage self-learning and lifelong learning skills. Only courses from NPTEL/SWAYAM are allowed.

Aptitude Test

The aptitude tests are conducted in each semester. The marks obtained are converted to a standardized scale of 0 to 5 per course. The syllabus coverage follows a progressive approach, where students in lower semesters are tested on the syllabus covered within the same semester, while students in higher semesters are assessed on cumulative content from earlier semesters.

Teacher Assessment

A Teacher Assessment component covering academic, communication, innovation, and skill aspects:

TA-1: Presentation/Group Discussion/V-Lab/Moodle Quiz

The HOD and Department Examination Coordinator, in consultation with faculty members, assign one assessment component from the available components such as Presentation, Group Discussion, Moodle Quiz, or Virtual Lab to each course in the semester. Such distribution ensures variety, fairness, and balanced exposure to different assessment methods, helping students develop diverse academic and professional skills.

TA-2: Mock Interview

Mock interviews are conducted to simulate industry recruitment processes. The Training and Placement Department (T&P) compiles a repository of real interview questions asked during campus drives and company recruitment processes. Each course faculty prepares a question bank of 30 questions and shares them with students for preparation. Interviews are conducted by alumni from industry along with course faculty. Students receive personalized feedback from alumni and course experts regarding their strengths, weaknesses, and improvement areas.

TA-3: Innovative Component

Students are evaluated on creativity and innovation through activities such as role plays, crossword puzzles, or case studies. Students work in groups and complete the activity within a specified time. Marks are awarded based on quality, completion, and creativity, encouraging application of knowledge to real-world problems.

TA-4: Skill Enhancement

This component is designed to bridge academic knowledge with industry requirements, ensuring that students acquire practical exposure, professional skills, and industry readiness. It emphasizes hands-on learning, problem-solving, and innovation through a variety of structured activities. This includes:

- **Software & Technical Skills:** To develop proficiency in industry-standard tools such as AutoCAD, STAAD, ETABS, MS Project, and GIS. This enhances their design, analysis, planning, and project management capabilities.
- **Internships:** Completion of short-term internships (online/offline), verified by the Training and Placement (T&P) department, provides students with practical exposure to industry tools, workflows, and practices.
- **Professional Certifications:** Students are encouraged to pursue value-added certification courses approved by the department to validate their course expertise and strengthen employability.
- **Foreign Language Proficiency:** Certifications in languages such as German and Japanese are recognized, enhancing students' global employability and communication skills.
- **Competitions and Hackathons:** Participation in national-level competitions such as recognized technical events, design contests, and hackathons nurtures teamwork, design thinking, innovation, and problem-solving abilities.
- **Research and Innovation:** Students are encouraged to pursue research activities, including filing Intellectual Property Rights (IPRs) and publishing papers in reputed journals. Each IPR filed or journal paper publication carries 5 marks as recognition of innovation and contribution to knowledge creation.

Overall, the policy is designed to ensure balanced evaluation – measuring not only academic knowledge but also aptitude, communication, problem-solving, practical skills, and professional readiness, in line with OBE framework.

D. Sharing of post evaluation feedback with students for performance improvement

To ensure transparency and support continuous improvement in student performance, post-evaluation feedback is shared with students in a structured manner. After evaluation, course-wise term work is made visible to students through a Google Drive link in view-only mode. This live access allows students to review their assessed term work, understand the marks awarded, and identify areas for improvement without any risk of data modification.

Further, the evaluated term work marks are officially displayed to students, followed by a defined grievance period. During this period, students may approach the respective course teachers to raise any concerns or discrepancies related to their evaluation. The course teachers verify such issues and carry out necessary corrections wherever applicable. After completion of the grievance period and resolution of all valid concerns, the corrected term work is displayed again as the final term work to students. This feedback and grievance mechanism ensures fairness, clarity in evaluation, and effective academic performance enhancement.

3.2 Evaluation of the Semester End Exam (SEE) Question Paper (10) Total Marks 10.00

Institute Marks : 10.00

The End Semester Examination (ESE) is conducted to assess the comprehensive knowledge, skills, and application abilities of students at the end of the course.

The institute also facilitates a credit transfer process for courses completed through the NPTEL / SWAYAM platform, provided that the course content has maximum resemblance with the institute's syllabus and the number of credits is equivalent to the respective subject. The approval of such credit transfer is carried out as per the NEP guidelines after verification of course syllabus, credits, and certification from the respective platform.

The process of question paper setting, evaluation, and quality assurance is as follows:

A. Process for setting and evaluation of End Semester Exam (ESE) question paper

A.1. Process of Setting ESE Question Paper

The list of the Question Paper Setters for the ESE will be provided by Board of Studies (BOS) in respective subjects and finally approved by Academic Council (AC). The examination panel for each subject consist of subject chairman and members who have experience in the respective subject more than 5 years. The panel members should be ideally from the autonomous institute or should not located around districts of Dhule. The Controller of Examinations shall invite at least three sets of question papers for the Semester End Examination from the respective paper setters for the respective courses, at least thirty days prior to the commencement of the examination. The call for examination papers has Examiner order (See Figure 3.2.2), Instruction to paper setter (See Figure 3.2.3), question paper template (See Figure 3.2.4), Answer Key template (See Figure 3.2.5), question paper quality assurance report (See Figure 3.2.6) and Undertaking (See Figure 3.2.7) . The paper setters are required to submit the specified number of typed Question Paper/s and their corresponding model answer sets with marking scheme as per the schedule provided by Examination department.

The ESE paper is set as per the examination policy of exam section. The subject chairman conduct the meeting (online|offline) with the papers setters. The question paper template is prepared in the meeting which is approved by the COE and BOS chairman and accordingly paper setter set the question paper. The chairman and paper setter ensures the coverage of the entire syllabus with proper weightage to each unit/module. Questions are framed at different cognitive levels (Knowledge, Understanding, Application, Analysis, and Evaluation) as per Bloom's Taxonomy. Each question is explicitly mapped with Course Outcomes (COs). One day before or on the day of the scheduled examination, one complete question paper set is randomly selected from the submitted sets to ensure fairness and confidentiality. The selected set undergoes a final quality review by the Chairman to verify correctness, clarity, coverage of syllabus, and adherence to academic standards. After the review, the selected set is finalized as the official question paper for the examination (See Figure 3.2.1).

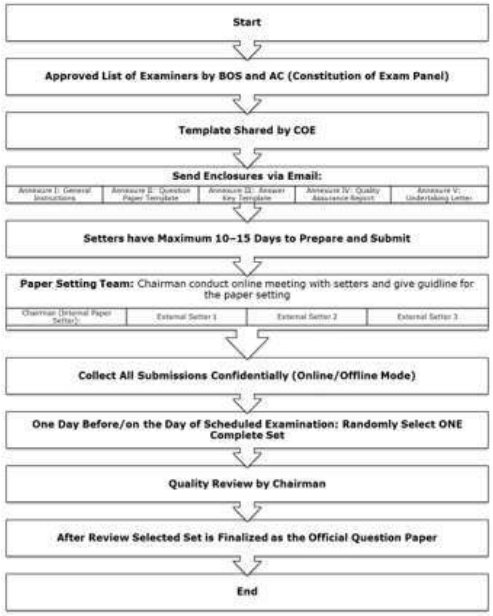
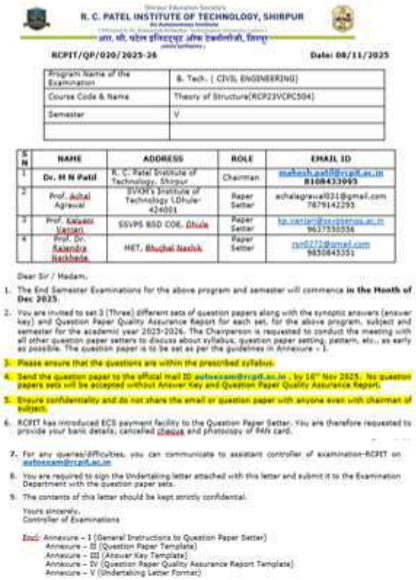


Figure 3.2.1: Process of Setting ESE Question Paper



R. C. PATEL INSTITUTE OF TECHNOLOGY, SHIRPUR

RCPIT/QP/020/2025-26 Date: 08/11/2025

Program Name of the Examination	B. Tech. (CIVIL ENGINEERING)
Course Code & Name	Theory of Structure(RCP23VCPC504)
Semester	V

SN	NAME	ADDRESS	ROLE	EMAIL ID
1	Dr. H N Patil	R. C. Patel Institute of Technology, Shirpur	Chairman	mahesh.patil@rcpit.ac.in 8108433095
2	Prof. Achal Agraval	SVKM's Institute of Technology Dhule-424001	Paper Setter	achalagraval031@gmail.com 7879142293
3	Prof. Kalyani Vaniari	SSVPS BSD COE, Dhule	Paper Setter	kp.vaniari@ssvpsengg.ac.in 9637550556
4	Prof. Dr. Rajendra Nachhade	MET, Bhujbal Nashik	Paper Setter	rpn027@gmail.com 9850845351

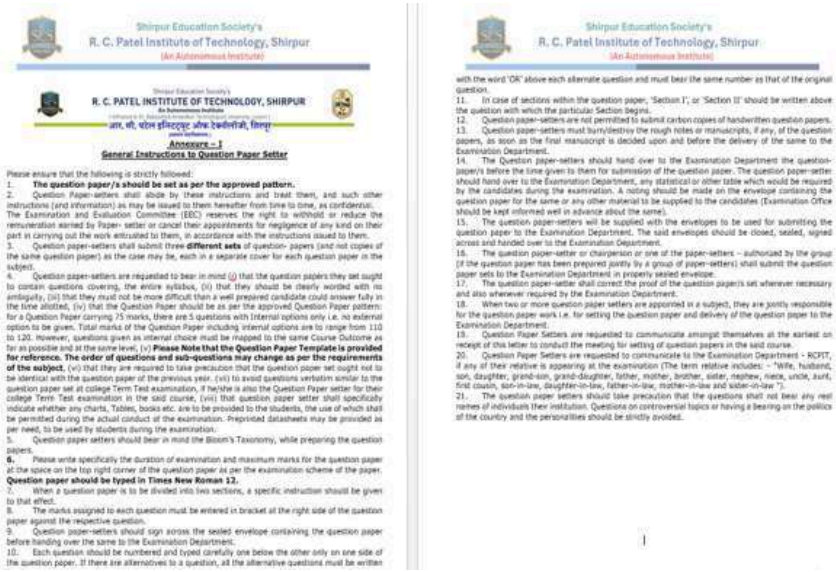
Dear Sir / Madam,

1. The End Semester Examinations for the above program and semester will commence **in the Month of Dec 2025**.
2. You are invited to set 3 (Three) different sets of question papers along with the synoptic answers (answer key) and Question Paper Quality Assurance Report for each set, for the above program, subject and semester for the academic year 2025-2026. The Chairperson is requested to conduct the meeting with all other question paper setters to discuss about syllabus, question paper setting, pattern, etc., as early as possible. The question paper is to be set as per the guidelines in Annexure – I.
3. Please ensure that the questions are within the prescribed syllabus.
4. Send the question paper to the official mail ID autoexam@rcpit.ac.in , by 16th Nov 2025. No question papers sets will be accepted without Answer Key and Question Paper Quality Assurance Report.
5. Ensure confidentiality and do not share the email or question paper with anyone even with chairman of subject.
6. RCPIT has introduced ECS payment facility to the Question Paper Setter. You are therefore requested to provide your bank details, cancelled cheque and photocopy of PAN card.
7. For any queries/difficulties, you can communicate to assistant controller of examination-RCPIT on autoexam@rcpit.ac.in
8. You are required to sign the Undertaking letter attached with this letter and submit it to the Examination Department with the question paper sets.
9. The contents of this letter should be kept strictly confidential.

Yours sincerely,
Controller of Examinations

Encl: Annexure – I (General Instructions to Question Paper Setter)
Annexure – II (Question Paper Template)
Annexure – III (Answer Key Template)
Annexure – IV (Question Paper Quality Assurance Report Template)
Annexure – V (Undertaking Letter Format)

Figure 3.2.2: Examiner Order for Paper Setting



Shirpur Education Society's
R. C. Patel Institute of Technology, Shirpur
(An Autonomous Institute)

R. C. PATEL INSTITUTE OF TECHNOLOGY, SHIRPUR

Annexure – I

General Instructions to Question Paper Setter

Please ensure that the following is strictly followed:

1. **The question paper/s should be set as per the approved pattern.**
2. Question Paper-setters shall abide by these instructions and treat them, and such other instructions (and information) as may be issued to them hereafter from time to time, as confidential. The Examination and Evaluation Committee (EEC) reserves the right to withhold or reduce the remuneration earned by Paper- setter or cancel their appointments for negligence of any kind on their part in carrying out the work entrusted to them, in accordance with the instructions issued to them.
3. Question paper-setters shall submit three **different sets** of question- papers (and not copies of the same question paper) as the case may be, each in a separate cover for each question paper in the subject.
4. Question paper-setters are requested to bear in mind (i) that the question papers they set ought to contain questions covering, the entire syllabus, (ii) that they should be clearly worded with no ambiguity, (iii) that they must not be more difficult than a well prepared candidate could answer fully in the time allotted, (iv) that the Question Paper should be as per the approved Question Paper pattern: for a Question Paper carrying 75 marks, there are 5 questions with internal options only i.e. no external option to be given. Total marks of the Question Paper including internal options are to range from 110 to 120. However, questions given as internal choice must be mapped to the same Course Outcome as far as possible and at the same level, (v) **Please Note that the Question Paper Template is provided for reference. The order of questions and sub-questions may change as per the requirements of the subject.** (vi) that they are required to take precautions that the question paper set ought not to be identical with the question paper of the previous year. (vii) to avoid questions verbatim similar to the question paper set at college Term Test examination, if he/she is also the Question Paper setter for their college Term Test examination in the said course, (viii) that question paper setter shall specifically indicate whether any charts, Tables, books etc. are to be provided to the students, the use of which shall be permitted during the actual conduct of the examination. Preprinted datasheets may be provided as per need, to be used by students during the examination.
5. Question paper setters should bear in mind the Bloom's Taxonomy, while preparing the question papers.
6. Please write specifically the duration of examination and maximum marks for the question paper at the space on the top right corner of the question paper as per the examination scheme of the paper. **Question paper should be typed in Times New Roman 12.**
7. When a question paper is to be divided into two sections, a specific instruction should be given to that effect.
8. The marks assigned to each question must be entered in bracket at the right side of the question paper against the respective question.
9. Question paper-setters should sign across the sealed envelope containing the question paper before handing over the same to the Examination Department.
10. Each question should be numbered and typed carefully one below the other only on one side of the question paper. If there are alternatives to a question, all the alternative questions must be written with the word 'OR' above each alternate question and must bear the same number as that of the original question.
11. In case of sections within the question paper, 'Section I', or 'Section II' should be written above the question with which the particular Section begins.
12. Question paper-setters are not permitted to submit carbon copies of handwritten question papers.
13. Question paper-setters must burn/destroy the rough notes or manuscripts, if any, of the question papers, as soon as the final manuscript is decided upon and before the delivery of the same to the Examination Department.
14. The Question paper-setters should hand over to the Examination Department the question-paper/s before the time given to them for submission of the question paper. The question paper-setter should hand over to the Examination Department, any statistical or other table which would be required by the candidates during the examination. A noting should be made on the envelope containing the question paper for the same or any other material to be supplied to the candidates (Examination Office should be kept informed well in advance about the same).
15. The question paper-setters will be supplied with the envelopes to be used for submitting the question paper to the Examination Department. The said envelopes should be closed, sealed, signed across and handed over to the Examination Department.
16. The question paper-setter or chairperson or one of the paper-setters – authorized by the group (if the question paper has been prepared jointly by a group of paper-setters) shall submit the question paper sets to the Examination Department in properly sealed envelope.
17. The question paper-setter shall correct the proof of the question paper/s set wherever necessary and also wherever required by the Examination Department.
18. When two or more question paper setters are appointed in a subject, they are jointly responsible for the question paper work i.e. for setting the question paper and delivery of the question paper to the Examination Department.
19. Question Paper Setters are requested to communicate amongst themselves at the earliest on receipt of this letter to conduct the meeting for setting of question papers in the said course.
20. Question Paper Setters are requested to communicate to the Examination Department – RCPIT, if any of their relative is appearing at the examination (The term relative includes: - "Wife, husband, son, daughter, grand-son, grand-daughter, father, mother, brother, sister, nephew, niece, uncle, aunt, first cousin, son-in-law, daughter-in-law, father-in-law, mother-in-law and sister-in-law ").
21. The question paper setters should take precaution that the questions shall not bear any real names of individuals their institution. Questions on controversial topics or having a bearing on the politics of the country and the personalities should be strictly avoided.

Figure 3.2.3: Instruction to Examiner

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आर. सी. पटेल इन्स्टिट्यूट ऑफ टेक्नॉलॉजी, शिरपूर

Academic Year (---------)
Year: --　　Semester: --

Program:　　**Max. Marks:**
Subject:　　**Time:**
Date:　　**Duration:**

END SEM EXAMINATION –ODD SEM V　Regular

Instructions: Candidates should read carefully the instructions printed on the question paper and on the cover page of the Answer Book, which is provided for their use.
(1) This question paper contains ..... pages.
(2) All Questions are Compulsory.
(3) All questions carry equal marks.
(4) Answer to each new question is to be started on a fresh page.
(5) Figures in the brackets on the right indicate full marks.
(6) Assume suitable data wherever required, but justify it.
(7) Draw the neat labelled diagrams, wherever necessary.

Question No.		Max. Marks	CO Mapped	Bloom's level
Q1 (a)	OR	[--] [--]		
Q1 (b)		[--]		
Q2 (a)	OR	[--] [--]		
Q2 (b)		[--]		
Q3 (a)	OR	[--] [--]		
Q3 (b)		[--]		
Q4 (a)	OR	[--] [--]		
Q4 (b)		[--]		
Q5 (a)	OR	[--] [--]		
Q5 (b)		[--]		

Figure 3.2.4: Question Paper Template

Shirpur Education Society's

R. C. PATEL INSTITUTE OF TECHNOLOGY, SHIRPUR

An Autonomous Institute

(Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere)

आर. सी. पटेल इन्स्टिट्यूट ऑफ टेक्नोलॉजी, शिरपूर

(स्वायत्त महाविद्यालय)

Academic Year (--------)

Year:-- **Semester:--**

Program: ----------

Subject: ----------

Date:

Max. Marks: ---

Time:

Duration: ----------

END SEMESTER EXAMINATION-ODD SEM- (Regular)

ANSWER KEY

Question No.		Max. Marks
Q1 (a)		[ ]
Q1 (b)		[ ]
Q2 (a)		[ ]
Q2 (b)		[ ]
Q3 (a)		[ ]
Q3 (b)		[ ]
Q4 (a)		[ ]
Q4 (b)		[ ]
Q5 (a)		[ ]
Q5 (b)		[ ]

Figure 3.2.5: Answer Key Template

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(स्वायत्त महाविद्यालय)

Academic Year (---------)
Year: -- Semester: ---
Program: ----------
Max. Marks:----------
Subject: ----------
Time:
Date: **Duration: -------**

REGULAR EXAMINATION

QUESTION PAPER QUALITY ASSURANCE REPORT

Course Outcomes: On successful completion of this course, student should be able to:
1.
2.
3.
4.
5.
6.

Sr. No.	Question Number	CO Mapped (As per Course)	CO correlation Level Expected with the Question	Blooms' Level Expected from the Question
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

Figure 3.2.6: Quality Assurance Report

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Annexure – V

P.S.: This undertaking is to be duly signed and submitted to the examination department along with the required question paper set.

To
The Controller of Examinations
RCPIT (Autonomous)

Undertaking

I, Dr. / Ms. / Mr. _____, hereby confirm following conditions, while submitting Question Paper set/s for Final Examinations / Re-examinations.

- The Question Paper set/s is/are submitted to the Examination Department directly, in a sealed envelope with complete details, duly signed by me through hand delivery / courier and not through any other person from other department or by e-mail.
- The question paper/s is/are not based on readily available Question Bank /Handouts.
- The question paper/s is/are prepared in a single copy and no other duplicate manuscript/s either in soft copy or in hard copy is/are retained by me.
- I have taken utmost care to maintain confidentiality and no part of the question paper has been shared by me with anyone.
- None of my relatives are either studying in or appearing for the examination for which question paper has been set by me.

I have carefully gone through the above terms and have strictly abided by the same.

Signature with date:	
Name of the Question Paper Setter:	
Contact No. & Email ID of the Question Paper Setter	
Course Name	
Program and Semester	

Figure 3.2.7: Undertaking

A.2. Process for Evaluation of ESE Answer Sheets

- **Evaluation of Answer Sheets:** Answer sheets are evaluated using a detailed marking scheme/model solution to ensure fairness, uniformity, and transparency in assessment.
- **Digital Evaluation System:** Institute follows a fully online digital evaluation process through the ERP Platform. After the End Semester Examination (ESE), answer sheets are scanned and uploaded along with the corresponding question paper and model answer key.
- **Faculty Allocation and Appointment Orders:** The examination department manages the course-wise allocation of scanned answer sheets, ensuring a fair and balanced distribution of evaluation work among faculty members. The COE also issues an Office Order appointing evaluators and moderators.
- **Moderation:** Moderation of answer sheets is done through internal/external evaluators to maintain authenticity, consistency, accuracy, and objectivity in the evaluation process.

B. Quality of questions, appropriateness of mapping with COs

The institute ensures that the ESE question papers maintain high academic standards and effectively assess the Course Outcomes through a well-defined process.

- Questions are framed to cover different cognitive levels of Bloom's Taxonomy.
- Each question is mapped with the corresponding CO, ensuring that all COs of the course are adequately assessed.
- The question papers blueprint ensures balanced coverage of syllabus units and appropriate distribution of marks across COs.
- The reviewer verifies the accuracy, clarity, difficulty level, and CO mapping of the questions before sealing the paper, thereby maintaining the overall quality of the examination.
- An external examiner is appointed by COE to review the question papers for quality, clarity, difficulty level and COs.

C. Transparency of post evaluation process

The institute follows a transparent post-evaluation process to ensure fairness and accuracy in assessment. After declaration of results, students are provided the facility to apply for rechecking or re-evaluation of their answer sheets through the examination section. Students can request verification of total marks, evaluation correctness, or reassessment as per the institute's examination regulations. Any corrections identified during this process are updated in the final results. This mechanism ensures transparency, accountability, and confidence in the evaluation system.

3.3 Evaluation of Laboratory Work and Workshop (Continuous and SEE) (10) Total Marks 10.00

Institute Marks : 10.00

Laboratory courses form a critical component of the curriculum, designed to bridge theoretical learning with practical application. The evaluation process ensures that students are not only able to perform experiments and technical tasks but also develop skills such as teamwork, communication, innovation, and problem-solving. Both Continuous Assessment (CA) and End Semester Examination (ESE) are used for comprehensive evaluation.

A. Evaluation of experiments conducted in workshops/laboratories

The evaluation of laboratory courses consist continuous assessment (CA) and laboratory ESE.

A.1 Continuous Assessment (CA) of Laboratory

The CA evaluation of laboratory course is based on following

- **Performance:** Evaluation based on accuracy, systematic procedure, and ability to troubleshoot errors.
- **Preparation of Journal/Practical Record:** Students must maintain journals with well-documented observations, results, and inferences. Course faculty provides a standard lab manual/SOP to guide students in completing their journal submissions.
- **Use of Virtual Laboratory V-Lab:** For selected courses, practical performance is assessed using IIT Bombay's Virtual Laboratory platforms that provide a simulated environment for conducting experiments and analyzing results. This approach allows students to perform experiments beyond physical lab constraints, with evaluation based on procedure execution, observations, and result interpretation.
- **Viva-Voce:** Tests conceptual understanding, clarity of theory, and ability to relate practical outcomes with theoretical principles.
- **Case Study/ Assignment:** Course-specific case studies or assignments are assigned to students as an additional practical component. Students are required to carry out the assigned work either individually or in groups and submit a detailed report based on their analysis and findings for evaluation.

A.2 Evaluation of Laboratory ESE

The ESE for laboratory courses is designed to comprehensively assess students' practical skills and applied knowledge. Two examiners, appointed by the Controller of Examinations (COE), independently evaluate each student's performance, and the final marks are awarded based on their combined assessment. During the examination, students are assigned an experiment or problem to perform independently within a specified time. In addition, a viva-voce is conducted to evaluate students' conceptual understanding and problem-solving approach.

B. Use of Rubrics for assessing student performance with relevance to COs/POs

Rubrics are used to evaluate laboratory performance in a structured and objective manner, ensuring that assessment criteria are clearly defined. The rubrics are defined separately for CA and ESE evaluation of Laboratory course.

B.1. Rubrics for Laboratory CA Evaluation

- Marks are awarded experiment-wise and cumulative performance is calculated.
- Rubric sheets, along with evaluated journals, are preserved in Course Files.
- Each experiment is assessed for fifteen marks according to the rubrics provided in Table 3.3.1.
- An additional component in the form of a case study/assignment for each course is evaluated for ten marks.

Table 3.3.1: Rubrics for Laboratory CA Evaluation

Rubrics	Maximum Marks (If V-Lab available)	Maximum Marks (If V-Lab Not Available)
Performance	3	5
Journal Submission	5	5
Virtual Lab (if applicable)	2	--
Viva-Voce	5	5

Case Study/ Assignment	10	10
Total Marks	25	25

B.2. Rubrics for Laboratory ESE Evaluation

- Marks are awarded by examiners based on performance and viva-voce.
- Marks are sealed and submitted to COE.

Table 3.3.2: Rubrics for Laboratory ESE Evaluation

Rubrics	Maximum Marks
Performance	15 | 30
Viva-Voce	10 | 20
Total Marks	**25 |50**

B.3. Relevance to COs/POs

The laboratory assessment process is aligned with defined Course Outcomes (COs), Program Outcomes (POs) and Program Specific Outcomes (PSOs) to ensure effective attainment of learning objectives. Each laboratory activity, including experiment execution, journal maintenance, viva-voce, virtual lab work, and case studies, is mapped to relevant COs. Performance and practical execution support the application of engineering knowledge and problem-solving skills, while documentation and viva-voce enhance communication and conceptual understanding. Case studies and assignments promote teamwork and independent learning. Rubrics-based evaluation enables objective measurement of CO attainment, which is further used for CO-PO attainment analysis.

3.4 Evaluation of Industrial Training/ Internship (Continuous and SEE) (10) Total Marks 10.00

Institute Marks : 10.00

The internship process at institute is designed to ensure a smooth and systematic training and placement experience for students. Internships provide valuable educational and career development opportunities by allowing students to gain practical experience in their field of study. In Semester–VIII, students have two options for internships: Industry Internship and In-house Internship which contribute 10 credits.

A. Industry Internship

- The Training and Placement Department arranges internships for students in industries/organizations after Semester VII.
- The Training and Placement Department has established Memoranda of Understanding (MoUs) with reputed industries to enhance industry readiness among students. These MoUs facilitate structured industry-oriented training programs, including technical skill development, soft-skill enhancement, internships, workshops, and expert sessions conducted by industry professionals. Such collaborations bridge the gap between academic learning and industrial expectations, thereby improving students' employability, practical exposure, and professional competence in alignment with OBE requirements.
- Students may also apply individually, after obtaining prior permission and approval from the Training and Placement (T&P) Department. Individual internships must follow these guidelines:

1. Only internships approved by the T&P Department will be considered.
2. Internship duration must be minimum 12 weeks.
3. Prior permission from the T&P Department is required before pursuing any independent internship.
4. Every student must maintain a file with documentary proof of activities completed.
5. Each student will be monitored periodically (onsite/online) by the Industry Mentor, Faculty Mentor, and Department T&P Coordinator (TPC) during the internship period.
6. Withdrawal from the internship is allowed only within two weeks of joining. Such students must continue Semester VIII academic activities along with an in-house internship.

A.1. Internship Report Guidelines

· Students should prepare a comprehensive report summarizing observations and learnings.

· Guidance can be sought from the Industrial Supervisor, Faculty Mentor, or department TPC for topic selection.

· Evaluation will consider:

- Adequacy and purposefulness of the write-up.
- Variety and relevance of learning experiences.
- Practical applications and connections with theories/concepts from Semester I–VII.

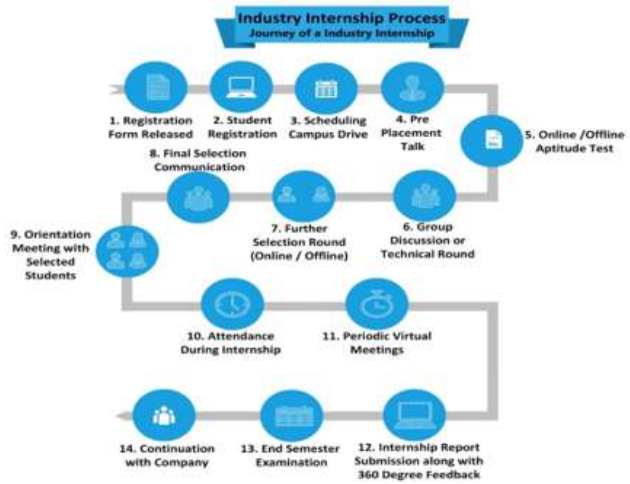

Figure 3.4.1: Flowchart of Industry Internship Process

A.2. Continuous Assessment for Industry Internship

The Continuous Assessment of the internship is intended to monitor and support the student's overall learning and development throughout the internship period. A minimum of two monitoring and evaluation assessments are performed during the internship. It focuses on evaluating the student's engagement with the assigned tasks, the practical experience gained, and the progress made in achieving the objectives of the internship. This assessment helps ensure that students are actively applying their knowledge, developing relevant skills, and demonstrating professional growth in a real-world setting. It also encourages students to document their work, reflect on their learning, and communicate their experiences effectively. Overall, continuous assessment provides a structured way to guide and enhance the student's internship journey. Following are the Rubrics of Continuous Assessment of Industry Internship.

Table 3.4.1: Continuous Assessment Rubrics for Industry Internship

Rubrics	Marks
Internship Objectives and Goals	30
Internship Experience and Skills Gained/Enhanced	30
Professional Development and Growth	30
Internship Report	30
Presentation	30
Total	**150**

A.3. End Semester Examination (ESE) Evaluation

The ESE aims to evaluate the overall internship experience, ensuring that students have effectively applied theoretical knowledge in a practical setting and demonstrated professional growth. Key aspects of the process include:

A.3.1. Appointment of Examiners

Two examiners, appointed by the Controller of Examinations (COE), independently evaluate each student's performance, and the final marks are awarded based on their combined assessment.

A.3.2. Standardized Evaluation Scheme

- Uniform rubrics are used across all students to ensure fairness, consistency, and transparency.
- The evaluation emphasizes practical engagement, skill development, and professional growth, alongside the ability to reflect and report on learning outcomes.
- The rubrics and Evaluation criterion is as given below:

Table 3.4.2: Evaluation Criteria of Industry Internship ESE

Rubrics	Marks
Internship Objectives and Goals	30
Internship Experience and Skills Gained/Enhanced	30
Professional Development and Growth	30
Internship Report	30
Presentation	30
Total	**150**

This structured evaluation ensures that students gain maximum benefit from their industry exposure and are well-prepared for future professional challenges.

B. In-house Internship

The in-house internship provides students with research-oriented opportunities to cultivate a research mind-set. It can either extend a project completed in Semester VI and VII (Project Stage-I and II) or involve new research objectives provided by the department or faculty mentor.

Guidelines

1. The in-house internship can be pursued individually or in groups.
2. Maximum group size is limited to four students.

3. If extending a Stage II project, outcomes should include product development, technology transfer, patents/copyrights, or at least one research publication.
4. The work must be submitted to the department as a hardbound and soft copy report.

B.1. Continuous Assessment for In-house Internship

Each group must maintain a logbook documenting all work carried out during the internship (see 3.4.3). Students are required to present their weekly progress to their mentor, demonstrating the tasks completed and milestones achieved.

Table 3.4.3 Logbook Format

Sr. No.	Week (Start – End)	Work Done	Mentor Sign	Coordinator Sign
1				

The internship performance is reviewed twice during the semester by a panel of faculty members, which evaluates the student's progress, engagement, and overall learning.

First Review: At this stage, at least 40% of the work should be completed. The evaluation is based on rubrics detailed in Table 3.4.4:

Table 3.4.4 Rubrics for First Review

Rubrics	Marks
Topic Identification and Validation	20
Literature Survey	20
Problem Definition	20
Objectives	15
Total	**75**

Second Review: The remaining 60% of work should be completed by the second review. The evaluation considers:

Table 3.4.5 Rubrics for Second Review

Rubrics	Marks
Implementation	20
Publications	20
Report	20
Presentation	15
Total	**75**

B.2. End Semester Examination (ESE) Evaluation

The End Semester Examination (ESE) serves as the final stage of evaluation for the In-house Internship. It aims to assess the student's overall learning, technical contributions, and ability to apply theoretical knowledge to practical or research-oriented problems. The evaluation process is designed to ensure fairness, transparency, and a holistic assessment of both the process and outcomes of the internship.

B.2.1. Appointment of Examiners

Two examiners, appointed by the Controller of Examinations (COE), independently evaluate each student's performance, and the final marks are awarded based on their combined assessment.

B.2.2. Standardized Evaluation Scheme

- A uniform evaluation framework is adopted across all students to maintain consistency and objectivity in the assessment process.
- The evaluation emphasizes the quality of research or implementation, professional development, and the ability to communicate findings effectively through reports and presentations.
- Equal importance is given to both technical execution and academic rigor demonstrated during the internship.

- The rubrics and Evaluation criterion is as given below:

Table 3.4.6: Rubrics for ESE

Rubrics	Marks
Topic Identification and Validation	30
Literature Survey and Problem Definition	30
Objectives and Implementation / Product Development	30
Presentation	30
Report, Publications / Patent / IPR Documents	30
Total	**150**

C. Relevance to CO/PO

The internship program supports the attainment of Course Outcomes (COs) by enabling students to apply theoretical knowledge to real-world industrial or research problems through industry and in-house internships. These internships help students develop practical skills, professional competence, problem-solving ability, and self-directed learning habits, thereby bridging the gap between academic learning and industry requirements.

The evaluation rubrics for industrial training/internships are aligned with relevant Program Outcomes (POs) by assessing students' ability to identify and analyze real-world problems, conduct literature surveys, and define objectives, which relate to problem analysis (PO2) and investigation of complex problems (PO4). Implementation activities evaluate students' application of engineering knowledge (PO1) and Modern tool usage (PO5). Furthermore, the preparation of reports, presentations, and documentation of publications, patents, or IPRs assesses students' communication skills (PO10) and their ability to present technical work effectively.

Exposure to practical environments, mentoring, and independent learning encourages students to continuously update their knowledge and adapt to evolving professional requirements. Overall, this activity is strongly mapped to PO-12 (Lifelong Learning), as it motivates students to continuously acquire new skills and knowledge beyond the classroom.

3.5 Evaluation of Projects (20) Total Marks 20.00

Institute Marks : 20.00

According to the curriculum, the Capstone Project for final-year students is divided into two stages: Project Stage I (Sem-6) and Project Stage II (Sem-7). The following table outlines the activities to be completed in each stage as per the curriculum.

Table No.3.5.1: Project Stages and Detail Description

Project Stage	Activities / Description
Project Stage–I: [Sem-VI] Problem Identification & System Design	• Preparation of a concise abstract and detailed introduction covering the problem domain, objectives, scope, relevance, and a comprehensive literature review of existing systems. • Design of the proposed system detailing architecture, and proposed methodology. • Development of a clear Stage–II implementation plan including selected tools and an execution timeline.
Project Stage–II: [Sem-VII] System Development and Evaluation	• Implementation of the proposed system using appropriate tools and platforms. • Testing, validation, and performance evaluation with comparative analysis. • Conclusion and future scope identification based on results. • Preparation and submission of a project report.

The Department of Civil Engineering follows the procedure as shown in Figure 3.5.1 for Identification of projects and allocation methodology to faculty members.

A. Identification of Projects and Allocation Methodology

The project development process at R. C. Patel Institute of Technology, Shirpur is systematically designed in line with the OBE framework to ensure effective planning, execution and evaluation of student projects.

The Head of the Department appoints a Project Coordinator to systematically manage, supervise, and monitor all project-related activities. Students are then required to form project groups and submit three proposed project topics along with concise abstracts for review, ensuring appropriate evaluation and approval before project initiation.

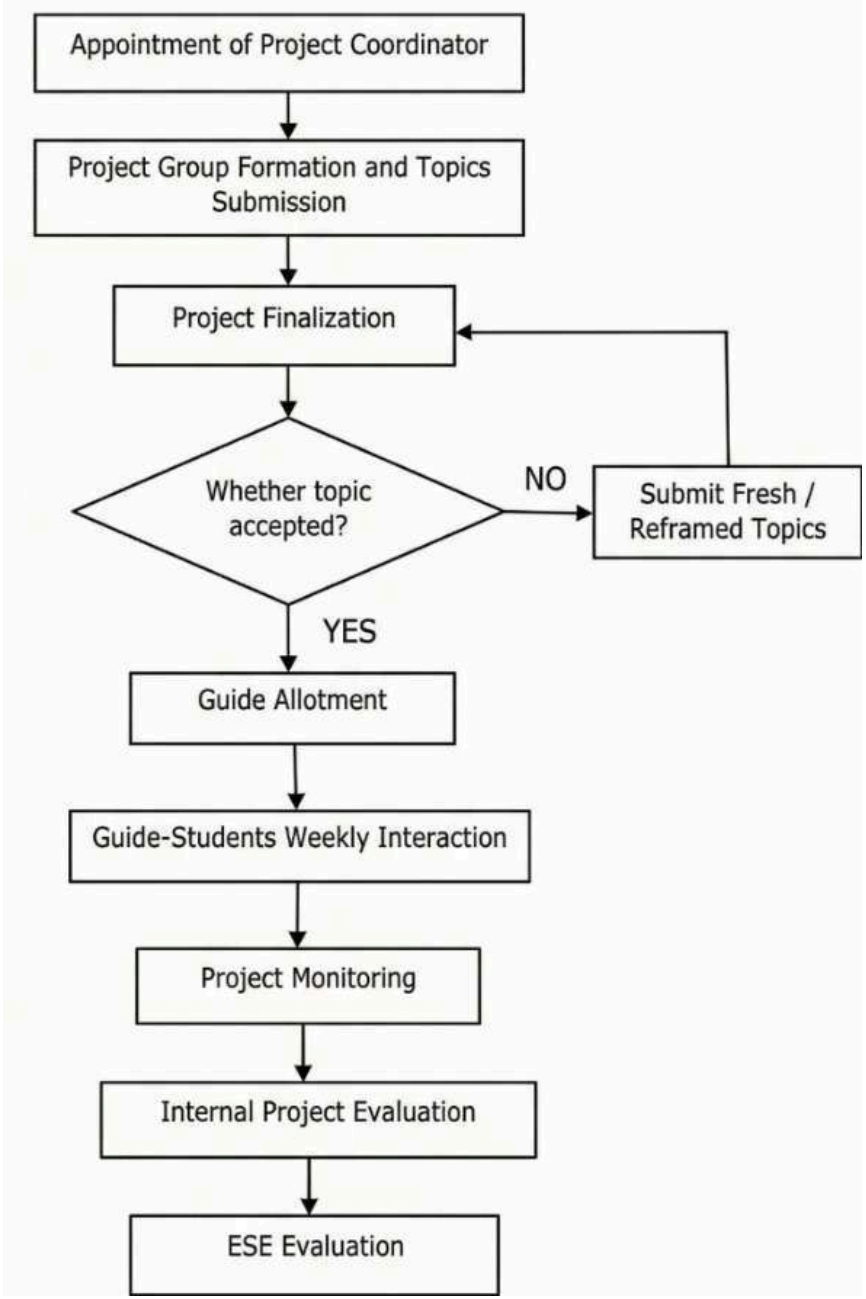

Figure 3.5.1: Process Flow for Project Topic Approval, Execution and Evaluation

- **Topic Finalization by Department:** Proposed project topics are rigorously evaluated based on relevance, innovation, technical depth. Topics not meeting the criteria are refined and resubmitted, while approved topics proceed to execution.
- **Guide Allocation:** Department Head and Project Coordinator allocate faculty guides based on domain expertise, ensuring effective technical guidance, mentoring, and outcome-oriented supervision.

- **Weekly Interaction and Monitoring:** Structured weekly meetings during scheduled project hours facilitate continuous progress monitoring, technical discussion, and timely resolution of challenges.
- **Project Review and Internal Evaluation:** Periodic reviews during regular monitoring, presentations, and internal assessments are conducted to evaluate innovation, methodology, implementation quality.
- **Final Evaluation by External Examiner:** The project is assessed by an external expert using predefined rubrics, focusing on technical competence, originality.

B. Project Monitoring and Assessment

The project progress is systematically monitored through three monitoring stages. Each stage evaluates predefined activities such as documentation, literature review, requirement analysis, planning, implementation, and Testing. Progress is assessed using clear parameters (Complete/Incomplete) to ensure timely execution, quality compliance, and readiness for subsequent project phases shown in Table 3.5.2.

Table No.3.5.2: Continuous Monitoring of Project Stage-I (Semester VI)

Monitoring Stage	Activities
Monitoring –I (Project Initiation and Study)	• Status of log book up to Monitoring–I • Introduction and problem definition with objectives • Literature review and analysis of existing systems
Monitoring –II (System Design and Partial Implementation)	• Status of log book up to Monitoring–II • Designing system block diagram / architecture • Implementation plan for Project Stage–II
Monitoring –III (Implementation, Testing and Documentation)	• Status of log book up to Monitoring–III • Partial implementation (20–25%) • Submission of soft copy of Project Stage-I report

Each project is assessed through CA and graded based on project quality and consistent work progress. Table 3.5.3 presents the continuous assessment rubrics for Project Stage-I.

Table No.3.5.3: Internal Continuous Assessment Rubrics for Project Stage-I

Attendance	Logbook Maintenance	Literature survey	Depth of Understanding	Report	Total
05	05	05	05	05	25

Final Project demonstration and the report is evaluated by a panel of external examiners. ESE evaluation for Project Stage–I (Semester VI) is structured to assess multiple aspects of the project, as outlined in Table 3.5.4.

Table No.3.5.4: ESE Assessment Rubrics for Project Stage-I

Project Topic Selection	Design / Simulation / Logic	Programming	Result	Presentation	Total
05	05	05	05	05	25

- Project stage–I is continued as Project stage–II in Semester VII, focusing on completing the remaining implementation as per the approved abstract shown in Table 3.5.5.
- Students plan and execute the project systematically to ensure completion within the semester timeline.

Table No.3.5.5: Continuous Monitoring of Project Stage-II (Semester VII)

Monitoring Stage	Activities
Monitoring –I	• Verification of log book up to Monitoring–I • System Implementation up to 40%
Monitoring –II	• Verification of log book up to Monitoring–II • System Implementation up to 70%
Monitoring –III	• Verification of log book up to Monitoring–III • System Implementation 100% • Submission of complete project report

- Project stage –II emphasizes design, fabrication, experimentation, testing, data analysis, and documentation. The CA and ESE Assessment Rubrics for Project Stage-II are shown in Table 3.5.6 and Table 3.5.7 respectively.

Table No.3.5.6: Internal Continuous Assessment Rubrics for Project Stage-II

Attendance	Logbook Maintenance	Implementation	Testing	Report	Total
05	05	05	05	05	25

Table No.3.5.7: ESE Assessment Rubrics for Project Stage-II

Depth of Understanding	Implementation	Testing	Report	Presentation	Total
05	05	05	05	05	25

- Each group maintains a project log book and submits a hard-bound project report at the end of Semester VII.
- Relevant domain knowledge beyond the core syllabus is applied for effective project implementation.

C. Capstone Project Timeline

A well-defined project timeline ensures systematic planning, timely execution and effective monitoring of Project Stage–I and Stage–II as elaborated in Table 3.5.8 and Table 3.5.9 respectively.

Table No.3.5.8: Timeline for Project Stage –I (Semester-VI)

Sr. No.	Activity	Tentative Period
1	Project registration and submission of three probable topics with abstract	Third week of January
2	Scrutiny, topic finalization, and guide allocation by Head of Department and project coordinator.	Last week of January
3	Introduction, literature review, and requirement analysis	Second week of February
4	Project planning, scheduling	Last week of February
5	Monitoring–I of Project Stage-I	First week of March
6	System design and architecture	Second week of March
7	Implementation plan for Project Stage-II	Third week of March
8	Monitoring–II of Project Stage-I	First week of April
9	Completion of Project Stage-I with report submission (as per guide approval)	Second week of April
10	Monitoring–III of Project Stage-I	First week of May

Table No.3.5.9: Timeline for Project Stage -II (Semester-VII)

Sr. No.	Activity	Tentative Period
1	System Implementation up to 40%.	Third Week of August
2	Monitoring–I of Project Stage-II	Second week of September
3	System Implementation up to 70%.	Third week of September
4	Monitoring–II of Project Stage-II	Second week of October
5	System Implementation up to 100%.	Last week of October
6.	Monitoring–II of Project Stage-II	First week of November
7	Completion of Project Stage-II along with the report in prescribed format by the approval of concerned guide	Third week of November

It facilitates structured progress from topic selection to implementation and evaluation, promotes optimal utilization of time and resources, enhances coordination between students and guides, and supports continuous assessment.

D. Relevance of Project Evaluation Rubrics to POs

The evaluation of student projects is carried out using well-defined rubrics during Project Stage–I and Project Stage–II, ensuring systematic assessment of technical complexity and professional competencies. The rubrics evaluate aspects such as problem identification, literature survey, objective formulation, design methodology, implementation, testing, and documentation, which reflect the complexity, feasibility, cost considerations, environmental relevance, and sustainability of the proposed solution. In addition, the evaluation framework assesses teamwork, communication, and project management practices through parameters such as group collaboration, periodic progress reviews, maintenance of project logbooks, technical report writing, and final project presentations. This structured rubric-based evaluation ensures that students effectively plan, execute, and communicate engineering projects while applying appropriate project management principles and responsible engineering practices.

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

Total Marks 10.00

Institute Marks : 10.00

The Civil Engineering Department is committed to contributing toward the achievement of the United Nations Sustainable Development Goals (SDGs) through education, research, innovation, and social outreach. Civil engineers play a vital role in developing various software's in the form of applications and websites, while integrating them with different SDGs.

Faculty mentor students to identify real-world problems aligned with global goals such as Good Health and Well-being, Quality Education, Decent Work and Economic Growth, Industry Innovation, Sustainable Cities, and Peace & Justice.

Students work in teams under the mentorship of faculty members. Project proposals are reviewed to ensure relevance to one or more SDGs. Periodic reviews, demonstrations, and evaluations are conducted to assess technical quality, innovation, and societal impact. These activities align with the following SDGs:

A. Evidence of Addressing Sustainable Development Goals (SDGs) in Civil Engineering Department

Table 3.6.1: Evidence of Addressing Sustainable Development Goals (SDGs)

Sr. No.	SDG Goal	Evidence / Departmental Activities
1	**SDG 2 – Zero Hunger** End hunger, achieve food security and improved nutrition, and promote sustainable agriculture.	• Student projects on sustainable irrigation systems, rainwater harvesting, and efficient water management for agriculture. • Design and analysis of rural infrastructure supporting agricultural productivity and food supply chains.
2	**SDG 3 – Good Health and Well-being** Ensure healthy lives and promote well-being for all at all ages.	• Projects focusing on safe drinking water supply, sanitation systems, and wastewater treatment. • Incorporation of environmental engineering practices to reduce health risks from pollution and poor infrastructure.
3	**SDG 4 – Quality Education** Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.	• Implementation of Outcome-Based Education (OBE) practices and use of digital learning platforms. • Conduct of value-added courses, field visits, workshops, internships, and certification programs to enhance technical skills and employability.
4	**SDG 8 – Decent Work and Economic Growth** Promote sustained, inclusive, and sustainable economic growth and productive employment.	• Skill development in construction planning, project management, estimation, and modern construction techniques. • Promotion of entrepreneurship through student start-ups, and industry-oriented project work.
5	**SDG 9 – Industry, Innovation, and Infrastructure** Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation.	• Faculty and students engaged in research publications, patents, and software/product development. • Encouragement of innovation-driven projects and participation in national-level technical competitions.

Sr. No.	SDG Goal	Evidence / Departmental Activities
6	**SDG 10 – Reduced Inequalities** Reduce inequality within and among countries.	• Design of affordable housing, rural roads, and basic infrastructure for underprivileged communities. • Projects addressing accessibility, universal design, and inclusive infrastructure planning.
7	**SDG 11 – Sustainable Cities and Communities** Make cities and human settlements inclusive, safe, resilient, and sustainable.	• Student projects on smart transportation systems, urban drainage, solid waste management, and sustainable urban planning. • Application of GIS, remote sensing, and sustainable design principles for urban development.
8	**SDG 12 – Responsible Consumption and Production** Ensure sustainable consumption and production patterns.	• Promotion of sustainable construction materials, recycling of construction waste, and resource-efficient design. • Awareness activities on life-cycle cost analysis and sustainable construction practices.
9	**SDG 13 – Climate Action** Take urgent action to combat climate change and its impacts.	• Student and faculty projects on environmental monitoring, pollution analysis, and carbon footprint reduction. • Awareness activities on sustainable development and eco-friendly computing practices.
10	**SDG 16 – Peace, Justice, and Strong Institutions** Promote peaceful and inclusive societies and build effective, accountable institutions.	• Emphasis on ethical engineering practices, safety standards, and regulatory compliance • Projects related to transparent construction practices, quality assurance, and sustainable governance of infrastructure systems.
11	**SDG 17-Partnerships for the Goals** Strengthen the means of implementation and revitalize the global partnership for sustainable development.	• Student projects focus on developing digital platforms and management systems for planning, design, construction, and maintenance of civil engineering projects, enabling coordination among engineers, contractors, clients, and authorities. • Development of integrated systems using BIM tools, GIS platforms, project management software, and cloud-based services to support industry–academia collaboration and smart infrastructure development. • Capstone projects emphasize real-time monitoring, data sharing, and interoperability among agencies for efficient execution, quality control, and sustainable infrastructure management.

Table 3.6.2. Project carried out in the session 2023-24

Sr. No.	Project Title	Related SDGs	Link with SDG Goals
1	An Experimental Study of Waste Glass as Partial Replacement of Fine Aggregate in Concrete	SDG 9, SDG 12, SDG 13	Promotes sustainable construction materials, resource efficiency, and reduction of construction waste and carbon footprint.
2	Comprehensive Analysis of Recycled Coarse Aggregate in Concrete	SDG 9, SDG 12	Encourages reuse of construction and demolition waste for sustainable infrastructure development.
3	Comprehensive Analysis of Recycled Coarse Aggregate in Concrete	SDG 9, SDG 12	Supports responsible consumption of natural resources through recycled materials in concrete.
4	Experimental Investigation of Load Bearing Capacity of Soil Using C Language	SDG 9	Enhances infrastructure design accuracy and innovation through computational analysis.
5	Flood Modelling of River	SDG 11, SDG 13	Supports climate-resilient infrastructure and disaster risk reduction for sustainable communities.
6	Influence of Target Strength in Recycled Aggregate Concrete Mix Design – Integrated Approach	SDG 9, SDG 12	Improves performance of sustainable concrete for resilient infrastructure.
7	Partial Replacement of Concrete by Saw Dust	SDG 12, SDG 13	Utilizes industrial waste for eco-friendly construction and emission reduction.
8	Rural Development Applying Various Schemes for Development of Village	SDG 1, SDG 8, SDG 11	Supports inclusive rural infrastructure, livelihood generation, and sustainable community development.
9	Solid Waste Management Scenario in North Maharashtra Region	SDG 11, SDG 12	Promotes sustainable waste management and cleaner urban and rural settlements.
10	Study of Properties of Bitumen Plant Waste Dust and Its Utilization	SDG 9, SDG 12	Encourages reuse of industrial waste in road construction for sustainable infrastructure.
11	Properties and Performance of Plastic Coated Aggregates for Sustainable Construction	SDG 9, SDG 12, SDG 13	Reduces plastic waste and enhances durability of infrastructure.
12	Water Quality Index of Tapi River in North Maharashtra Region	SDG 6, SDG 3	Supports monitoring of water quality to ensure safe water and public health.
13	Zero Liquid Discharge (ZLD)	SDG 6, SDG 12	Promotes efficient water use and elimination of liquid waste discharge.

Table 3.6.3. Project carried out in the session 2024-25

Sr. No.	Project Title	Related SDGs	Link with SDG Goals
1	Analysis and Design of Earthquake-Resistant Multistoreyed Residential Building	SDG 9, SDG 11	Enhances safety, resilience, and sustainability of urban infrastructure.
2	Comparative Study of IS 10262:2009 vs IS 10262:2019 with High-Grade Concrete	SDG 9	Improves construction quality and promotes updated, efficient design practices.

Sr. No.	Project Title	Related SDGs	Link with SDG Goals
3	Eco Mix: Sustainable Concrete Solution	SDG 9, SDG 12, SDG 13	Encourages low-carbon, resource-efficient construction materials.
4	Efficient Intersection Management: Traffic Light-Free Approach for Karwand Naka	SDG 11, SDG 13	Improves traffic efficiency, safety, and reduction in fuel consumption and emissions.
5	Enhancing Durability of Recycled Aggregate Concrete Using Mineral Admixtures	SDG 9, SDG 12	Promotes durable and sustainable infrastructure using recycled materials.
6	Enhancing Durability of Recycled Aggregate Concrete Using Mineral Admixtures	SDG 9, SDG 12	Supports circular economy in construction practices.
7	Experimental Study on Partial Replacement of Cement with Glass Waste Powder and Admixtures	SDG 9, SDG 12, SDG 13	Reduces cement consumption and carbon emissions through waste utilization.
8	Impact of Advanced Fiber Reinforcement on Mechanical Properties of Ferrocement	SDG 9	Improves strength and longevity of construction materials for resilient infrastructure.
9	Planning, Designing, and Scheduling Using BIM	SDG 9, SDG 11	Enhances efficiency, coordination, and sustainability in infrastructure planning.
10	Study of Potable Water Supply in Rural Area – Village Bhorkheda	SDG 6, SDG 3	Ensures access to safe drinking water and improved rural health conditions.
11	Potential Use of Wastewater Treatment Plant Waste as Sustainable Construction Material	SDG 9, SDG 12	Encourages reuse of treatment plant by-products for sustainable infrastructure development.

B. Published Research Supporting SDGs in Department of Civil Engineering

The Civil Engineering Department demonstrates a strong commitment to research that addresses real-world infrastructure, environmental, and societal challenges while aligning with key Sustainable Development Goals (SDGs). Faculty and student research publications focus on sustainable planning, design, construction, and management practices mapped to the United Nations SDGs. Studies in sustainable materials, smart infrastructure, and construction technologies support SDG 9 (Industry, Innovation and Infrastructure), while research in water resources engineering, irrigation, and environmental sanitation contributes to SDG 2 (Zero Hunger) and SDG 3 (Good Health and Well-being). Urban planning, transportation systems, and resilient infrastructure research align with SDG 11 (Sustainable Cities and Communities), whereas investigations in waste management, resource efficiency, and environmental impact assessment support SDG 12 (Responsible Consumption and Production) and SDG 13 (Climate Action). These research initiatives reflect the department's commitment to sustainable development, innovation, and effective solutions to contemporary civil engineering challenges.

Table 3.6.4: Paper published in the session 2023-24

Paper Title	Name of the Publisher	Name of the Journal / Conference	Volume & Issue	SDG Goal
Comprehensive Analysis Of Recycled Coarse Aggregate In Concrete	IJCRT ISSN: 2320-2882	International Journal of Creative Research Thoughts	Volume 12, Issue 5 May 2024	SDG 12 – Responsible Consumption and Production
Impact Of Target Strength On RCA Using Concrete Mix Design	IJCRT ISSN: 2320-2882	International Journal of Creative Research Thoughts	Volume 12, Issue 5 May 2024	SDG 9 – Industry, Innovation and Infrastructure

Table 3.6.5: Paper published in the session 2024-25

Paper Title	Name of the Publisher	Name of the Journal / Conference	Volume & Issue	SDG Goal
The Potential Use of Waste from Sewage Treatment Plant as a Sustainable Material In The Construction Industry	IJRAR.org	International Journal of Research and Analytical Reviews (IJRAR)	April 2025, Volume 12, Issue 2	SDG 11 – Sustainable Cities and Communities
Enhancing Concrete Performance : A Review of Admixtures	IJARSCT ISSN: 2581-9429	International Journal of Advanced Research in Science, Communication and Technology	Volume 5, Issue 2, May 2025	SDG 9 – Industry, Innovation and Infrastructure
Planning, Designing, and Sanctioning Process in Construction: Challenges and Role of BIM	IJARSCT ISSN: 2581-9429	International Journal of Advanced Research in Science, Communication and Technology	Volume 5, Issue 2, May 2025	SDG 11 – Sustainable Cities and Communities
Water Distribution Network in Bhorkheda Village, District Dhule, Maharashtra, India): An Analysis of Infrastructure, Efficiency, and Sustainable Optimization Strategies	2321-9653;	International Journal for Research in Applied Science & Engineering Technology (IJRASET)	Volume 13,issue 5, May 2024	SDG 6 – Clean Water and Sanitation

C. Student-Led Initiatives for SDG Awareness and Skill Development beyond OBE

The Civil Engineering Department promotes engagement with the United Nations Sustainable Development Goals (SDGs) through student-led technical activities organized under departmental technical forums and events such as Converges 2025. These activities provide experiential learning opportunities related to structural design, construction practices, sustainable infrastructure, and engineering problem-solving beyond the formal Outcome Based Education (OBE) curriculum.

Technical competitions such as Bridge Making Competition and Boat Float Competition enable students to apply fundamental civil engineering principles including structural analysis, load transfer mechanisms, buoyancy, material behaviour, and stability through hands-on design and testing. These activities support experiential learning aligned with SDG 4 (Quality Education) and SDG 9 (Industry, Innovation and Infrastructure), while also strengthening teamwork, leadership, project management, and employability skills related to SDG 8 (Decent Work and Economic Growth). Collaborative participation and faculty mentorship during these events further promote SDG 17 (Partnerships for the Goals) by fostering cooperation among students, faculty members, and organizing committees (See Table 3.6.6).

Table 3.6.6: Relevance of Cohort Supports to SDG Goal

Activity / Event Name	SDG Goal	SDG Linkage
Bridge Making Competition	SDG 4 – Quality Education	Provided hands-on learning through design and testing of structural bridge models based on fundamental civil engineering concepts.
Bridge Making Competition	SDG 9 – Industry, Innovation and Infrastructure	Encouraged innovative structural design approaches and efficient use of construction materials under defined constraints.
Boat Float Competition	SDG 4 – Quality Education	Strengthened understanding of buoyancy, stability, material behavior, and floating structures through experiential learning.
Boat Float Competition	SDG 9 – Industry, Innovation and Infrastructure	Simulated real-world engineering challenges related to floating structures and water-based infrastructure.
Converges Technical Event	SDG 8 – Decent Work and Economic Growth	Developed teamwork, technical communication, planning, and problem-solving skills relevant to engineering careers.
Converges Technical Event	SDG 17 – Partnerships for the Goals	Promoted collaboration among students, faculty coordinators, judges, and organizing committees during the technical festival.

3.7 Attainment of Course Outcomes (25) Total Marks 25.00

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

Institute Marks : 5.00

The department follows a structured Outcome Based Education (OBE) framework for assessment of Course Outcomes. Both direct and indirect assessment tools are systematically used for theory and laboratory courses to measure students' learning levels and attainment of COs. The assessment process integrates continuous internal evaluation, end semester examinations, as direct assessment tools and course exit survey as indirect assessment tools to ensure comprehensive and reliable CO attainment for record analysis and corrective actions.

A. Direct Assessment Tools and Processes

Direct assessment tools includes internal and external assessment

A.1. Internal Assessment Tools

A.1.1. Internal Assessment Theory (35 Marks)

a. Term Tests (15|10 Marks)

- Two term tests are conducted: Term Test–1 and Term Test–2, each of 30 marks.
- Questions are designed as per Bloom's Taxonomy and mapped to relevant Course Outcomes.

b. Teacher's Assessment (20|25 Marks)

- Continuous evaluation through 3-4 below teacher's assessment tools includes Mock Interview, Presentation (PPT), Group Discussion (GD), Virtual Lab, Moodle Quiz and Innovative Component.
- These activities are planned by the course instructor, aligned with the course syllabus, and mapped to relevant Course Outcomes.
- Evaluation is done using predefined rubrics to ensure uniform and transparent assessment.
- Marks from all components are consolidated and used for internal CO attainment evaluation.

A.1.2. Internal Assessment Laboratory (25|50 Marks)

a. Laboratory Experiment Assessment (15|30 Marks): Continuous evaluation based on experiment performance and viva-voce.

b. Course Specific Case Study / Assignment (10|20 Marks): Evaluates application of laboratory concepts and analytical ability.

A.1.3 Internal Assessment Project (25 Marks): Periodic evaluation of project based on problem identification, literature review, methodology, implementation progress, and interim reviews.

A.1.4 Internal Assessment Internship (150 Marks): Assessment based on internship progress reports, mentor feedback, and periodic reviews.

A.2. External Assessment Tools

A.2.1. External Assessment Theory (65 Marks): A comprehensive written examination (ESE) is conducted at the end of the semester to evaluate overall achievement of Course Outcomes.

A.2.2 External Assessment Laboratory (25|50 Marks): Evaluates students' ability to independently perform experiments, analyze results, and achieve laboratory Course Outcomes.

A.2.3. External Assessment- Project (25 Marks): Final evaluation by a panel based on project implementation, report quality, and viva.

A.2.4. External Assessment- Internship (150 Marks): Evaluation based on completion report, industry mentor assessment, and final presentation/viva.

B. Indirect Assessment Tools and Processes

Course Exit Survey: Collected at the end of the semester to capture students' perception of CO attainment and validate direct assessment results.

C. Summary of Assessment Tools with marks structure: The summary of assessment tools with marks are given in Table 3.7.1.

Table 3.7.1: Summary of Assessment Tools with marks structure

Course Type	Internal Assessment	External Assessment
Theory	35 Marks	65 Marks
Laboratory	25 | 50 Marks	25 | 50 Marks
Project	25 Marks	25 Marks

Internship	150 Marks	150 Marks

D. The quality/relevance of assessment tools/processes used

The assessment tools, their processes, and relevance to CO attainment are summarized in Table 3.7.2.

Table 3.7.2: Assessment Tools, Processes and their relevance to CO attainment

Sr. No.	Course Type	Assessment Category	Assessment Tool	Marks	Assessment Process	Relevance to CO Evaluation
Direct Assessment Tools						
1	Theory	Internal	Term Test-1	30 (Scaled to 15|10)	Written test covering part syllabus; CO-mapped questions	Evaluates conceptual understanding and analytical skills
		Internal	Term Test-2	30 (Scaled to 15|10)	Written test covering remaining syllabus; CO-mapped questions	Measures continuity of learning and higher cognitive levels
		Internal	Teacher's Assessment	20|25	Mock Interview, PPT, GD, Virtual Lab, Moodle Test, Innovative Component	Assesses application of concepts, communication skills, teamwork, and professional competencies
		External	End Semester Examination (Theory)	65	Comprehensive written examination covering entire syllabus	Assesses overall attainment of all theory COs
2	Laboratory	Internal	Laboratory Experiment Assessment	15|30	Continuous evaluation of experiment performance and viva-voce	Measures hands-on skills and procedural knowledge
	Laboratory	Internal	Course-Specific Case Study / Assignment	10|20	Application-oriented tasks aligned with lab outcomes	Evaluates analytical and problem-solving ability
	Laboratory	External	End Semester Examination (Lab)	25|50	Practical examination by internal/external examiners	Validates independent experiment execution and lab CO attainment
3	Project	Internal	Internal Assessment Project	25	Periodic reviews and progress assessment	Assesses design, implementation, and problem-solving skills
		External	External Assessment-Project	25	Final presentation and report evaluation	Measures achievement of project-related COs

Sr. No.	Course Type	Assessment Category	Assessment Tool	Marks	Assessment Process	Relevance to CO Evaluation
Direct Assessment Tools						
4	Internship	Internal	Internal Assessment Internship	150	Mentor feedback and progress reports	Evaluates professional skills and practical exposure
		External	External Assessment-Internship	150	Final report and viva	Assesses industry-oriented learning outcomes
Indirect Assessment Tools						
5	Theory and Lab	Indirect	Course Exit Survey	–	Student feedback collected at end of semester	Validates direct CO attainment through student perception

The assessment data obtained from direct and indirect assessment tools are systematically mapped to Course Outcomes and analyzed to determine CO attainment levels, as presented in Section 3.7.2.

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

Institute Marks : 20.00

Target may be stated in terms of percentage of students getting more than class average marks or set by the program in each of the associated COs in the assessment instruments (midterm tests, assignments, mini projects, reports and presentations etc. as mapped with the COs.))

The department follows a well-defined, transparent, and uniform methodology to determine Course Outcome (CO) attainment levels for all theory and laboratory courses, in alignment with Outcome Based Education (OBE) principles. CO attainment is evaluated using data obtained from direct and indirect assessment tools, as described in Section 3.7.1, and is computed separately for theory and laboratory courses.

A. Course Outcome Attainment methodology

CO attainment is computed through direct and indirect assessment data collected through theory laboratory, project, and internship assessments, followed by calculation of overall CO attainment. Each CO is evaluated based on the percentage of students scoring above the defined threshold value.

B. Calculating CO Attainment– Theory Courses

B.1. CO Attainment through Direct Assessment: Direct CO attainment is computed using internal and external assessment data collected through theory courses.

- **CO Attainment Levels and Targets:** The department has defined threshold value of 60% for Internal Assessment and 50% for External Assessment in theory courses for the 2021–22 to 2024-25 batch. Based on these threshold values, the attainment levels are calculated as per the rubrics defined in the Table 3.7.3 and 3.7.4.

Table 3.7.3: CO Attainment Levels for Internal Assessment- Theory Courses

CO Attainment Levels for Internal Assessment	
Attainment Level	**Criteria**
Level 3	More than 80% students scored above Threshold
Level 2	60% to 80% students scored above Threshold
Level 1	Less than 60% students scored above Threshold

Table 3.7.4: CO Attainment Levels for External Assessment- Theory Courses

CO Attainment Levels for External Assessment	
Attainment Level	**Criteria**
Level 3	More than 70% students scored above Threshold
Level 2	50% to 70% students scored above Threshold
Level 1	Less than 50% students scored above Threshold

- **Calculating Direct CO Attainment for Theory Courses:** The department has assigned 50% weightage to Internal Attainment and 50% to External Attainment. The direct attainment for theory courses is calculated as per the formula given below.

Direct Attainment (CO) = (0.5 × Internal Attainment) + (0.5 × External Attainment)

B.2. CO Attainment through Indirect Assessment: Course Exit Form responses collected at the end of the semester from students are analyzed CO-wise, and the indirect CO attainment for theory courses is calculated.

B.3. Overall CO Attainment: The Overall CO attainment for theory courses are calculated as per the formula given below:

Overall CO Attainment = 0.8 × CO Attainment (Direct) + 0.2 × CO Attainment (Indirect)

The process adopted for calculating CO attainment for theory courses using direct and indirect assessment components is illustrated in Figure 3.7.1.

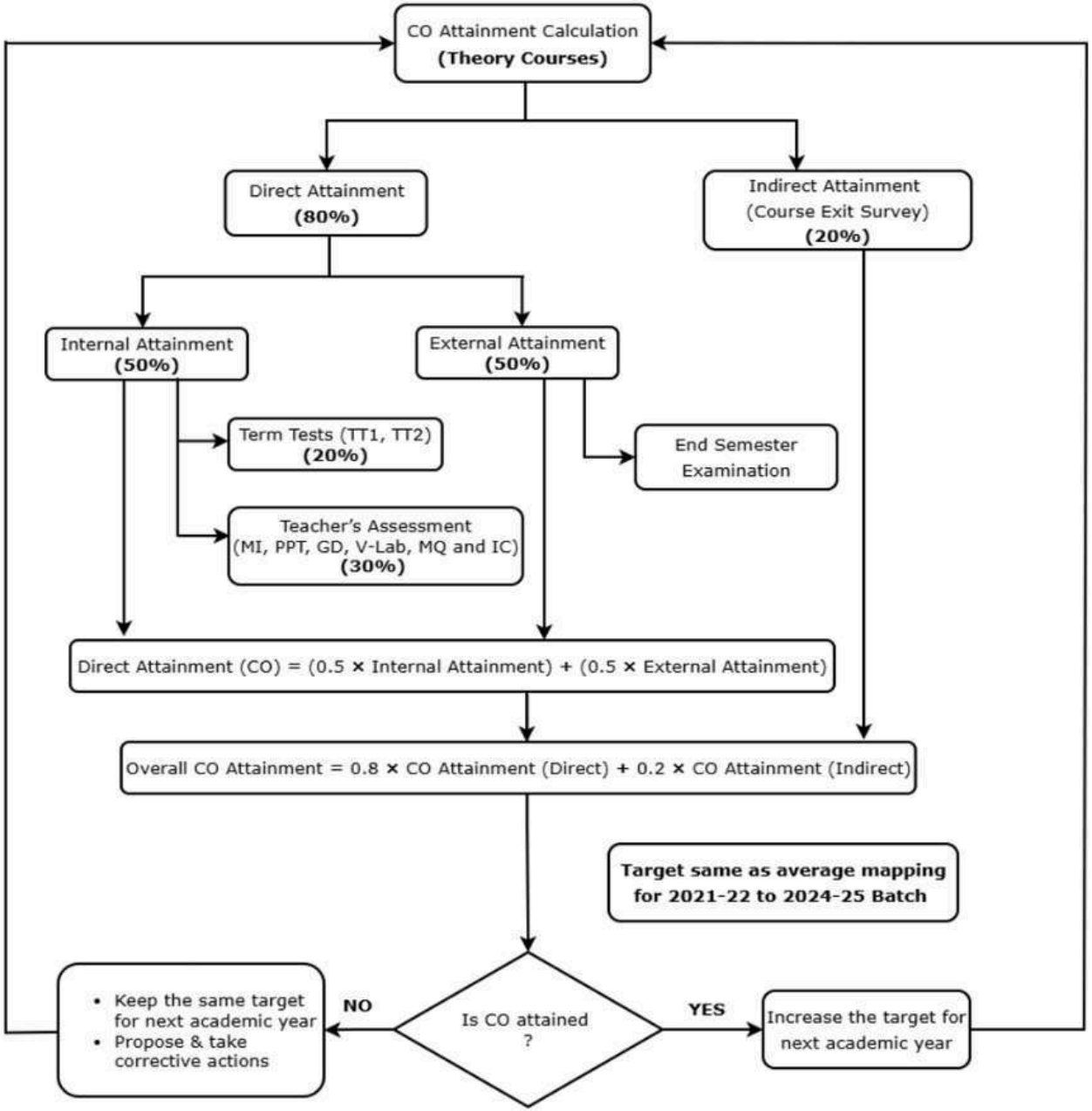

Figure 3.7.1: Course Outcome Attainment calculation Process for Theory Courses

C. Calculating CO Attainment– Laboratory Courses

C.1. CO Attainment through Direct Assessment: Direct CO attainment is computed using **internal and external assessment data** collected through Laboratory courses (Lab, Project, and Internship)

- **CO Attainment Levels and Targets:** The department has defined threshold value of 70% for Internal Assessment and 60% for External Assessment in laboratory courses for the 2021–22 to 2024-25 batch. Based on these threshold values, the attainment levels are calculated as per the rubrics defined in the Table 3.7.5 and 3.7.6.

Table 3.7.5: CO Attainment Levels for Internal Assessment- Laboratory Courses

CO Attainment Levels for Internal Assessment	
Attainment Level	**Criteria**
Level 3	More than 90% students scored above Threshold
Level 2	70% to 90% students scored above Threshold
Level 1	Less than 70% students scored above Threshold

Table 3.7.6: CO Attainment Levels for External Assessment- Laboratory Courses

CO Attainment Levels for External Assessment	
Attainment Level	**Criteria**
Level 3	More than 80% students scored above Threshold
Level 2	60% to 80% students scored above Threshold
Level 1	Less than 60% students scored above Threshold

- **Calculating Direct CO Attainment for Laboratory Courses:** The department has assigned 50% weightage to Internal Attainment and 50% to External Attainment. The direct attainment for laboratory courses is calculated as per the formula given below.

Direct Attainment (CO) = (0.5 × Internal Attainment) + (0.5 × External Attainment)

C.2. CO Attainment through Indirect Assessment: Course Exit Form responses collected at the end of the semester from students are analyzed CO-wise, and the indirect CO attainment for theory courses is calculated.

C.3. Overall CO Attainment – Laboratory Courses: The Overall CO attainment for laboratory courses are calculated as per the formula given below:

Overall CO Attainment = 0.8 × CO Attainment (Direct) + 0.2 × CO Attainment (Indirect)

The process followed for calculating CO attainment for laboratory courses using direct and indirect assessment components is shown in Figure 3.7.2.

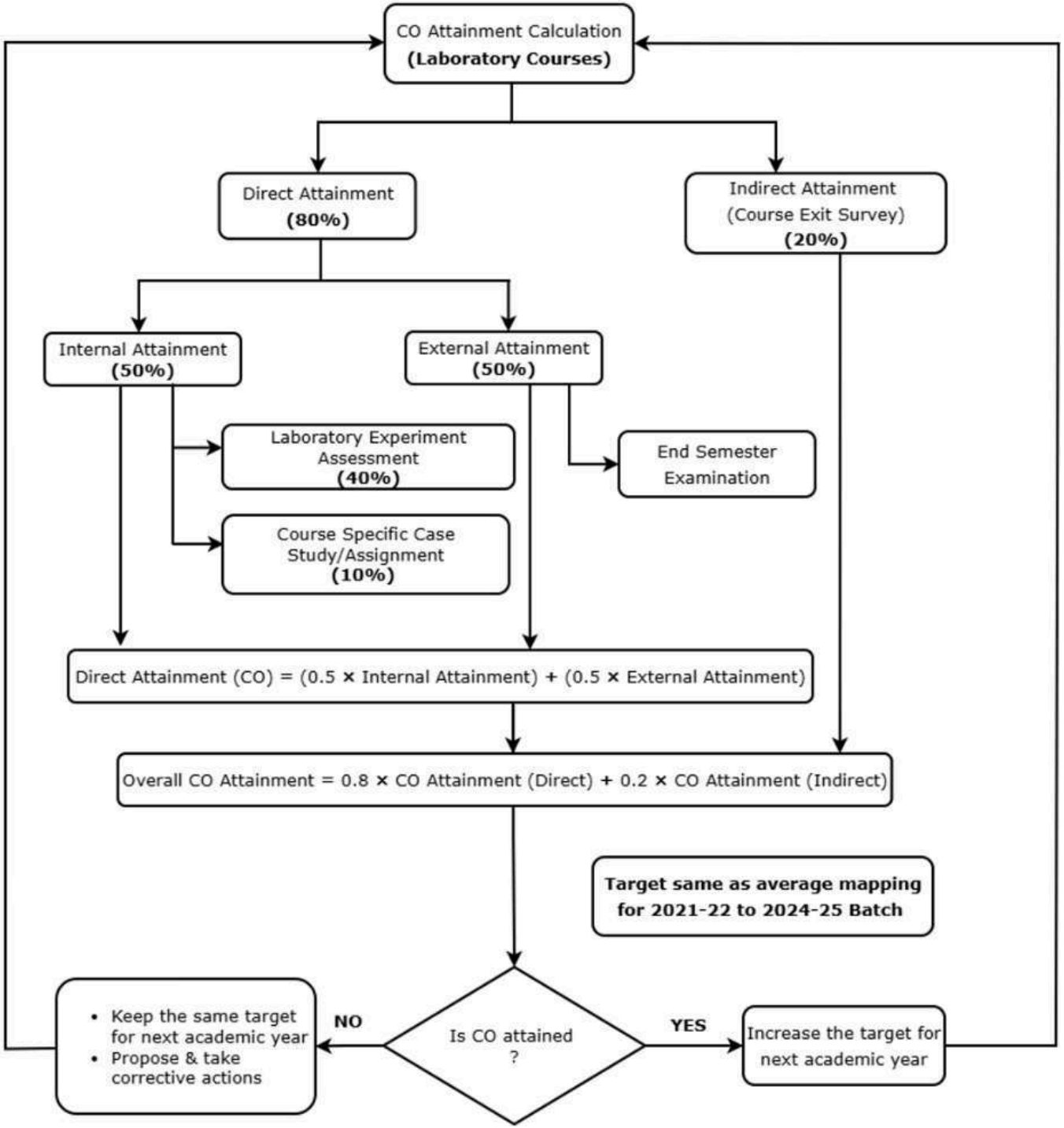

Figure 3.7.2: Course Outcome Attainment calculation Process for Laboratory Courses

D. Review and Verification of CO Attainment

- CO attainment levels are computed and documented for all theory and laboratory courses.
- The attainment results are reviewed by the Course Committee and Department Advisory Committee.
- Calculations are verified using internal assessment records, end semester examination results, and indirect student survey data.

E. Course Outcome Attainment for Batch 2021-22 to 2024-25

Table 3.7.7: Coursewise CO Attainment for Batch 2021-2022 to 2024-25

Course Code	CO1	CO2	CO3	CO4	CO5	CO6
C101	1.79	1.65	1.65	1.82	1.82	1.82
C102	1.54	1.52	1.37	1.37		
C103	1.6	1.59	1.69	1.6		
C104	1.81	1.83	1.86	1.87	1.66	1.67
C105	1.76	1.8	1.82	1.85	1.7	
C106	2.57	2.08	2.09	2.09		
C107	2.45	2.47	2.5	1.55	1.5	2.47
C108	2.08	2.12	1.18	1.21	1.22	
C109	2.24	2.18	2.2	2.08	1.74	
C110	1.19	1.21	1.15	1.33	1.31	1.31
C111	1.42	1.4	1.24	1.25		
C112	1.56	1.63	1.56	1.56		
C113	1.53	1.51	1.49	1.5	1.51	
C114	1.42	1.46	1.42	1.39	1.3	1.3
C115	1.56	1.46	1.56	1.61	1.58	1.4
C116	2.45	2	1.92	2		
C117	2.32	2.12	2.12	2.12	2.36	
C118	2.78	2.82	2.78	2.75	2.82	2.82
C119	2.5	2.1	2.65	2.49	1.84	
C120	1.01	1.05	1.02	1.01	1.03	
C201	1.54	1.54	1.55	1.55	1.36	
C202	2.01	1.83	1.85	1.95	1.70	
C203	1.93	1.94	1.91	2.26	1.94	
C204	2.33	2.26	2.31	2.26		
C205	2.33	2.39	2.26	2.50		
C206	2.24	2.21	2.29	2.33	2.11	
C207	2.32	2.39	2.40	2.75	2.56	
C208	2.17	1.92	2.17	1.84	1.68	

C209	2.45	2.45	2.46	2.50	2.50	
C210	1.97	1.97	1.98	2.02	2.02	
C211	2.94	2.94	2.95	2.96	2.96	
C214	1.59	1.60	1.41	1.59	1.73	
C215	1.31	1.32	1.37	1.39	1.18	
C216	2.43	2.44	2.17	2.51	2.14	
C217	1.52	1.53	1.81	1.38		
C218	2.12	1.93	1.81	1.86		
C219	1.89	1.86	1.94	1.84	1.66	
C220	2.05	2.26	2.26	2.40	2.38	
C221	1.85	1.85	1.89	1.67	1.80	
C222	2.01	1.92	2.08	2.06	1.67	
C223	2.92	2.93	2.91	2.89	2.87	
C224	1.36	1.38	1.39	1.38	1.33	
C301	1.80	1.82	1.82	1.91	1.70	
C302	1.72	1.74	1.74	1.43	1.78	
C303	1.94	1.92	1.83	1.74		
C304	1.70	1.36	1.03	1.34		
C305	2.18	2.08	2.20	2.15	1.86	
C306	2.98	2.96	3.00	2.95	2.98	
C307	2.20	2.25	2.20	2.23	1.99	
C308	2.88	2.79	2.81	2.81		
C309	2.17	2.13	2.19	2.18	2.13	
C310	2.96	2.98	2.93	2.98	2.98	
C311	2.98	2.96	2.95	2.99	2.94	
C312	1.36	1.38	1.38	1.40		
C313	2.38	2.44	2.39	2.27		
C314	2.46	2.48	2.46	2.51		
C315	2.36	2.33	2.41	2.00	2.01	
C316	2.20	2.17	2.17	2.48	1.85	
C317	2.62	2.80	2.90	2.82	2.50	
C318	1.98	2.00	2.02	2.02	2.18	
C319	2.78	2.72	2.81	2.81		
C320	2.40	2.34	2.39	2.41	2.10	
C321	2.60	2.60	2.58	2.60	2.60	
C322	2.97	2.96	2.96			

C401	2.21	2.19	2.17	2.04	1.85	
C402	2.74	2.51	2.57	2.52	1.93	
C403	2.81	2.80	2.89	2.80	2.41	
C404	2.06	1.84	2.01	1.68		
C405	1.55	1.47	1.71	1.48	1.32	
C406	2.43	2.76	2.57	2.67	2.57	
C407	2.43	2.45	2.79	2.72		
C408	2.96	2.98	2.97	2.98	2.95	
C409	1.32	1.27	1.49	1.68		
C410	2.33	2.33	2.43	2.44		
C411	2.40	2.41	2.48	2.56		
C412	2.88	2.64	2.79	2.72		
C413	2.94	2.94	2.94	2.96		

E. CO Attainment Calculation Sheet

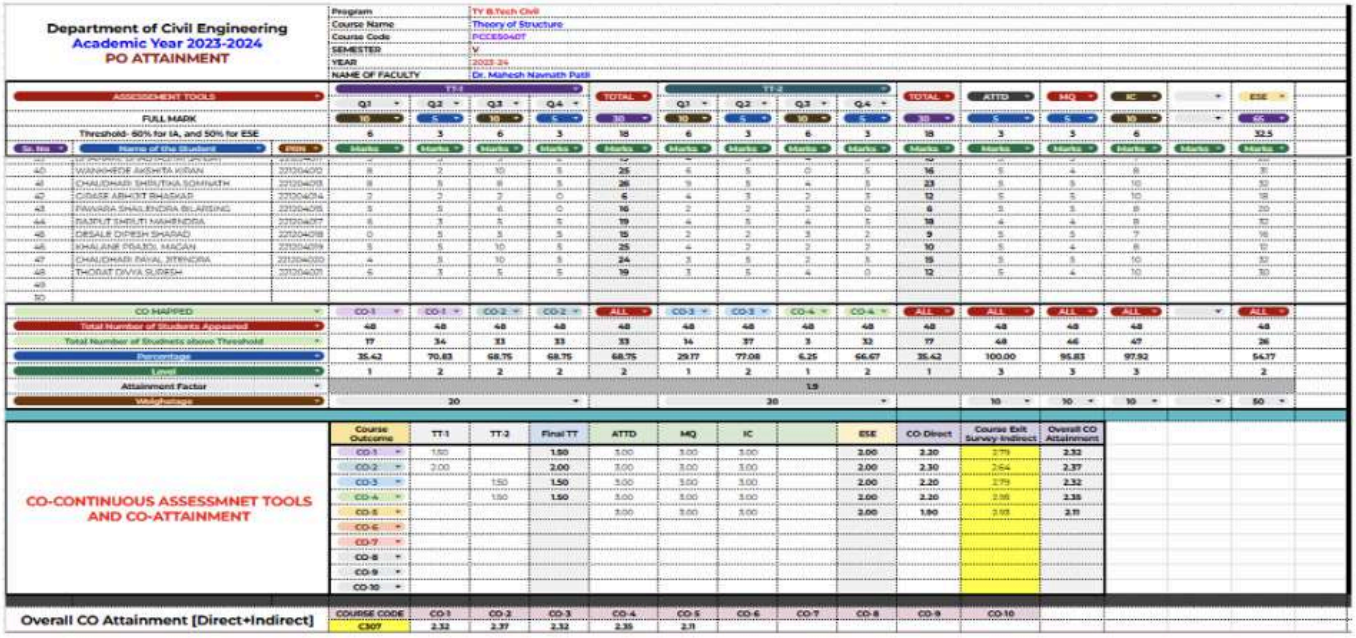

Figure 3.7.3: CO Attainment Calculation Sample Sheet-Theory Course

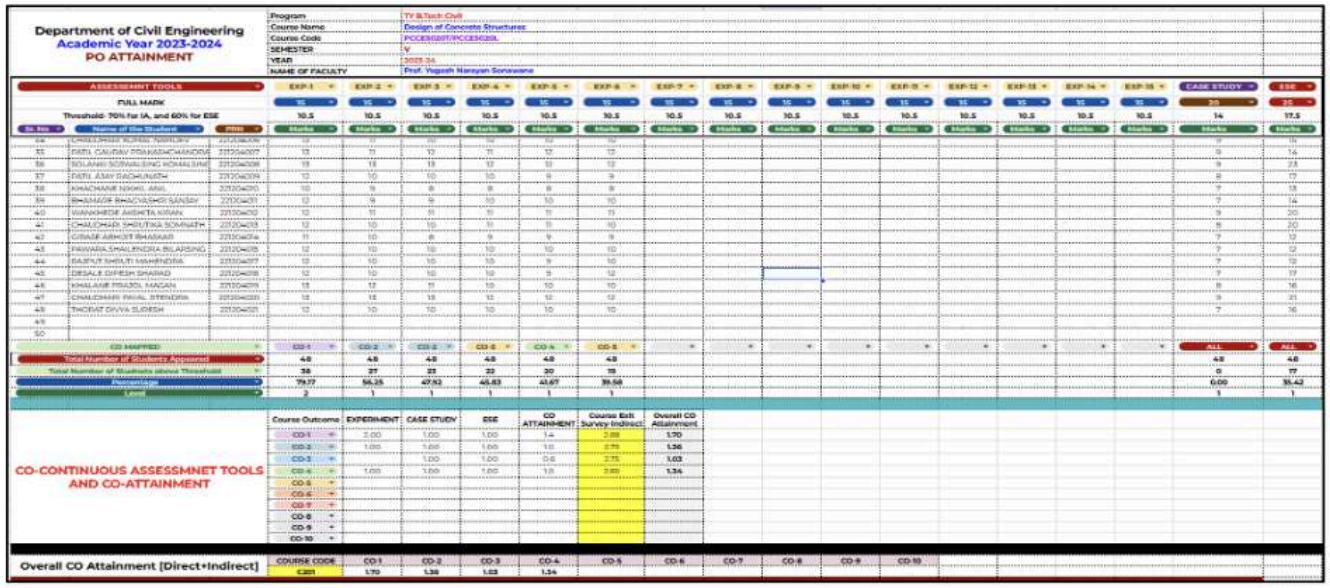

Figure 3.7.4: CO Attainment Calculation Sample Sheet-Lab Course

G. Corrective Actions and Continuous Improvement

- Course Outcomes with attainment levels below the desired benchmark are identified.
- Corrective actions such as remedial classes, additional tutorials, revision sessions, and refinement of assessment strategies are implemented in the subsequent academic cycle.
- The effectiveness of these actions is reviewed in the next cycle of CO attainment analysis.

3.8 Attainment of Program Outcomes and Program Specific Outcomes (25) Total Marks 25.00

Institute Marks : 25.00

PO Attainment

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C101	1.48	0.99	0	0.59	0.52	0	0	0	0	0	0	0.49
C103	0.67	0.55	0	0	0	0	0.87	0	0	0.44	0	0.44
C105	1.04	0.83	0.52	0.52	0	1.02	1.02	0	0	0.51	0	1.04
C106	1.2	0.76	0.2	0	0	0	0.6	0	0	0.83	0.2	0.68
C108	0.85	0.67	0.43	0.43	0	0.8	0.8	0	0	0.4	0	0.85
C110	0.83	0.56	0.29	0.34	0.3	0	0	0	0	0	0	0.28
C111	0.63	0.32	0.32	0	0	0	0	0	0	0.53	0.32	0.32
C114	0.57	0.34	0.67	0	0.39	0	0	0	0	0	0	0
C115	0.37	0.42	0.4	0.46	0.37	0.84	0	0.61	0.44	0.58	0.43	0.43
C116	1.28	1.12	0.74	0.34	0.59	0.77	0.9	0.77	0	0.84	0.62	0.86
C117	1.82	1.18	1.18	1.28	1.28	0	0.9	0.9	0.9	1.48	0.9	1.8
C118	1.56	0.93	1.87	0	1.09	0	0	0	0	0	0	0
C119	0	0.67	0.67	0.83	0	1.39	0	1.01	0.79	1	0.67	0.74
C201	1.16	0.79	0	0.67	0	0	0	0	0	0	0	0
C208	1.47	0.87	0.58	1.03	0.91	1.58	1.67	0	2	1.30	0.50	1.11
C214	1.25	1.17	0.00	0.92	0	0	0	0	0	0	0	0
C220	1.71	0.71	0.71	0.71	0.71	2.10	1.94	1.40	0.70	1.27	0.71	1.30
C224	0.67	0.56	0	0.33	0.33	0	0	0	0	0.33	0.42	0.33
C310	0	0	0	0	0	2.00	0	3.00	1.80	1.60	1.00	1.00
C311	3.00	2.20	1.00	1.40	2.00	2.60	2.40	2.60	2.60	3.00	1.60	2.20
C319	0.92	0.93	0.93	0	0.92	0	0	0	2.75	0	1.63	0
C408	3.00	2.40	2.20	2.60	2.80	3.00	3.00	3.00	2.00	3.00	2.00	3.00
C409	0.94	0.85	0.38	0.57	0.69	0.84	0.71	0	0.47	0.50	0.68	1.02
C412	3.00	2.25	1.67	1.67	1.67	2.75	2.75	3.00	3.00	2.00	1.67	2.67
C413	3.00	1.25	1.33	1.00	2.00	2.67	2.00	3.00	3.00	1.50	1.00	0
C102	0.90	0.40	0.40	0	0	0	0	0	0	0.70	0.40	0.40
C104	1.53	1.02	0.51	0.78	0.53	0	0	0	0.53	0	0	0.51
C107	2.00	1.33	0.67	1.07	0.80	0	0	0	0.80	0	0	0.67

C109	0	0.70	0	0.70	0.67	1.13	0	0.88	0.65	0.66	0.50	0.65
C112	0.85	1.07	0.57	0.43	0.75	0.99	0	0.99	0	0.43	0.43	0.71
C113	0.88	0.56	0.56	0.60	0.60	0	0	0.40	0.40	0	0.40	0.80
C120	0.60	0.60	0.40	0.36	0.20	0	0	0	0.20	0	0.20	0.40
C202	1.65	1.08	0	0.55	0	0	0	0	0	0	0	0.55
C203	1.78	1.33	0	0.59	1.13	0	0	0	0	0	0	0.59
C204	1.61	0.72	0	0.72	0.72	0	0	0	0	0	0	0.72
C205	1.70	0.75	0	0.75	0.75	0	0	0	0	0	0	0.75
C206	1.67	1.93	1.67	1.10	0	0	0	0	0	1.93	1.05	0.70
C207	1.90	2.25	1.90	1.25	0	0	0	0	0	2.21	1.17	0.80
C209	2.80	1.80	1.40	1.80	1.75	2.80	2.75	0	0	0	0	3
C210	1.68	1.08	0.84	1.08	1.05	1.68	1.65	0	0	0	0	1.80
C211	3.00	2.40	2.20	2.50	2.75	2.67	0	0	2.33	2.75	2	2.75
C215	0.96	0.64	0.32	0.45	0.64	0	0	0	0	0.56	0	0.64
C216	2.24	1.52	0.75	1.07	1.56	0	0	0	0	1.33	0	1.49
C217	0.86	0.65	0.43	0.53	0	0	0	0	0.86	0	0	0.43
C218	1.17	0.85	0.58	0.75	0	0	0	0	1.17	0	0	0.58
C219	1.29	0.53	0.53	0.53	0.53	1.28	0	1.11	0	0.97	0	0.95
C221	1.58	1.58	1.05	1.05	1.58	0	0	0	0.53	0	0	0.53
C222	0	0	0.62	0	0	0	0	1.37	0.60	0	0	0.53
C223	3.00	2.40	2.20	2.60	2.80	2.00	0	3.00	2.00	3.00	2.00	3.00
C301	1.58	1.47	0.53	0.53	1.15	0	1.40	0	0	0	0	0.52
C302	1.42	1.35	0.47	0.47	1.13	0	1.50	0	0	0	0	0.50
C303	1.63	1.48	0.54	0.54	1.08	1.07	0	0	0	0.54	0	1.63
C304	1.00	0.88	0.33	0.33	0.67	0.67	0	0	0	0.33	0	1
C305	0.66	0.76	0.63	0.61	0.63	0	1.10	0.66	0.63	0	0.53	0
C306	1.00	1.20	1.00	1.00	1.00	0	1.67	1.00	1.00	0	1.00	0
C307	2.01	2.01	1.34	1.34	2.01	0	0	0	0.67	0	0	0.67
C308	2.59	1.88	1.88	1.18	1.88	0	2.52	2.83	2.21	2.21	1.57	1.57
C309	1.00	1.20	1.00	0	1.00	0	2.00	2.33	1.00	0	1.00	1.00

C312	0.33	0.67	0.33	0.33	0.67	0	0	0	0	0	0	0.42
C313	1.70	1.49	0.74	0.73	0.75	1.88	0.73	0	0	0.75	0.77	0
C314	1.80	1.60	0.80	0.80	0.80	2.00	0.80	0	0	0.80	0.80	0
C315	1.77	1.32	0.93	0.68	1.44	1.35	2.06	0	0	0.69	0	1.52
C316	1.73	1.33	0.93	0.67	1.56	1.33	2.00	0	0	0.67	0	1.47
C317	2.70	1.62	1.43	0.90	1.11	0	2.18	0	0	0	0	0.87
C318	1.84	1.09	1.07	0.61	0.78	0	1.47	0	0	0	0	0.60
C320	1.28	0.73	0.73	0	0	1.90	1.63	0	0	0.73	0	0.73
C321	1.94	1.67	1.17	1.67	1.46	0	2.5	0	1.67	1.04	1.46	1.67
C322	0	1.00	1.00	0	1.00	0	1.00	0	0	0	1.00	1.00
C401	1.94	1.94	0.65	0.68	0.67	0	0.70	0	0	0.65	0.70	0
C402	2.39	2.39	0.80	0.86	0.86	0	0.88	0	0	0.80	0.88	0
C403	2.72	2.19	1.62	1.67	2.57	1.80	2.53	0	2.63	0	1.47	2.35
C404	1.67	1.36	0.96	1.12	1.67	1.13	1.52	0	1.63	0	0.98	1.40
C405	0.83	0.90	0.83	0.98	1.13	0	1.13	1.00	1.13	0	1.00	1.14
C406	2.56	0.85	0.86	0.85	0.86	0	2.56	1.67	0.86	0	0.82	0.85
C407	2.40	0.85	0.85	0	0	2.35	2.58	2.60	0.93	0	0.80	0.88
C410	1.69	1.50	0.75	0.75	0.75	1.50	2.25	0	0	0	0.75	2.07
C411	2.38	1.80	1.00	1.18	1.21	0	2.18	2.38	0.77	0	0.79	1.58

PO Attainment Indirect

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
Program Exit	2.82	2.85	2.87	2.97	2.85	2.85	2.85	2.87	2.92	2.87	2.87	2.97

PO Attainment Level

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

Define the Weightage for Indirect Attainment: 20.00

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
Direct Attainment	1.61	1.19	0.87	0.92	1.10	1.72	1.55	1.51	1.12	1.04	0.85	1.05
InDirect Attainment	2.82	2.85	2.87	2.97	2.85	2.85	2.85	2.87	2.92	2.87	2.87	2.97

Overall Attainment	1.85	1.52	1.27	1.33	1.45	1.95	1.81	1.78	1.48	1.41	1.25	1.43

PSO Attainment

Course	**PSO1**	**PSO2**
C101	0.49	0
C102	0	0
C103	0.44	0.45
C104	1.53	1.02
C105	0	0
C106	0.45	0.4
C107	2	1.33
C108	0	0
C109	0	0.63
C110	0.28	0
C111	0	0
C112	0.43	0.43
C114	0.34	0.35
C115	0.43	0.44
C116	0.34	0.32
C117	1.18	1.18
C118	0.93	0.93
C119	0.89	0.74
C201	0.39	0
C203	1.78	0.59
C204	2.15	2.15
C205	2.25	2.25
C207	1.14	0.80
C208	1.36	1.45
C209	1.20	1.50
C210	0.72	0.90
C211	3.00	2.25
C214	0.42	0

C215	0.64	0.44
C216	1.49	1.04
C217	1.29	1.29
C218	1.75	1.75
C219	0.64	0.75
C220	0.87	1.01
C221	1.58	1.05
C222	0	0.58
C223	3	3
C224	0.33	0
C301	0.67	0.67
C302	0.67	0.67
C303	1.48	0.94
C304	0.88	0.55
C305	1.90	0.77
C306	3.00	1.20
C307	2.01	1.34
C309	1.40	2.40
C310	3.00	2.00
C311	2.20	2.20
C312	0.33	0
C313	1.88	1.70
C314	2.00	1.80
C315	2.06	0.69
C316	2.00	0.67
C319	2.78	1.85
C320	0.73	1.17
C321	2.08	1.00
C322	1.00	1.00
C401	1.94	1.94
C402	2.39	2.39
C403	2.72	2.83

C404	1.67	1.67
C405	0.98	1.14
C406	1.85	2.23
C407	1.06	0.86
C408	3.00	3.00
C409	0.97	0.61
C410	2.25	1.13
C411	2.18	1.79
C412	2.00	2.00
C413	2.00	1.25
C113	0.40	0.40
C120	0.20	0.20
C202	1.65	0.55
C206	0.97	0.69
C308	1.65	1.65
C317	0.90	0.90
C318	0.61	0.61

PSO Attainment Indirect

Survey	**PSO1**	**PSO2**
Program Exit Survey	2.97	2.95

PSO Attainment Level

Course	**PSO1**	**PSO2**
Direct Attainment	1.45	1.24
InDirect Attainment	2.97	2.95
Overall Attainment	1.75	1.58

4 STUDENTS' PERFORMANCE (120) Total Marks 86.25

:

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)	2020-21 (CAYm5)	2019-20 (CAYm6)
N=Sanctioned intake of the program (as per AICTE /Competent authority)	60	60	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	58	56	37	60	50	42	42
N2=Number of students admitted in 2nd year in the same batch via lateral entry including leftover seats	0	20	20	11	21	26	26
N3=Separate division if any	0	0	0	0	0	0	0
N4=Total no. of students admitted in the 1st year via all supernumerary quotas	3	3	3	1	2	3	3

Total number of students admitted in the program (N1 + N2 + N3 + N4) - excluding those admitted through multiple entry and exit points.	61	79	60	72	73	71	71

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)**	**2021-22 (LYG)**	**2020-21 (LYGm1)**	**2019-20 (LYGm2)**
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	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	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	0	0	0
N5=N52+N53+N54	N5=N52+N53+N54	0	0	0	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	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	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	0	0	0
N6=N61+N62+N63	N6=N61+N62+N63	0	0	0	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 Backlog + without Backlog]			
		I year	II year	III year	IV year
2025-26 (CAY)	61				
2024-25 (CAYm1)	79	42			
2023-24 (CAYm2)	60	27	41		
2022-23 (CAYm3)	72	42	44	43	
2021-22 (LYG)	73	31	48	47	43
2020-21 (LYGm1)	71	41	62	59	58
2019-20 (LYGm2)	71	47	73	73	63

4.1 Enrolment Ratio (20)

Total Marks 17.00

Institute Marks : 17.00

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)*100]
2025-26 (CAY)	60	58	3	101.67
2024-25 (CAYm1)	60	56	3	98.33
2023-24 (CAYm2)	60	37	3	66.67

Average [(ER1 + ER2 + ER3) / 3] = 88.89 ≡ 17.00

Assessment : 17.00

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

Total Marks 9.81

Institute Marks : 9.81

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

Item	(2021-22) LYG	(2020-21) LYGm1	(2019-20) LYGm2
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).	81.00	86.00	86.00
B=No. of students who graduated from the program in the stipulated course duration	43.00	58.00	65.00
Success Rate (SR)= (B/A) * 100	53.09	67.44	75.58

Average SR of three batches ((SR_1+ SR_2+ SR_3)/3): 65.37

SR Points : 9.81

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 lateral entry including leftover seats (N2).

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

Total Marks 4.97

Institute Marks : 4.97

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

Academic Performance	CAYm1(2024-25)	CAYm2(2023-24)	CAYm3 (2022-23)
Mean of CGPA or mean percentage of all successful students(X)	6.85	7.49	6.16
Y=Total no. of successful students	42.00	27.00	42.00
Z=Total no. of students appeared in the examination	56.00	37.00	60.00
API [X*(Y/Z)]	5.14	5.47	4.31

Average API[(AP1+AP2+AP3)/3] : 4.97

Assessment = Average API : 4.97

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

Total Marks 5.86

Institute Marks : 5.86

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

Academic Performance	CAYm1 (2024-25)	CAYm2 (2023-24)	CAYm3 (2022-23)
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)	7.31	6.68	6.13
Y=Total no. of successful students	41.00	44.00	48.00
Z=Total no. of students appeared in the examination	47.00	53.00	52.00
API [X * (Y/Z)]	6.38	5.55	5.66

Average API [(AP1 + AP2 + AP3)/3] : 5.86

Assessment [AverageAPI] : 5.86

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

Total Marks 6.65

Institute Marks : 6.65

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

Academic Performance	CAYm1 (2024-25)	CAYm2 (2023-24)	CAYm3 (2022-23)
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)	6.77	6.67	7.14
Y=Total no. of successful students	43.00	47.00	59.00
Z=Total no. of students appeared in the examination	44.00	48.00	62.00
API [X*(Y/Z)]:	6.62	6.53	6.79

Average API [(AP1 + AP2 + AP3)/3] : 6.65

Assessment [1.5 * AverageAPI] : 6.65

4.6 Placement, Higher Studies and Entrepreneurship (30)

Total Marks 16.96

Institute Marks : 16.96

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

Item	LYG (2021-22)	LYGm1(2020-21)	LYGm2(2019-20)
FS*=Total no. of final year students	81.00	86.00	86.00
X=No. of students placed	36.00	35.00	35.00
Y=No. of students admitted to higher studies	5.00	4.00	6.00
Z= No. of students taking up entrepreneurship	6.00	8.00	8.00
Placement Index(P) = (((X + Y + Z)/FS) * 100):	58.02	54.65	56.98

Average Placement Index = (P_1 + P_2 + P_3)/3: 56.55

Placement Index Points: 16.96

4.7 Professional Activities (25) Total Marks 25.00

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

Institute Marks : 5.00

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	CESA
2	IEI

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	Date of Event (DD/MM/YYYY)
1	CESA	Converges	National	28/02/2025
2	CESA	Engineers Day (in Association with Architect and Engineers)	National	15/09/2024
3	CESA	Teachers Day	National	05/09/2024
4	CESA	Tree planation	National	23/11/2024
5	CESA	Stationary/food Donation	National	02/11/2024
6	CESA	Blood Donation	National	14/09/2024
7	CESA	Cleanness drive	National	02/12/2024
8	CESA	Green Yatra	National	11/03/2025
9	CESA	NSS Special Camp	National	13/03/2025

(CAYm2) 2023-24

S.No	Name of the Professional Societies/Bodies, Chapters, Clubs	Name of the Event	National/International level	Date of Event (DD/MM/YYYY)
1	CESA	Converges	National	16/02/2024
2	CESA	Teachers Day	National	05/09/2023
3	CESA	Engineers Day (in Association with Architect and Engineers)	National	15/09/2023
4	CESA	Blood Donation	National	13/09/2023

(CAYm3) 2022-23

S.No	Name of the Professional Societies/Bodies, Chapters, Clubs	Name of the Event	National/International level	Date of Event (DD/MM/YYYY)
1	CESA	Converges	National	25/02/2023
2	CESA	Engineers Day (in Association with Architect and Engineers)	National	15/09/2022
3	CESA	Teachers Day	National	05/09/2022
4	CESA	Tree planation	National	13/12/2022
5	CESA	Social Work Donation (Relief Fund, Food, Cloths Etc)	National	30/01/2023
6	CESA	Blood Donation	National	11/01/2022
7	CESA	Pledge (Mazi Vasundhara Mitra)	National	10/09/2022
8	CESA	Pledge (Har Ghar Tiranga)	National	15/08/2022

4.7.2 Student's Participations in Professional Events (10)

Institute Marks : 10.00

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)	Name of Award
1	Khalane Prajol Magan	SHAPATYAM 2024	National Level	13/11/2024	NA
2	Khalane Prajol Magan	Paper Writing Competition	National Level	15/09/2024	NA
3	Jamadar Krishna Prakash	JAMRANG (Line Follower Race)	National Level	22/02/2025	Cash Prize of Rs. 2100/-
4	Mundada Raghav Sunil	TECHNOFEST-2K25 (Buoyancy Force)	National level	18/03/2025	NA
5	Sonawane Dhiraj Sahebrao	SBI YOUTH IDEATHON (Think Startup)	National level	05/04/2025	NA
6	Sonawane Dhiraj Sahebrao	TECH-CARVAAN 2025 (ARCHX- BRIDGE MAKING)	National level	25/03/2025	NA
7	Sonawane Dhiraj Sahebrao	TECH-CARVAAN 2025 (GLIDE-LINE-X)	National level	25/03/2025	NA
8	Priyanka C Lokhande	Innovative Dhule (Paper Writing Competition on Issues faced by Dhule City)	National level	26/10/2024	NA
9	Mali Krushna Prakash	INNOVATE DHULE	National level	12/09/2024	NA
10	More Kartika Pravin	TECH FEST 2K25 (Bridge It)	National level	17/04/2025	NA
11	Desale Dipesh Sharad	Builder Association of India (BAI)	National level	26/10/2024	Cash Prize of Rs. 5500/-
12	Patil Ajay Raghunath	Skill India	National level	06/09/2024	NA
13	Patil Ajay R	Skill India	National level	13/06/2024	NA
14	Ajit Pawara	Aakruti Global	National level	26/10/2024	NA
15	Ajit Sunil Pawara	Skill India	National level	21/10/2023	NA
16	Prem Rajendra Jadhav	BIM	National level	03/04/2025	NA
17	Prem R Jadhav	Swayam	National level	03/04/2025	NA
18	Bawa Priyanka Kalyan	AVISHKAR-2024	National level	25/10/2024	NA
19	Sonar Kunal Kishor	AVISHKAR-2024	National level	25/10/2024	NA
20	Tejaswini Prakash Bhavsar	AVISHKAR-2024	National level	25/10/2024	NA
21	Gaurav P Patil	AVISHKAR-2024	National level	25/10/2024	NA
22	Sarthak Shyamkant Patil	AVISHKAR-2024	National level	25/10/2024	NA

(CAYm2) 2023-24

S.No	Name of the Student	Name of the Event	State /National/International level	Date of Event (DD/MM/YYYY)	Name of Award
1	Chirag Krishnaraj Patil	Skill India	National Level	07/02/2024	NA
2	Aniket Nanasaheb Gosavi	Skill India	National Level	31/01/2024	NA
3	Vaishnavi babasaheb shirsath	Skill India	National Level	07/02/2024	NA
4	Divya Hiraman Patil	Skill India	National Level	03/02/2024	NA
5	Chetan kantilal Wadile	Skill India	National Level	07/02/2024	NA
6	Sojwalsing komalsing Solanki	Technowanza	National Level	28/12/2022	NA
7	Namarata Patil	Hackthon- sustainable energy solution 2023	National Level	02/11/2023	NA

(CAYm3) 2022-23

S.No	Name of the Student	Name of the Event	State /National/International level	Date of Event (DD/MM/YYYY)	Name of Award
1	Devendra K Pardeshi	3-DAY online STTP on “Recent Advances in Concrete Technology & Sustainable Infrastructure" Advances in Concrete Technology & Sustainable Infrastructur	National Level	04/08/2022	NA
2	Patil Sarang Mahipalsing	3-DAY online STTP on “Recent Advances in Concrete Technology & Sustainable Infrastructure" Advances in Concrete Technology & Sustainable Infrastructur	National Level	04/08/2022	NA
3	Chavan Vishal Jagdish	3-DAY online STTP on “Recent Advances in Concrete Technology & Sustainable Infrastructure" Advances in Concrete Technology & Sustainable Infrastructur	National Level	04/08/2022	NA
4	Sonawane Sushil Bhaidas	3-DAY online STTP on “Recent Advances in Concrete Technology & Sustainable Infrastructure" Advances in Concrete Technology & Sustainable Infrastructur	National Level	04/08/2022	NA
5	Chavan Vishal Jagdish	“Contrivance of Sustainable Development Goals (SDGs) for Environmental Conservation”	National Level	24/10/2022	NA
6	Devendra K Pardeshi	“Contrivance of Sustainable Development Goals (SDGs) for Environmental Conservation”	National Level	24/10/2022	NA
7	Kuyate Bhagyashri Pravin	“Contrivance of Sustainable Development Goals (SDGs) for Environmental Conservation”	National Level	24/10/2022	NA
8	Patil Sarang M	“Contrivance of Sustainable Development Goals (SDGs) for Environmental Conservation”	National Level	24/10/2022	NA
9	Patil Sarang	“World Environment Day Quiz”	National Level	07/12/2022	NA
10	Chavan Vishal Jagdish	“World Environment Day Quiz”	National Level	07/12/2022	NA
11	Sonawane Sushil Bhaidas	“World Environment Day Quiz”	National Level	07/12/2022	NA
12	Devendra K Pardeshi	“World Environment Day Quiz”	National Level	07/12/2022	NA
13	Bhandarkar Mitali Manoj	Avishkar 2022	State Level	12/07/2022	NA
14	Sakshi Vasant Wadile	Avishkar 2022	State Level	12/07/2022	NA
15	Raj Bhalchndra Wagh	Avishkar 2022	State Level	12/07/2022	NA
16	Disha Haribhau Walkar	Avishkar 2022	State Level	12/07/2022	NA
17	Madhav Sunil Gorane	Avishkar 2022	State Level	12/07/2022	NA

18	Mansi Ravindra Patil	Avishkar 2022	State Level	12/07/2022	NA
19	Harshal Shirish Pingale	Avishkar 2022	State Level	12/07/2022	NA
20	Rahul Manilal Hurej	Avishkar 2022	State Level	12/07/2022	NA
21	Aishwarya Hitendra Patole	Avishkar 2022	State Level	12/07/2022	NA
22	Tejaswini Akash Jadhav	Avishkar 2022	State Level	12/07/2022	NA
23	Sayali Bhika Patil	Avishkar 2022	State Level	12/07/2022	NA
24	Mayuri Jitendra Thorat	Avishkar 2022	State Level	12/07/2022	NA

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

Institute Marks : 5.00

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	Semester	No. of Issues	Hard copy/Soft copy
1	RCPIT - Civil Newsletter June to Nov	Dr. H. R. Kumavat	Jadhav Prerna Uttam 2) Chaudhari Pallavi Anil 3) Vaishyawani Prachi Viay	5	1	Soft Copy
2	RCPIT - Civil Newsletter June to Nov	Dr. H. R. Kumavat	Jadhav Prerna Uttam 2) Chaudhari Pallavi Anil 3) Vaishyawani Prachi Viay	6	1	Soft Copy
3	CIVISTA Technical Magazine	Dr. H. S. Patil	1) Patil Rubee Jagdish 2) More Kartika Pravin 3) Patil Rutuja D	8	1	Soft Copy

(CAYm2) 2023-24

S.No	Name of the Journal, Magazine, Newsletter	Name of the Editor	Name of the Student	Semester	No. of Issues	Hard copy/Soft copy
1	RCPIT - Civil Newsletter June to Nov	Dr. H. S. Patil	Krishna Deore, Madhav Gorane, Raj Wagh, Krishna Mali, Gaurav Patil	5	1	Soft Copy
2	RCPIT - Civil Newsletter December to May to No	Dr. H. R. Kumavat	Krishna Deore, Madhav Gorane, Raj Wagh, Krishna Mali, Gaurav Patil	6	1	Soft Copy
3	CIVISTA Technical Magazine	Dr. H. S. Patil	1) Rajput Sayali Sanjay 2) Shirsath Vaishnavi Babasaheb 3) Rajput Tanuja Nayansing	8	1	Soft Copy

(CAYm3) 2022-23

S.No	Name of the Journal, Magazine, Newsletter	Name of the Editor	Name of the Student	Semester	No. of Issues	Hard copy/Soft copy
1	RCPIT - Civil Newsletter June to Nov	Dr. H. R. Kumavat	Vedant Patel, Parth Bagul, Kalyani Patil, Harshal Mahale, Divya Patil	5	1	Soft Copy
2	RCPIT - Civil Newsletter December to May to No	Dr. H. R. Kumavat	Vedant Patel, Parth Bagul, Kalyani Patil, Harshal Mahale, Divya Patil	6	1	Soft Copy
3	CIVISTA Technical Magazine	Dr. H. S. Patil	1) Thorat Mayuri Jitendra 2) Jadhav Tejaswini Akosh 3) Patil Bhushan Dilip	8	1	Soft Copy

4.7.4 Student Publications (5)

Institute Marks : 5.00

Table No. 4.7.4.1: List of student publications.

(CAYm1) 2024-25

S.No	Name of the Student	Semester	Name of the Publisher	Name of the Journal/ Conference, etc.	Volume No.	Issue No.	Name of the Award if any
1	Krishna Deore, Madhav Gorane, Raj Wagh, Krishna Mali, Gaurav Patil	7	IJRAR	International Journal of Research and Analytical Reviews (IJRAR)	12	2	NA
2	Prerna Jadhav, Tejaswini Bhavsar, Kirti Bafna, Sojwal Solanki	7	IJARSCT	International Journal of Advanced Research in Science, Communication and Technology	5	2	NA
3	Gaurav Pandit Bhoi, Dipak Chandrakant Bhoi, Prajol Magan Khalane, Divya Suresh Thorat	7	IJARSCT	International Journal of Advanced Research in Science, Communication and Technology	5	2	NA
4	Mali Namrata, Bhamare Bhagyashree	7	IJSAT	International Journal on Science and Technology (IJSAT)	16	2	NA

(CAYm2) 2023-24

S.No	Name of the Student	Semester	Name of the Publisher	Name of the Journal/ Conference, etc.	Volume No.	Issue No.	Name of the Award if any
1	Vedant Patel, Parth Bagul, Kalyani Patil, Harshal Mahale, Divya Patil	7	IJCRT	International Journal of Creative Research Thoughts	12	5	NA
2	Trupti Padmakar, Rahul Badgujar, Prahlad Chaudhari, Rutik Patel, Nakul Patil, Kunal Gavit.	7	IJCRT	International Journal of Creative Research Thoughts	12	5	NA

(CAYm3) 2022-23

S.No	Name of the Student	Semester	Name of the Publisher	Name of the Journal/ Conference, etc.	Volume No.	Issue No.	Name of the Award if any
1							

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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?
1	Dr. Yogesh Narayan Sonawane	CXBPS7397N	NA	Ph.D	Kavayitri Bahinabai Chaudhari North Maharashtra University, P.O. Box No. 80, Umavi Nagar, Jalgaon -	Civil Engineering	19/07/2010	15.6	Assistant Professor	Associate Professor	18/08/2025	Regular	Yes		Yes
2	Dr. Hemraj Ramdas Kumavat	AYLPK7574L	NA	Ph.D	Mukesh Patel School of Technology Management and Engineering, NMIMS, Mumbai	Civil Engineering	01/08/2008	17.5	Lecturer	Associate Professor	31/07/2023	Regular	Yes		No
3	Mr. Ganesh Vijay Tapkire	ANTPT0068R	NA	M.Tech	Rajiv Gandhi Proudyogiki Vishwavidyalaya, Bhopal	Building construction Technology	22/07/2011	14.5	Assistant Professor	Assistant Professor		Regular	Yes		No
4	Dr. Pramod Sambhaji Patil	AOXPP4047B	NA	Ph.D	Kavayitri Bahinabai Chaudhari North Maharashtra University, P.O. Box No. 80, Umavi Nagar, Jalgaon -	Civil Engineering	22/07/2011	14.5	Assistant Professor	Assistant Professor		Regular	Yes		No
5	Dr. Chetan Jaiprakash Chitte	AGVPC4194Q	NA	Ph.D	Amity University, Mumbai	Civil Engineering	01/02/2012	13.11	Assistant Professor	Assistant Professor		Regular	Yes		No
6	Dr. Mahesh Navnath Patil	AVKPP4830E	NA	Ph.D	Kavayitri Bahinabai Chaudhari North Maharashtra University, P.O. Box No. 80, Umavi Nagar, Jalgaon -	Civil Engineering	11/06/2012	13.7	Assistant Professor	Associate Professor	27/08/2024	Regular	Yes		No

7	Mr. Rajendra Dinkar Patil	BEIPP0726D	NA	M.E.	North Maharashtra University, P.O. Box No. 80, Umavi Nagar, Jalgaon -	Building Science & Technology	16/08/2012	13.5	Assistant Professor	Assistant Professor		Regular	Yes		No
8	Mr. Aakash Suresh Pawar	BCCPP7296L	NA	M.E.	North Maharashtra University, P.O. Box No. 80, Umavi Nagar, Jalgaon -	Infrastructure Engineering and Management	22/08/2012	13.4	Assistant Professor	Assistant Professor		Regular	Yes		No
9	Mr. Jitendra Manilal Joshi	AKWPJ7776L	NA	M.Tech	Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur	Structural Engineering	02/11/2020	5.2	Assistant Professor	Assistant Professor		Regular	Yes		No
10	Dr. Rahul Kantilal Pawar	CPIPP0284E	NA	Ph.D	Mansarovar Global University (Sehore)	Environmental Engineering	09/02/2021	4.11	Assistant Professor	Assistant Professor		Regular	Yes		No
11	Dr. Hiteshkumar Santosh Patil	BKAPP5399G	NA	Ph.D	Kavayitri Bahinabai Chaudhari North Maharashtra University, P.O. Box No. 80, Umavi Nagar, Jalgaon -	Civil Engineering	24/08/2022	3.4	Associate Professor	Professor	01/07/2024	Regular	Yes		No
12	Mr. Tushar Suryakant Bhamare	BEXPB1472D	NA	M.E.	Kavayitri Bahinabai Chaudhari North Maharashtra University, P.O. Box No. 80, Umavi Nagar, Jalgaon -	Infrastructure Engineering and Management	01/08/2024	1.5	Assistant Professor	Assistant Professor		Regular	Yes		No
13	Dr. Lomesh Shashikant Mahajan	ANMPM2291G	NA	Ph.D	Dr. Babasaheb Ambedkar Technological University, Lonere, Tal-Mangaon, Dist – Raigad	Civil Engineering	12/08/2013	10.9	Assistant Professor	Assistant Professor		Regular	No	31/05/2024	No
14	Mr. Nikhil Yuvraj Mithbhakare	CPSPM6543R	NA	M.Tech	Shivaji University, Kolhapur	Structural Engineering	23/08/2023	1.8	Assistant Professor	Assistant Professor		Regular	No	09/05/2025	No

15	Mr. Dinesh Madhukar Sutar	DDEPS5245F	NA	M.Tech	Savitribai Phule Pune University, Pune	Construction and Management	28/08/2023	1.9	Assistant Professor	Assistant Professor		Regular	No	10/06/2025	No

5.1 Student-Faculty Ratio (SFR) (30) Total Marks 18.00

Institute Marks : 18

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

Civil Engineering						
Year of Study	**CAY**		**CAYm1**		**CAYm2**	
	(2025-26)		**(2024-25)**		**(2023-24)**	
	Sanction Intake	**Actual admitted through lateral entry students**	**Sanction Intake**	**Actual admitted through lateral entry students**	**Sanction Intake**	**Actual admitted through lateral entry students**
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

Civil Engineering

Description	CAY(2025-26)	CAYm1 (2024-25)	CAYm2 (2023-24)
UG1.B	66	66	66
UG1.C	66	66	66
UG1.D	66	66	66
UG1: Civil Engineering	**198**	**198**	**198**
DS=Total no. of students in all UG and PG programs in the Department	198	198	198
AS=Total no. of students of all UG and PG programs in allied departments	0	0	0
S=Total no. of students in the Department (DS) and allied departments (AS)	**S1=** 198	**S2=** 198	**S3=** 198
DF=Total no. of faculty members in the Department	12	14	14
AF= Total no. of faculty members in the allied Departments	0	0	0
F=Total no. of faculty members in the Department (DF) and allied Departments (AF)	**F1=** 12	**F2=** 14	**F3=** 14
FF=The faculty members in F who have a 100% teaching load in the first-year courses	3	3	3
Student Faculty Ratio (SFR)=S/(F-FF)	**SFR1= 22.00**	**SFR2= 18.00**	**SFR3= 18.00**
Average SFR for 3 years	**SFR= 19.33**		

Average SFR for three assessment years : 19.33

Assessment SFR : 18

5.2 Faculty Qualification (25)

Total Marks 20.93

Institute Marks : 20.93

Year	X	Y	RF	FQ = 2.5 x [(10X + 4Y) / RF)]
2025-26(CAY)	6	6	9.00	23.33
2024-25(CAYm1)	3	11	9.00	20.56
2023-24(CAYm2)	2	12	9.00	18.89

Average Assessment : 20.93

5.3 Faculty Cadre Proportion (25)

Total Marks 25.00

Institute Marks : 25.00

Year	Professors		Associate Professors		Assistant Professors	
	Required F1	Available	Required F2	Available	Required F3	Available
CAY(2025-26)	1.00	1.00	2.00	3.00	6.00	8.00
CAYm1(2024-25)	1.00	1.00	2.00	2.00	6.00	11.00
CAYm2(2023-24)	1.00	0.00	2.00	2.00	6.00	12.00
Average Numbers	1.00	0.67	2.00	2.33	6.00	10.33

Cadre Ratio Marks [(AF1 / RF1) + [(AF2 / RF2) * 0.6] + [(AF3 / RF3) * 0.4]] * 12.5 : 25.00

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

Total Marks 10.00

Institute Marks : 10.00

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	No. of hours handled
1	Mr. Kirankumar Joshi	Principal Structural Engineer	Nine Era Engineering Consultants, Mumbai	Design Principles of High-Rise Buildings	25.00
2	Mr. Kirankumar Joshi	Principal Structural Engineer	Nine Era Engineering Consultants, Mumbai	Design Principles of High-Rise Buildings	30.00

(CAYm2) 2023-24

S.No	Name of the Person	Designation	Organization	Name of the Course	No. of hours handled
1	Mr. Vikram Jitendrakumar Patel	Quality control Engineer	MAPE Construction project	Infrastructural Engineering	25.00
2	Mr. Vikram Jitendrakumar Patel	Quality control Engineer	MAPE Construction project	Quality control in Construction Industry	30.00

(CAYm3) 2022-23

S.No	Name of the Person	Designation	Organization	Name of the Course	No. of hours handled
1	Mr. Chayan Bansal	Project Engineer	Make my House Indore	Construction Management	25.00
2	Mr. Chayan Bansal	Project Engineer	Make my House Indore	Construction Management	30.00

5.5 Faculty Retention (10)

Total Marks 10.00

Institute Marks : 10.00

Description	2024-25 (CAYm1)	2023-24 (CAYm2)	2022-23 (CAYm3)
RF=No. of required faculty in the Department including allied Departments 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=S/20).	9	9	9
AF=The no. of available faculty members in the Department including allied Departments	14	14	12
A= The no. of faculty members at the current institute with less than 1 year of experience (A in AF)	0	0	0
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)	3	2	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)	0	0	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)	1	1	1
E= The no. of faculty members at the current institute with more than 4 years of experience (E in AF)	10	11	9
FR=(((A*0) +(B*1)+(C*2)+(D*3)+(E*4))/RF) *2.50 (points limited to 10)	10	10	10

Average : 10.00

Assessment Marks : 10.00

6 FACULTY CONTRIBUTIONS (120)

Total Marks 89.00

6.1 Professional Development Activities (60)

Total Marks 60.00

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

Institute Marks : 5.00

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	Name of the Grade/ Level/Position
1	Ganesh V Tapkire	ISTE , IEI	Life member
2	Hemraj R Kumavat	IEI, ISNT, ISTE, IWEES, IAENG	Life member
3	Yogesh N Sonawane	ISTE	Life member
4	Pramod S Patil	ISTE, IAENG	Life member
5	Chetan J Chitte	ISTE, IAENG	Life member
6	Mahesh N Patil	ISTE, IAENG, IAWEES	Life member
7	Rajendra D Patil	IAWEES, IAENG	Member
8	Aakash S Pawar	ISTE, IAENG	Life member
9	Hiteshkumar S Patil	IEI	Life member
10	Hemraj R Kumavat	IEI	IEI Student chapter

6.1.2 Faculty as Resource Persons or Participants in STTPs/FDPs (10)

Institute Marks : 5.00

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	Mahesh N Patil	Hands on Training Programme on Total Station or DGPS	16/11/2024	Nagpur	KITS Ramtek Nagpur
2	Yogesh N Sonawane	Hands on Training Programme on Total Station or DGPS	16/11/2024	Nagpur	KITS Ramtek Nagpur
3	Aakash S Pawar	Smart materials and infrastructure, Self curing of concrete	16/09/2024	Nagpur	Surodaya college of Engineering, Nagpur
4	Pramod S Patil	Smart materials and infrastructure, Self curing of concrete	16/09/2024	Nagpur	Surodaya college of Engineering, Nagpur

(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	Mahesh N Patil	FDP on Creating active learners	07/08/2023	Indore	Oriental University Indore
2	Ganesh V Tapkire	FDP on Creating active learners	07/08/2023	Indore	Oriental University Indore
3	Hiteshkumar S Patil	Innovation of Bridge and Highway Engineering	18/12/2023	Nagpur	Surodaya college of Engineering, Nagpur
4	Jitendra M Joshi	Innovation of Bridge and Highway Engineering	18/12/2023	Nagpur	Surodaya college of Engineering, 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	Hiteshkumar S Patil	Introduction to professional practice in RCC Construction	08/08/2022	Nagpur	KITS Ramtek Nagpur
2	Hemraj R Kumavat	Hands on training program on Total Station	14/11/2022	Nagpur	KITS Ramtek Nagpur
3	Pramod S Patil	Five day FDP on Creating an Entrepreneurship ecosystem in higher education Institution	04/03/2023	Indore	Oriental University Indore
4	Ganesh V Tapkire	Five day FDP on Creating an Entrepreneurship ecosystem in higher education Institution	04/03/2023	Indore	Oriental University Indore

6.1.2.2 Faculty Members' Participation in STTPs/FDPs (5) Institute Marks : 5.00

Name of the faculty	Max 5 Per Faculty		
	2024-25(CAYm1)	2023-24(CAYm2)	2022-23(CAYm3)
Ganesh V Tapkire	5.00	5.00	5.00
Hemraj R Kumavat	5.00	5.00	5.00
Yogesh N Sonawane	5.00	5.00	5.00
Pramod S Patil	5.00	5.00	5.00
Chetan J Chitte	5.00	5.00	5.00
Mahesh N Patil	5.00	5.00	5.00
Rajendra D Patil	5.00	5.00	5.00
Aakash S Pawar	5.00	5.00	5.00
Jitendra M Joshi	5.00	5.00	5.00
Rahul K Pawar	5.00	5.00	5.00
Hiteshkumar S Patil	5.00	5.00	5.00
Tushar S Bhamre	5.00	0.00	0.00
Sum	60.00	55.00	55.00
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)= (Sum/(0.5* RDF)) (Points limited to 5 for each assessment year)	5.00	5.00	5.00

Average assessment over 3 years: 5.00

6.1.3 Faculty Contribution in Development of SWAYAM MOOCs and other E-Content (7) Institute Marks : 5.00

Table No. 6.1.3.1: List of faculty members developed MOOC course for the past 3 years.

S.No	Name of the Faculty	Name of the Course Developed and available online on Swayam platform by your Department faculty
1	Hemraj R Kumavat	https://www.youtube.com/watch?v=5qYleSwdhDc&t=36s
2	Hemraj R Kumavat	https://www.youtube.com/watch?v=2MPKITWaQM4
3	Hemraj R Kumavat	https://www.youtube.com/watch?v=kI-EhALr53I
4	Hemraj R Kumavat	https://www.youtube.com/watch?v=nXrhofEkNIE&t=45s
5	Pramod S Patil	https://www.youtube.com/watch?v=qY-6nYfQ21o
6	Pramod S Patil	https://www.youtube.com/watch?v=RH9knNXHLYc
7	Mahesh N Patil	https://www.youtube.com/watch?v=RxI0OmCvSVA
8	Mahesh N Patil	https://www.youtube.com/watch?v=IG0FXb6TWBU
9	Hiteshkumar S Patil	https://www.youtube.com/watch?v=lD2h_BogSOM
10	Ganesh V Tapkire	https://rcpitmoodle.in/moodle/user/profile.php?id=24685
11	Yogesh N Sonawane	https://rcpitmoodle.in/moodle/user/profile.php?id=24687
12	Hemraj R Kumavat	https://rcpitmoodle.in/moodle/user/profile.php?id=24686
13	Pramod S Patil	https://rcpitmoodle.in/moodle/user/profile.php?id=24688
14	Chetan J Chitte	https://rcpitmoodle.in/moodle/user/profile.php?id=24689
15	Mahesh N Patil	https://rcpitmoodle.in/moodle/enrol/index.php?id=72146
16	Rajendra D Patil	https://rcpitmoodle.in/moodle/user/profile.php?id=36686
17	Aakash S Pawar	https://rcpitmoodle.in/moodle/enrol/index.php?id=72143
18	Jitendra M Joshi	https://rcpitmoodle.in/moodle/user/profile.php?id=24694
19	Rahul K Pawar	https://rcpitmoodle.in/moodle/user/profile.php?id=36672
20	Hiteshkumar S Patil	https://rcpitmoodle.in/moodle/user/profile.php?id=39378
21	Tushar S Bhamare	https://rcpitmoodle.in/moodle/user/profile.php?id=62820

6.1.4 Faculty Certification of MOOCs through SWAYAM, etc. (8)

Institute Marks : 10.00

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)	Grade obtained if any
1	Aakash S Pawar	144- AI/ML for Geodata Analysis (19 to 23 Aug 2024)	ISRO (IIRS)	Pass
2	Pramod S Patil	144- AI/ML for Geodata Analysis (19 to 23 Aug 2024)	ISRO (IIRS)	Pass
3	Rajendra D Patil	144- AI/ML for Geodata Analysis (19 to 23 Aug 2024)	ISRO (IIRS)	Pass
4	Hiteshkumar S Patil	144- AI/ML for Geodata Analysis (19 to 23 Aug 2024)	ISRO (IIRS)	Pass
5	Tushar S Bhamare	144- AI/ML for Geodata Analysis (19 to 23 Aug 2024)	ISRO (IIRS)	Pass
6	Rajendra D Patil	146- Basics of “Remote Sensing, Geographical Information System and Global Navigation Satellite System (27 Aug to 22 Nov 2024)	ISRO (IIRS)	Pass
7	Aakash S Pawar	147- Remote Sensing and Digital Image Analysis (27 Aug to 20 Sept 2024)	ISRO (IIRS)	Pass
8	Rajendra D Patil	147- Remote Sensing and Digital Image Analysis (27 Aug to 20 Sept 2024)	ISRO (IIRS)	Pass
9	Yogesh N Sonawane	Affordable Housing in Disaster Prone Areas	NITTTR, Chandigarh	Pass
10	Yogesh N Sonawane	Structural Design with STAAD PRO	NITTTR, Chandigarh	Pass
11	Yogesh N Sonawane	Defect free Construction Repair and Maintenance	NITTTR, Chandigarh	Pass
12	Mahesh N Patil	Structural Design with STAAD PRO Conducted	NITTTR, Chandigarh	Pass
13	Mahesh N Patil	Affordable Housing in Disaster Prone Areas Conducted by Rural Development	NITTTR, Chandigarh	Pass
14	Aakash S Pawar	Surface Water Hydrology	NPTEL	Pass
15	Chetan J Chitte	Affordable Housing Techniques and Practices	NITTTR, Chandigarh	Pass
16	Yogesh N Sonawane	Affordable Housing Techniques and Practices	NITTTR, Chandigarh	Pass
17	Aakash S Pawar	Affordable Housing Techniques and Practices	NITTTR, Chandigarh	Pass
18	Rahul K Pawar	Application of Auto CAD in Engineering	NITTTR, Chandigarh	Pass
19	Hiteshkumar S Patil	Application of Auto CAD in Engineering	NITTTR, Chandigarh	Pass
20	Hiteshkumar S Patil	Affordable Housing Techniques and Practices	NITTTR, Chandigarh	Pass
21	Pramod S Patil	Affordable Housing Techniques and Practices	NITTTR, Chandigarh	Pass
22	Mahesh N Patil	Affordable Housing Techniques and Practices	NITTTR, Chandigarh	Pass
23	Aakash S Pawar	106- Remote sensing and GIS technology	ISRO (IIRS)	Pass
24	Ganesh V Tapkire	Business Analysis & Process Management	Coursera	Pass
25	Ganesh V Tapkire	Introduction to Data Analysis using Microsoft Excel	Coursera	Pass
26	Ganesh V Tapkire	Project Scheduling: Estimate Activity Durations	Coursera	Pass

27	Yogesh N Sonawane	Sustainability of Social-Ecological Systems: the Nexus between Water, Energy and Food	Coursera	Pass
28	Yogesh N Sonawane	Global Energy and Climate Policy	Coursera	Pass
29	Yogesh N Sonawane	Natural Gas	Coursera	Pass
30	Yogesh N Sonawane	Our Energy Future	Coursera	Pass
31	Yogesh N Sonawane	Safety in the Utility Industry	Coursera	Pass
32	Jitendra M Joshi	Basics of Quantum Mechanics	IIT, Kanpur	Pass

6.1.5 FDP/STTP Organized by the Department (10)

Institute Marks : 10.00

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	No. of People Attended
1	Cutting-Edge Materials for Resilient and Sustainable Civil Projects	03/12/2024	7 days	Dr. N. R. Chandak, Dr Sanjay Mahajan, Dr. H. R. Kumavat, Dr. H. S. Patil	40
2	Recent Advances in Structural Engineering and Construction Technologies	19/05/2025	5 days	Dr. S. K. Dubey, Ms. Neha Palatkar, Dr. M. N. Patil, Mr. Y. N. Sonawane	35

(CAYm2) 2023-24

S.No	Name of the Program	Date of the Program(DD/MM/YYYY)	Duration	Name of the Speaker & Designation and Organization	No. of People Attended
1	Green Technologies and Environmental Management in Civil Engineering	25/12/2023	5 days	Mr. Pankaj Patil, Ms. Priyanka Nagdive, Mr. V. R. Kumbhare, Mr. G. V. Tapkire, Mr. P. S. Patil	31
2	Sustainable Construction Practices and Environmental Engineering Innovations	13/05/2024	5 days	Ms. Priti More, Dr. M. K. Chouragade, Mr. P. S. Patil, Mr. R. K. Pawar	33

(CAYm3) 2022-23

S.No	Name of the Program	Date of the Program(DD/MM/YYYY)	Duration	Name of the Speaker & Designation and Organization	No. of People Attended
1	Smart Cities : Infrastructure and Sustainability	09/01/2023	6 Days	Dr. A. N. Dabhade, Dr. S K Dubey, Mr. P. S. Patil, Mr. C. J. Chitte	37
2	Modern Construction Techniques and Project Management Practices	22/05/2023	5 days	Dr. Shrikant Randawane, Mr. S. P. Kawale, Dr. H. S. Patil, Mr. R. D. Patil	36

6.1.6 Faculty Support in Student Innovative Projects (10)

Institute Marks : 10.00

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	Website Link if any
1	Hemraj R Kumavat	Smart India Hakthon 2024	10/12/2024	Coimbatore, Tamilnadu	NA
2	Aakash S Pawar	Kalika Kreate Compition 2025	16/09/2025	Jalna, Maharashtra	NA
3	Ganesh V Tapkire	SHAPATYAM 2024	13/11/2024	SVKM Institute of Technology, Dhule	NA
4	Rajendra D Patil	TECH FEST 2K25 (Bridge It)	17/04/2025	KBT COE, Nashik	NA
5	Mahesh N Patil	AVISHKAR-2024	25/10/2024	R C Patel Institute of Technology, Shirpur	NA
6	Aakash S Pawar	AVISHKAR-2024	10/11/2024	Godavari college, Jalgaon	NA
7	Ganesh V Tapkire	Smart India Hackathon (Phase –II Institute Level)	03/09/2024	RCPIT Shirpur	https://sih.gov.in/sih2024PS

(CAYm2) 2023-24

S.No	Name of the Faculty	Name of the Event	Date of the Event(DD/MM/YYYY)	Place of Event	Website Link if any
1	Ganesh V Tapkire	Smart India Hackathon (Phase –II Institute Level)	23/09/2023	RCPIT Shirpur	NA

(CAYm3) 2022-23

S.No	Name of the Faculty	Name of the Event	Date of the Event(DD/MM/YYYY)	Place of Event	Website Link if any
1	Rajendra D Patil	Avishkar (Zonal level) Humanities, Languages and Fine Arts - UG Category in Avishakar 2022	10/12/2022	SSVPSBSDCOE Dhule	NA

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

Institute Marks : 10.00

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	Pramod S Patil	Industrial Internship in Construction Practices	Quantum Industries	2 Weeks	Gained practical exposure to site execution, quality control procedures.
2	Mahesh N Patil	Structural Engineering Internship	Infinity Structural Solution, Pune	2 Weeks	Enhanced understanding of structural design concepts, analysis methods, detailing practices.
3	Aakash S Pawar	Construction Management Internship	Adi Constro, Pune	2 Weeks	Acquired hands-on experience in project planning, site supervision, resource scheduling
4	Hiteshkumar S Patil	Industrial Internship in Construction Technology	Quantum Industries	2 Weeks	Developed skills in modern construction techniques, site inspection
5	Pramod S Patil	Internship on Sustainable Housing Practices	Make My House	2 Weeks	Gained insights into green building concepts, residential planning
6	Hemraj R Kumavat	Total Station Training	Swanshilpa Construction	10 Days	Developed proficiency in surveying using Total Station
7	Jitendra M Joshi	Industrial Internship in Construction Engineering	Quantum Industries	2 Weeks	Strengthened practical knowledge of construction execution, site management
8	Aakash S Pawar	Industry–Institute Collaboration in Infrastructure Projects	Savessha Infra, Pune	2 Weeks	Gained exposure to infrastructure project planning, execution strategies
9	Yogesh N Sonawane	AutoCAD Training	AV Consultant, Jalgaon	2 Weeks	Enhanced drafting and detailing skills using AutoCAD for civil engineering drawings

6.2 Research and Development Activities (60) Total Marks 29.00

6.2.1 Academic Research (10)

Institute Marks : 10.00

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	3	9	1
2	No. of peer reviewed conference papers published	3	3	6
3	No. of books/book chapters published	1	0	0

6.2.2 Ph.D. Student Details (5)

Institute Marks : 5.00

Table No. 6.2.2.1: Ph.D. details.

S.No.	Item	2024-25 (CAYm1)	2023-24 (CAYm2)	2022-23 (CAYm3)
1	No. of students enrolled for Ph.D. in the Department	0	0	0
2	No. of Ph.D. students graduated in the Department	0	0	0

6.2.3 Development Activities (10)

Institute Marks : 10.00

Table No.: Patent Details

S.N.	Name of Authors	Title of Patent	Application No.	Granted/Published
CAYm1 (2024-25)				
1	Hemraj R Kumavat	Advanced Skull Identification System for Comprehensive Forensic and Security Applications	202421053919	567220-Granted (6/6/2025)
2	Hemraj R Kumavat	Smart Baby Monitor for Contactless Vital Sensing with Real-Time AI Analysis and Alerts	202421073698	567774 - Granted (24/6/2025)
3	Hemraj R Kumavat	Portable carbon capture and storage technology for sustainable construction practices	202421057533	Published
4	Hemraj R Kumavat	Advanced Self-Healing Concrete for Enhancing Structural Integrity and Sustainability through Embedded Microcapsules	202421058250	Published
5	Hemraj R Kumavat	Autonomous Robotic System For Non-Invasive Archaeological Exploration, Sample Analysis, And Site Preservation	202421076846	Published
6	Hemraj R Kumavat	Autonomous Rebar Tying Robot with Ai-Driven Navigation and Worker Safety Features for Construction	202421084001	Published
7	Hemraj R Kumavat	Integrated Smart Tunnel Health Managing System With Autonomous Monitoring, Maintenance, And Energy-H	202421102568	Published
8	Hemraj R Kumavat, Yogesh N Sonawane, Mahesh N Patil	Beam Reaction Apparatus	420776-001	Registered

9	Hemraj R Kumavat	Road lane marking machine	423233-001	Registered
10	Hemraj R Kumavat	Hydraulic height adjustable device for basin	424142-001	Registered
11	Hemraj R Kumavat	Soil liquefaction demonstration apparatus	425002-001	Registered
12	Hemraj R Kumavat	CO_2 Extractor	439447-001	Registered
13.	Kumavat, Yogesh N Sonawane, Mahesh N Patil	Apparatus for slope deflection of beam	444066-001	Registered
(2023-24)				
1	Hemraj R Kumavat, V J Patel	A centralized system to manage road traffic and safety of the city using server Monitoring facilities.	201821006430	525893 (Granted)
2	Hemraj R Kumavat	Soil Extractor Equipment	391885-001	Registered
3	Hemraj R Kumavat, L S Mahajan	Construction Safety Helmet	400214-001	Registered
4	Hemraj R Kumavat	Injection Mold Plate	400254-001	Registered
5	Hemraj R Kumavat	Helical cum Anchor pile	400324-001	Registered
6	Hemraj R Kumavat, Rajendra D Patil	Concrete Mixer	401283-001	Registered
7	Hemraj R Kumavat	IOT based smart door with frame	402779-001	Registered
8	Hemraj R Kumavat	Smart Screen for digital education	408330-001	Registered
10	Hemraj R Kumavat	Digital density bucket for aggregate	412781-001	Registered
11	Hemraj R Kumavat	Autonomous fire detection robot	417022-001	Registered
(2022-23)				

1	Hemraj R Kumavat, Ganesh V Tapkire, V J Patel	A Methodology to obtain Eco- friendly Construction Material and a Mechanism to verify its stability	201721043919	479999 (Granted)
2	Hemraj R Kumavat, V J Patel	A system to manage the generation and distribution of green energy with efficient transmission lines.	201821006400	407563 (Granted)
3	Hemraj R Kumavat	Fatigue Testing Machine	368173-001	Registered
4	Hemraj R Kumavat, Rajendra D Patil	Water tank ventilator	368611-001	Registered
5	Hemraj R Kumavat	Wind Vibrating Generator	374610-001	Registered
6	Hemraj R Kumavat, Y N Sonawane, Rajendra D Patil	Compaction Test Apparatus	377360-001	Registered
7	Hemraj R Kumavat	Water Flow Energy Generator	382973-001	Registered

6.2.4 Sponsored Research Project (15)

Institute Marks : 1.00

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 project	Amount(Lacs) i.e. 15,25,000=15.25
Hemraj R Kumavat	Aakash S Pawar	Civil Engineering Dept.	Tapi River Suicide Attempt Remedial Action	Gram Panchayat, Savalda	6 months	0.48
Pramod S Patil	Tushar S Bhamre	Civil Engineering Dept.	Sustainability Assessment: Energy and Green Audit – RCPIT	Ashram School, Tarhadi	6 months	0.44
						Amount received (Rs.):0.92

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 project	Amount(Lacs) i.e. 15,25,000=15.25
Yogesh N Sonawane	Ganesh V Tapkire	Civil Engineering Dept.	Aesthetic Planning of Garden at Janikaran Nagar	Badgujar Associates, Shirpur	6 months	0.37
Hiteshkumar S Patil	Aakash S Pawar	Civil Engineering Dept.	Bio-brick Development of Sustainable and Cost-effective Building Material	Vijay Developers, Nashik	6 months	0.42
						Amount received (Rs.):0.79

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 project	Amount(Lacs) i.e. 15,25,000=15.25

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.

6.2.5 Consultancy Work (15) Institute Marks : 1

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 project	Amount(Lacs) i.e. 15,25,000=15.25
Rajendra D Patil	Ganesh V Tapkire	Civil Engineering Dept.	Elevated Storage Reservoir Inspection & Testing Report At Village Bamhane, Tal: Shindhkheda, Dist: Dhule.	Grampanchayat Bamhane & Zilla Parishad Dhule	22/01/2025	0.16
Ganesh V Tapkire	Hiteshkumar S Patil	Civil Engineering Dept.	Cube testing work	Tathya Spinner Ltd.	20/03/2025	0.03
Ganesh V Tapkire	Hiteshkumar S Patil	Civil Engineering Dept.	Cube testing work	Shirpur construction	20/03/2025	0.18
Ganesh V Tapkire	Hiteshkumar S Patil	Civil Engineering Dept.	Concrete Mix design	Nitin Baviskar	22/03/2025	0.12
Ganesh V Tapkire	Hiteshkumar S Patil	Civil Engineering Dept.	Testing of aggregate	SMYLE Housing Pvt Ltd	04/07/2024	0.02
						Amount received (Rs.):0.51

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 project	Amount(Lacs) i.e. 15,25,000=15.25
Rajendra D Patil	G V Tapkire	Civil Engineering Dept.	Elevated Storage Reservoir Inspection & Testing Report At Village Bhatane, Tal: Shirpur, Dist: Dhule.	Grampanchayat Bhatane & Zilla Parishad Dhule	18/04/2024	0.16
Hemraj R Kumavat	Ganesh V Tapkire	Civil Engineering Dept.	Cube testing work	Shirpur construction	15/04/2024	0.26
Ganesh V Tapkire	Hiteshkumar S Patil	Civil Engineering Dept.	Testing of aggregate	SMYLE Housing Pvt Ltd	06/02/2024	0.01
Hemraj R Kumavat	Ganesh V Tapkire	Civil Engineering Dept.	Cube testing work	Shirpur construction	10/08/2023	0.24
						Amount received (Rs.):0.67

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 project	Amount(Lacs) i.e. 15,25,000=15.25
Hemraj R Kumavat	Rajendra D Patil	Civil Engineering	Structural Audit- ESR at Amlthe	Gram panchayat	16/07/2022	0.15
Hemraj R Kumavat	Rajendra D Patil	Civil Engineering	Structural Audit- ESR at Mudawad	Gram panchayat	16/7/2022	0.15
						Amount received (Rs.):0.30

Total amount (Lacs) received for the past 3 years: 1.48

Note*:

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

6.2.6 Institution Seed Money or Internal Research Grant to its Faculty for Research Work(5)

Institute Marks : 0.00

6.2.6 A Amount received (3)

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	Outcomes of the project
Ganesh V Tapkire	Innovative Material Sorting Techniques for CD Waste	3 Months	0.33	0.33	Paper published in SSRG Journal
Rajendra D Patil	Performance of Concrete with Various Recycled Aggregates	6 Months	0.82	0.82	Paper published in ETASR Journal
			Amount received (Rs.): 1.15		

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(Lacs) i.e. 15,25,000=15.25	Outcomes of the project
Chetan J Chitte	Structural Performance of RCC Framed Elevated Circular Shape Tank in the Indian Region	1 Yr	0.33	0.33	Paper published in Journal of SSRG
Pramod S. Patil	Comparative Study of Water Quality Index of the Tapi River Basin in Northern Maharashtra	1Yr	0.36	0.36	Research Work Published
			Amount received (Rs.): 0.69		

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	Outcomes of the project
Ganesh V Tapkire	Third International Conference on Advances in Management, Engineering & Technology (ICAMET-2023)	1 Day	0.02	0.02	Multidisciplinary learning
Pramod S Patil	International Conference	1 Day	0.02	0.02	Contribution to global academic discourse.
			Amount received (Rs.): 0.04		

Total amount (Lacs) received for the past 3 years : 1.88

6.2.6 B Amount utilized (2) Institute Marks : 2.00

Research publication, paper presentation at international conference, man power and material required for experimental studies, chemical and physical testing of materials in research laboratories.

7 FACILITIES AND TECHNICAL SUPPORT (100) Total Marks 100.00

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

Total Marks 40.00

Institute Marks : 40.00

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	Concrete Techr	20	Abrasion testin	18 Hrs/Week	Mr. Prafulla Dil	Lab Assistant	Diploma Civil
2	Surveying and	20	Standard verni	22 Hrs/Week	Mr. Anil Deorar	Lab Assistant	Diploma Civil
3	Geotech. Labo	20	Shrinkage limit	24 Hrs/Week	Mr. Prafulla Dil	Lab Assistant	Diploma Civil
4	Fluid Mechanic	20	Open Circuit W	24 Hrs/Week	Mr. Chandraka	Lab Assistant	Diploma Mecha
5	Environmental	20	UV Photospect	24 Hrs/Week	Mr. Chandraka	Lab Assistant	Diploma Mecha
6	Model Laborat	20	Plate Girder Br	24 Hrs/Week	Mr. Anil Deorar	Lab Assistant	Diploma Civil

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

Total Marks 20.00

Institute Marks : 20.00

Sr. No	Name of the Facility	Details	Purpose for creating facility	Utilization	Relevance to POs/PSOs
1	Modern Testing Equipment	Install advanced Universal Testing Machines (UTM), Non-Destructive Testing (NDT) kits, and Digital Surveying Instruments	Helps students gain hands-on experience with advanced instruments used in industry	Prepares students with practical skills demanded by employers and industries	PO1,PO2,PO3,PO4,PO5,PO12
2	Simulation Software	The Civil Engineering laboratory is equipped with licensed simulation software such as STAAD.Pro, ETABS, and AutoCAD Civil 3D to support lab-integrated learning, enabling students to perform structural analysis, design, and infrastructure modeling in line with industry practices.	Helps students apply classroom concepts to real-world design and analysis problems	Perform terrain modeling, road alignment design, and volume estimation in AutoCAD Civil 3D.Research scholars & project students	PO1,PO2,PO3,PO4,PO5,P12, PSO1, PSO2
3	Smart Board	Smart board IWB(Interactive white Board)	To make teaching and learning process more effective	To support ICT- based teaching-learning process	PO1, PO2, PSO2
4	Licensed software	such as ETABS, STAAD Pro, MATLAB, AutoCAD Civil 3D	The institute has effectively integrated MOOCs and industry-supported online learning platforms with laboratory activities to enhance the quality of learning in software simulation and analysis laboratories. Courses offered through NPTEL, Coursera, SWAYAM, and industry certification platforms are aligned with laboratory experiments, tutorials, and project work	All students. (for hands-on learning experiences & rapidly prototype)	PO1,PO2,PO3,PO4,PO5,PO12
5	Self-explanatory Charts	Charts	Better understanding of concepts	All students	PO1,PO2,PO10, PSO1, PSO2
6	Departmental Library	Technical Books, Datasheets, Project reports of students	Provide students access to books and project reports of previous academic years	Learning and understanding the concept of projects	PO3, PSO1, PSO2

7	Virtual Lab	The Virtual Labs project provides remote-access to simulation-based Labs in Electronics and Telecommunication Engineering	To enthuse students to conduct experiments by arousing their curiosity. To provide a complete Learning Management System around the Virtual Labs where the students can avail the various tools for learning including additional web-resources, animated demonstrations and self-evaluation	To help students in learning basic and advanced concepts through remote experimentation	PO2, PO3, PO4, PO5,PO9, PO10, PO12, PSO2, PSO3
8	Campus Credentials	Provides in demand corporate skills, aptitude and technical Training	The purpose of Campus Credentials is to equip students with the skills and knowledge required to excel in campus placements and competitive examinations, making them industry-ready	Aptitude Training Soft Skills Training / Soft Skills Development Technical Skills Training Mock Interviews (Technical & HR) Group Discussion (GD) Training Company-Specific Training / Corporate-Specific Training Aptitude Test Series Technical Test Series Proctored Online Tests / Proctored Assessment Environment Individual Student Login / Personalized Login Access Practice Test Series / Mock Test Series LMS (Learning Management System) Access	PO1, PO2, PO3, PO8, PO10, PO11, PO12
9	3D Printer	Desktop 3D printer with CAD software support; used for printing geometric models, graphs, and mathematical structures	To visualize abstract mathematical concepts and enhance experiential learning through physical models	Used to create 3D models of surfaces, solids, curves and optimization models for classroom demonstrations, projects, and student activities	PO1, PO2, PO5, PSO1

10	NPTEL Online Learning Facility	NPTEL (National Programme on Technology Enhanced Learning) is an online learning platform offering video lectures, assignments, and certification courses in mathematics and allied disciplines, developed by IITs and IISc. The facility provides access to high-quality academic content, quizzes, and proctored examinations	The facility was created to enhance conceptual understanding of mathematics through expert-led instruction and to support outcome-based education. It promotes self-paced learning, bridges curriculum gaps, and exposes students to advanced and applied mathematical topics beyond the syllabus	Students utilize the facility to enroll in mathematics-related NPTEL courses, complete weekly assignments, participate in discussions, and obtain certifications. The platform is used for blended learning, credit transfer (where applicable), exam preparation, and faculty-guided enrichment activities	PO1, PO2, PO3, PO5, PSO1, PSO2
11	Learning Management System Moodle	It is a fully Customizable Learning Management System	Moodle has forums, messaging, chat, comments, and blog posts available for students and teachers to communicate beyond the classroom	To provide educators, administrators and learners with a single robust, secure and integrated system to create personalized learning environments	PO1, PO3, PO4, PO5, PO8, PO9, PO10, PSO2
12	Solar Roof Top System	Grid-connected rooftop solar photovoltaic (PV) system (320KW) installed on the institute building with solar panels, inverter, monitoring unit, and safety accessories	To promote renewable energy usage, reduce electricity consumption from conventional sources, and create awareness about sustainable energy solutions	Used for power generation for campus electrical loads, student laboratory demonstrations, projects related to renewable energy, energy auditing, and research activities	PO1, PO2, PO3, PO6, PO7, PO11, PO12
13	LCD Projectors	Good Quality LCD Projectors are available	Projectors available to make teaching & learning effective	To support ICT-based teaching-learning process in Laboratories	PO1, PO2, PO5, PO10, PSO2
14	Turnitin / Copyleaks Plagiarism Software	Turn-it-in / Copy leaks Plagiarism Software solutions promote academic integrity, streamline grading and feedback, deter plagiarism, and improve student outcomes	To provide students with a tool to identify and correct possible occurrences of plagiarism in their own work and improve their academic writing	To help students to identify occurrences of plagiarism	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO2

7.3 Maintenance of laboratories and overall ambiance (10) Total Marks 10.00

Institute Marks : 10.00

Maintenance Policy

The Civil Engineering Department follows a well-defined and systematic maintenance policy to ensure that all laboratory equipment, setups and testing machines remain in proper working condition. The primary objective of this policy is to ensure safe operation of equipment, prevent unexpected breakdowns, and facilitate the smooth conduct of practical sessions and testing activities.

Regular inspection, cleaning, servicing, and functional checking of instruments such as compression testing machines, surveying equipment, and other laboratory apparatus are carried out throughout the academic year. Calibration and performance verification of major equipment are conducted periodically as per standards. Each laboratory maintains a maintenance register to record inspection details, faults identified, repairs undertaken, and corrective measures implemented. The technical staff monitor the condition of equipment and promptly report any malfunction or damage. This policy ensures safety, accuracy in testing, reliability of results, and uninterrupted laboratory functioning.

Corrective & Preventive Maintenance

The Department follows both preventive and corrective maintenance practices to ensure proper functioning of laboratories.

Preventive Maintenance:

Preventive maintenance is carried out regularly to avoid equipment failure. It includes visual inspection, cleaning of equipment and surroundings, checking electrical connections, verifying safety measures, testing equipment performance, and carrying out minor repairs if required. All maintenance details are recorded in the log book before approving the equipment for regular use. The preventive maintenance procedure is shown in Figure 7.3.1.

Corrective Maintenance:

Corrective maintenance is done when a fault or problem is identified in any laboratory equipment. The fault is first recorded in the maintenance register. Initial inspection and basic troubleshooting are performed. If the problem cannot be solved in the laboratory, a maintenance request is prepared and approval is taken from higher authorities. Repair or replacement is carried out through authorized vendors if required. After repair, the equipment is tested, records are updated, and verification is done before restarting laboratory work. The corrective maintenance process is shown in Figure 7.3.2.

Overall Ambiance

The Civil Engineering Department maintains a clean, safe, and student-friendly laboratory environment to support effective practical learning. All laboratories are well-ventilated, adequately illuminated, and systematically arranged to create a comfortable and organized atmosphere for students. Proper seating arrangements and sufficient working space are provided to ensure smooth conduct of practical sessions and testing activities.

Safety guidelines, Dos and Don’ts, and Standard Operating Procedures (SOPs) are clearly displayed in each laboratory. Necessary safety provisions such as fire extinguishers, first-aid kits, and electrical safety measures are available to ensure a secure working environment. Good housekeeping practices are regularly followed to maintain cleanliness, discipline, and proper handling of materials and equipment.

The laboratories are equipped with essential furniture, stable power supply arrangements, water supply where required, and proper storage facilities for tools, testing instruments, and materials. The overall ambience promotes effective teaching–learning processes, accurate experimentation, and safe laboratory operations.

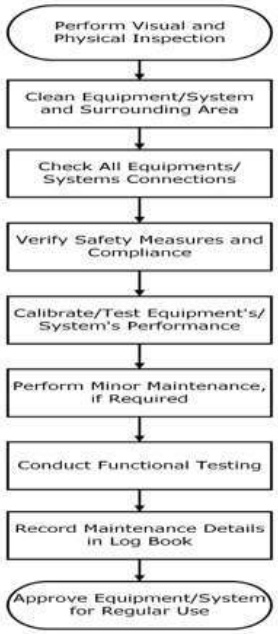


Figure 7.3.1 Preventive Maintenance Flowchart

Figure 7.3.2 Corrective Maintenance Flowchart

7.4 Safety measures in laboratories (10) Total Marks 10.00

Institute Marks : 10.00

Sr. No	Laboratory Name	Safety Measures
1	Concrete Technology Laboratory	A. Basic safety measures: Do's and Don’ts, SOP. B. Lab-specific safety measures: First-aid box, CCTV Surveillance, Fire safety and Electrical Safety.
2	Surveying & Testing of Materials Laboratory	A. Basic safety measures: Do's and Don’ts, SOP. B. Lab-specific safety measures: First-aid box, CCTV Surveillance, Fire safety and Electrical Safety.
3	Geotech. Laboratory	A. Basic safety measures: Do's and Don’ts, SOP. B. Lab-specific safety measures: First-aid box, CCTV Surveillance, Fire safety and Electrical Safety.
4	Fluid Mechanics Laboratory	A. Basic safety measures: Do's and Don’ts, SOP. B. Lab-specific safety measures: First-aid box, CCTV Surveillance, Fire safety and Electrical Safety.
5	Environmental Engineering Laboratory	A. Basic safety measures: Do's and Don’ts, SOP. B. Lab-specific safety measures: First-aid box, CCTV Surveillance, Fire safety and Electrical Safety.
6	Model Laboratory	A. Basic safety measures: Do's and Don’ts, SOP. B. Lab-specific safety measures: First-aid box, CCTV Surveillance, Fire safety and Electrical Safety.
7	Project Lab	A. Basic safety measures: Do's and Don’ts, SOP. B. Lab-specific safety measures: First-aid box, CCTV Surveillance, Fire safety and Electrical Safety.
8	Centre of Excellence (Computer Center and Language Lab)	A. Basic safety measures: Do's and Don’ts, SOP. B. Lab-specific safety measures: First-aid box, CCTV Surveillance, Fire safety and Electrical Safety.

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

Total Marks 20.00

Institute Marks : 20.00

To promote project-based learning, research activities, and innovation, the Civil Engineering Department has developed dedicated facilities such as the Project Laboratory, Research Laboratory, and Centre of Excellence. These facilities provide students with the required environment for design, experimentation, simulation, testing, and advanced technical work. They help in enhancing analytical skills, technical knowledge, and industry readiness of students. The details of these facilities are presented in Table 7.5.1.

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

S.N.	Name of the Laboratory
1.	**Project Laboratory: (Civil Engineering)** The department has well-established A dedicated Project Laboratory has been established in the Civil Engineering Department to support undergraduate projects, research and innovation activities, Centre of Excellence initiatives, and start up or ESDP-based projects, providing integrated hardware and software facilities aligned with Outcome-Based Education (OBE), including essential structural, geotechnical, environmental, and surveying equipment. The Construction Materials and Structural Testing section includes a Compression Testing Machine (CTM), Universal Testing Machine (UTM), concrete mixer, slump test apparatus, rebound hammer, Ultrasonic Pulse Velocity (UPV) equipment, and cube, cylinder, and beam moulds. The Project Laboratory includes environmental engineering hardware such as BOD and COD analyser's, jar test apparatus, pH, turbidity, TDS and DO meters, wastewater treatment pilot models, and photo-reactor setups; surveying and geospatial equipment such as total station, auto level, digital level, and GPS/GNSS instruments; along with essential software facilities for analysis and design work. The Project Laboratory is equipped with surveying and geospatial instruments such as Total Station, Auto Level, Digital Level, GPS/GNSS equipment, along with essential software facilities to support analysis, design, and project work. The Project Laboratory is equipped with Structural Analysis and Design software such as STAAD. Pro, ETABS, AutoCAD, and Concrete Mix Design applications. Utilization The Project Laboratory is utilized by students to carry out material testing, structural analysis and design, soil investigation, water quality analysis, surveying practices, and complete project work using modern equipment and software, thereby improving practical knowledge, technical skills, and industry readiness. Relevance to POs/PSOs: PO4,PO5,PSO1,PSO2

2.	**Centre of Excellence** **Centre of Excellence** The Institute has established a Centre of Excellence as a dedicated facility to promote advanced learning, innovation, and industry interaction. It acts as a common platform where students and faculty members can engage in project development, research activities, skill enhancement programs, and technology-based initiatives. The Centre is supported with modern infrastructure, updated hardware platforms, and required software tools to work in emerging and interdisciplinary domains. It also facilitates interaction and collaboration with industry professionals, research organizations, and alumni for knowledge sharing and technical guidance. The Institute has established a Centre of Excellence to promote advanced learning, innovation, and skill development. It includes specialized facilities such as the Drone Lab, Robotics Lab, and Language Lab. The Centre is supported with modern equipment, required software tools, and infrastructure to work in emerging and interdisciplinary technologies. It also encourages collaboration with industry experts, research organizations, and alumni. **The Centre of Excellence integrates the CodeChef Learning Platform** to systematically enhance students' programming, problem-solving, and analytical capabilities. It provides a structured and progressive learning environment focused on building strong foundations in coding, logical reasoning, and algorithm design. The curriculum is aligned with industry standards to strengthen computational thinking and core technical competencies required in today's technology-driven landscape. Beyond problem-solving, the platform emphasizes hands-on project development using modern technologies such as MERN (MongoDB, Express.js, React, Node.js), SQL, Spring Boot, Data Analysis, and Machine Learning. Students gain practical exposure by building real-world applications, working with databases, and developing intelligent systems, thereby bridging the gap between theoretical learning and industry application. The Institute has established a Centre of Excellence as a dedicated facility to promote advanced learning, innovation, and industry interaction. It acts as a common platform where students and faculty members can engage in project development, research activities, skill enhancement programs, and technology-based initiatives. The Centre is supported with modern infrastructure, updated hardware platforms, and required software tools to work in emerging and interdisciplinary domains. It also facilitates interaction and collaboration with industry professionals, research organizations, and alumni for knowledge sharing and technical guidance.

The Centre of Excellence for Foreign Languages to improve students' communication and professional skills. The Language Lab is equipped with audio-visual systems and language learning software to enhance listening, speaking, reading, and writing skills. In addition to English communication training, the lab also provides training in German and Japanese languages to improve global employability and international opportunities for students.

Utilization

The Centre of Excellence is actively utilized for student projects, faculty research, workshops, certification programs, internships, and technical training activities. It provides opportunities for students to work on real-time problems, develop prototypes, and enhance practical skills.

Industry experts and alumni are invited for expert talks, mentoring sessions, and technical guidance. The Centre also supports innovation activities, product development initiatives, and entrepreneurship-related efforts. Through these activities, students gain hands-on exposure to modern technologies and professional practices.

The Centre of Excellence is utilized for student projects, workshops, internships, certification programs, and research activities. The Drone Lab is used for designing, assembling, and testing drones for academic and practical applications. The Robotics Lab is used for robot design, programming, and automation experiments.

The Language Lab is utilized for communication skill development, presentation practice, group discussions, interview preparation, and foreign language learning (German and Japanese). It helps students build confidence and prepare for placements and global career opportunities.

The CodeChef platform is utilized to enhance students' coding proficiency and analytical thinking through structured practice in a time-bound environment, improving both accuracy and execution speed. It supports systematic preparation for technical interviews and placement processes by reinforcing core programming concepts and data structures.

Additionally, students engage in technology-driven project work across domains such as full-stack development (MERN stack), database management (SQL), and Machine Learning, enabling them to build portfolios that demonstrate practical skills alongside problem-solving expertise.

Relevance to POS/PSOs: PO1, PO2, PO3, PO4, PO5, PO10, PO11, PSO1, PSO2

8 CONTINUOUS IMPROVEMENT (80)

Total Marks 80.00

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

Total Marks 40.00

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

Institute Marks : 20.00

The following are the areas of weaknesses in the program based on the analysis of evaluation of COs attainment levels along with the action taken.

Table No: 8.1.1.1 Analysis of evaluation of COs attainment levels along with the action taken

Area of Weakness	Observed Cause(s)	Corrective Action(s)	Responsible Unit
Fundamental Knowledge	- Weak foundation in applied sciences - Limited practice with numerical problem-solving	- Introduced bridge courses - Conducted remedial classes - Given Assignments and Question Banks	Course Instructors
Design & Problem-Solving Skills	- Lack of exposure to open-ended design challenges	- Integrated case studies & real life projects - Organized design competitions	Department & Faculty
Communication & Teamwork	- Weak technical writing & presentation skills - Limited group project exposure	- Conducted workshops on communication - Introduced group assignments & peer evaluation	Faculty & Language Lab
Industry Readiness	- Insufficient internships & industrial visits - Lack of awareness of standards & sustainability	- Strengthened internship programs - Invited industry experts for guest lectures - Embedded ethics & sustainability modules	Training & Placement Cell
Higher-Order Thinking & Innovation	- Limited exposure to research - Lack of project-based learning	- Encouraged participation in hackathons - Introduced research-oriented final year projects - Promote innovation clubs	Faculty & Research Cell

The table shows the comparison of target levels and CO attainment for all semesters.

Table No. 8.1.1.2 Target level and CO attainment for 2021-2025

First Semester														
Subjects	**C101T**	**C102T**	**C103L**	**C104T**	**C105L**	**C106T**	**C107L**	**C108WP**	**C109IKT**				**AVG.**	
Target Level	**1.50**	**1.50**	**1.50**	**1.50**	**2.25**	**1.50**	**2.25**	**1.50**	**2.25**				**1.75**	
Co Attainment	**1.76**	**1.53**	**1.62**	**1.79**	**1.79**	**2.21**	**2.16**	**1.57**	**2.09**				**1.84**	
Actions: Cos Attainment > Target Level														
Second Semester														
Subjects	**C110T**	**C111T**	**C112L**	**C113T**	**C114L**	**C115T**	**C116L**	**C117T**	**C118L**	**C119**	**C120**		**AVG.**	

Target Level	1.50	1.30	2.25	1.40	2.25	1.50	2.25	1.50	2.25	1.50	1.50		1.75	
Co Attainment	1.25	1.33	1.58	1.51	1.39	1.53	2.1	2.21	2.8	2.32	1.03		1.73	
Actions: Cos Attainment > Target Level														
Third Semester														
Subjects	C201T	C202T	C203T	C204L	C205T	C206L	C207T	C208L	C209L	C210L	C211L		AVG.	
Target Level	1.50	1.50	1.50	2.25	1.50	2.25	1.50	2.25	2.25	1.50	2.25		1.84	
Co Attainment	1.51	1.87	2	2.29	2.37	2.24	2.49	1.96	2.48	2	2.95		2.20	
Actions: Cos Attainment > Target Level														
Fourth Semester														
Subjects	C214T	C215T	C216L	C217T	C218L	C219T	C220L	C221T	C222T	C223L	C224L		AVG.	
Target Level	1.50	1.30	2.25	1.50	1.80	1.70	2.10	1.70	1.80	2.50	1.20		1.76	
Co Attainment	1.59	1.32	2.34	1.56	1.93	1.84	2.27	1.82	1.95	2.91	1.37		1.90	
Actions: Cos Attainment > Target Level														
Fifth Semester														
Subjects	C301T	C302L	C303T	C304L	C305T	C306L	C307T	C308T	C309L	C310L	C311L	C312L	AVG.	
Target Level	1.50	1.50	1.50	2.25	1.50	2.25	1.50	1.50	2.25	2.25	2.25	2.25	1.88	
Co Attainment	1.81	1.69	1.86	1.36	2.1	2.98	2.18	2.83	2.16	2.97	2.97	1.38	2.19	
Actions: Cos Attainment > Target Level														
Sixth Semester														
Subjects	C313T	C314L	C315T	C316L	C317T	C318L	C319L	C320L	C321L	C322L			AVG.	
Target Level	1.50	2.25	1.50	2.25	1.50	2.25	2.25	2.25	2.25	2.25			2.03	
Co Attainment	2.37	2.48	2.23	2.18	2.73	2.04	2.78	2.33	2.6	2.97			2.47	
Actions: Cos Attainment > Target Level														
Seventh Semester														

Subjects	C401T	C402L	C403T	C404L	C405T	C406T	C407T	C408L					AVG.	
Target Level	1.50	2.25	1.50	1.50	1.50	1.50	1.50	2.25					1.69	
Co Attainment	2.1	2.46	2.75	1.9	1.51	2.6	2.6	2.97					2.36	
Actions: Cos Attainment > Target Level														
Eight Semester														
Subjects	C409T	C410T	C411T	C412T	C413T								AVG.	
Target Level	1.30	2.25	1.50	1.50	1.50								1.61	
Co Attainment	1.44	2.39	2.47	2.76	2.95								2.40	
Actions: Cos Attainment > Target Level														

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

Institute Marks : 20.00

2021-25 Batch

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

Program Outcome	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	Average of PO
Average of PO Mapping	2.44	1.86	1.31	1.36	1.61	2.29	2.35	2.2	1.71	1.58	1.28	1.63	1.80

- For the POs mapping with more than 70% of courses the target is 1.7
- For the POs mapping with 50% to 70% courses the target is 1.6
- For the POs mapping with less than 50% courses the target is 1.5

Program Specific Outcome	PSO-1	PSO-2	Average of PSO
Average of PSO Mapping	1.98	1.68	1.80

- For the PSOs mapping with more than 70% of courses the target is 1.9
- For the PSOs mapping with 50% to 70% courses the target is 1.8
- For the PSOs mapping with less than 50% courses the target is 1.7

POs	Target Level	Attainment Level	Observations
PO1: Engineering Knowledge			
PO1	1.90	**1.84**	Target not Achieved
Action 1: Extra classes conducted related to basic engineering **Action 2:** More classes conducted on fundamentals **Action 3**: Special classes were conducted for slow learners **Action 4**: Guest Lectures planned for better understanding of fundamentals			
PO2: Problem Analysis			
PO2	**1.90**	**1.53**	Target not Achieved
Action 1: Analytical based teaching adopted. **Action 2:** More problems related to Me were discussed. **Action 3**: Case studies of problems previously encountered were discussed and made students understand the cause for it. **Action 4**: Additional hours were spent on analysing the challenges and preparing some valid solutions			

PO3: Design/Development of Solutions			
PO3	**1.90**	**1.29**	Target not Achieved
Action 1: Guest lectures were arranged to better understand the complex engineering problems. **Action 2**: Value Added courses conducted for understanding design aspects of solutions to complex problems **Action 3:** Additional experiments beyond curriculum were conducted **Action 4:** Students were provided the access to NPTEL Videos			
PO4: Conduct Investigations of Complex Problems			
PO4	**1.90**	**1.32**	Target not Achieved
Action 1: Technical events were conducted for students to present projects **Action 2**:Workshops were conducted for hands-on training on latest technologies.			
PO5: Modern Tool Usage			
PO5	**1.90**	**1.46**	Target not Achieved
Action 1: Individual systems were provided for students. **Action 2:** Various Open source Tools awareness and hand on sessions were conducted. **Action 3:** Revised lab manuals to include tool-based experiments. **Action 4:** Included sessions on validation of simulation results. **Action 5:** Compare manual vs. software-based solutions.			
PO6: The Engineer and Society			
PO6	**1.70**	**1.91**	Target Achieved
Action 1: Organize seminars on intellectual property rights. **Action 2:** Incorporated projects addressing local community needs (energy, water, waste management) **Action 3:** Encouraged participation in social outreach programs **Action 4:** Organized debates, poster competitions, and awareness campaigns on engineering & society			
PO7: Environment and Sustainability			
PO7	**1.70**	**1.92**	Target Achieved

Action 1: Engaged students in projects on waste segregation, renewable energy adoption, water conservation, and carbon footprint reduction.

Action 2: Organized industrial visits, guest lectures, and internships focusing on green manufacturing, renewable energy, and circular economy practices.

Action 3: Encourage final-year projects, hackathons, and innovation labs targeting renewable energy, recycling, and sustainable materials.

Action 4: Hosted seminars, poster competitions, and awareness drives on climate change, pollution control, and Sustainable Development Goals (SDGs).

Action 5: Used energy-efficient equipment, minimize resource wastage, and design experiments with sustainability focus.

PO8: Ethics

PO8	**1.70**	**1.96**	Target Achieved

Action 1: A Seminar on Entrepreneurship Development

Action 2: Integrate **engineering ethics case studies** into core courses.

Action 3: Organize **debates/poster competitions** on ethical dilemmas in engineering.

PO9: Individual and Team Work

PO9	**1.70**	**1.63**	Target not Achieved

Action 1: A Seminar on Entrepreneurship Development 2) Inno-Vision Contest 3) seminar on Project-Based Learning

Action 2: Introduce group projects with peer evaluation components.

Action 3: Conduct team-building workshops and leadership training.

Action 4: Encourage participation in student clubs and professional societies.

PO10: Communication

PO10	**1.70**	**1.5**	Target not Achieved

Action 1: Conduct technical writing workshops and report preparation training.

Action 2: Include oral presentations as part of project/course evaluation.

Action 3: Train students in visual communication tools (posters, infographics, dashboards).

Action 4: Organize mock interviews and group discussions for communication practice.

Action 5: Encourage publication of student newsletters, blogs, or technical magazines.

PO11: Project Management and Finance

PO11	**1.80**	**1.32**	Target not Achieved

Action 1: Introduce mini-projects with budgeting and resource planning. **Action 2:** Embed basic finance and cost analysis modules in curriculum. **Action 3: Encourage students to take roles in organizing departmental events with budgets.** **Action 4: Collaborate with industry for real-world project management case studies.**			
PO12: Life-long Learning			
PO12	**1.90**	**1.46**	Target not Achieved
Action 1: Assignments are given for every course. **Action 2:** Internship/ industrial training done by the students. **Action 3:** Promote MOOCs, online certifications, and self-learning platforms. **Action 4:** Encourage participation in conferences, seminars, and workshops. **Action 5:** Introduce self-study assignments with evaluation of independent learning. **Action 6:** Recognize students who pursue extra certifications or skill development beyond curriculum.			

PSOs	Target Level	Attainment Level	Observations
PSO1: Graduates will apply core Civil Engineering principles to survey, plan, analyze, design, and manage infrastructure systems using innovative, sustainable, and efficient approaches for real-world challenges.			
PSO1	**1.90**	**1.72**	Target not Achieved
Action 1: Integrated Advanced Engineering Tools like Creo in labs for hands-on proficiency. **Action 2: Promoted Project-Based Learning-** Encourage students to carry out mini projects and capstone projects related to civil engineering areas like structural design, transportation, water resources, and environmental engineering. **Action 3: Conducted Skill-Oriented Workshops-** Organized training sessions on modern engineering tools. **Action 4: Strengthen Industry Collaboration-** Arrange internships, industrial visits, and live construction projects through collaboration with construction companies and engineering firms.			
PSO2: Graduates will uphold ethical professional practice, collaborate effectively in teams, and communicate clearly to enhance employability skills while fostering entrepreneurial ventures in diverse civil engineering contexts.			
PSO2	**1.90**	**1.57**	Target not Achieved

Action 1: Encouraged students to participate in civil engineering innovation competitions, hackathons, and startup or incubation programs related to construction, infrastructure, and environmental solutions to develop creative ideas and entrepreneurial skills.

Action 2: Strengthened industry interaction by arranging site visits, internships, expert lectures, and industry-based projects so that students understand real civil engineering problems and societal needs.

Action 3: Promoted discipline, teamwork, and professional ethics among students during academic activities, laboratory work, field work, and project execution.
Action 4: Included topics like professional ethics, communication skills, leadership, and time management in academic courses, seminars, and co-curricular activities to improve students' employability and professional behavior.

8.2 Academic Audit and actions taken thereof during the period of Assessment (15) Total Marks 15.00

Institute Marks : 15.00

The Institute has established a formal, structured, and documented Academic Audit framework to ensure quality systems implementation, continuous improvement in academic processes, governance, and outcomes. The academic audit is an integral part of the Institute's quality assurance framework and is implemented through the Internal Quality Assurance Cell (IQAC).

Academic audit is viewed as a systematic and scientific peer-review process aimed at evaluating the effectiveness of academic planning, curriculum implementation, teaching–learning practices, assessment and evaluation systems, outcome-based education (OBE) implementation, faculty development, research activities, industry interaction, student support systems, and governance mechanisms. The audit process integrates departmental self-assessment, internal audit by cross-departmental peers, and external academic audit conducted by External academic audit committee includes External members thereby ensuring transparency, objectivity, and continuous improvement. The overall academic audit cycle and feedback mechanism adopted by the Institute are illustrated in the figure 8.2.1 below.

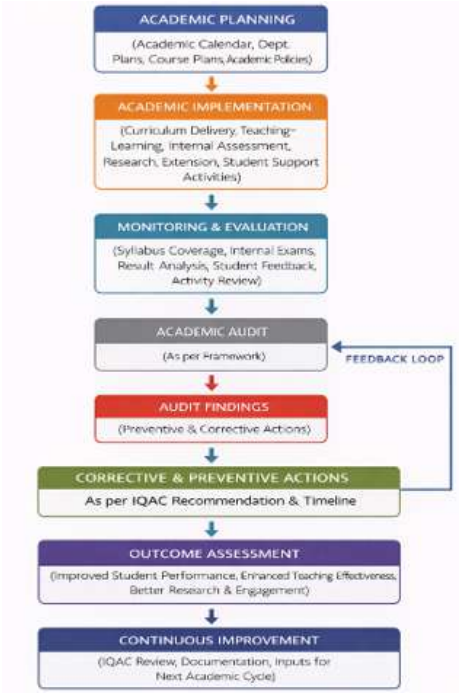


Figure 8.2.1: Academic Audit and Continuous Improvement Framework.

8.2.1 Internal Academic Audit:

1. General Information

- Name of the Institution:
- Department:
- Program(s):
- Date of Audit:
- Audit Team Members:
- Head of Department:

2. Purpose of Internal Academic Audit

The purpose of the Internal Academic Audit is to systematically monitor, evaluate, and enhance academic processes, governance practices, and learning outcomes of the Department. The audit ensures alignment with institutional quality policies and regulatory standards and promotes continuous improvement through evidence-based corrective and preventive actions.

3. Objectives

- To assess compliance with Outcome Based Education (OBE) practices
- To evaluate curriculum implementation and delivery
- To review CO–PO–PSO mapping and attainment
- To examine teaching–learning and assessment processes
- To identify strengths, gaps, and improvement opportunities
- To recommend corrective and preventive actions

4. Audit Methodology

The audit is conducted through a four-stage structured process:

4.1 Pre-Audit Preparation

· Communication of audit framework and scoring rubric

· Departmental self-assessment

· Submission of academic documents such as:

- Academic calendar
- Teaching plans and course files
- Laboratory manuals
- Assessment records
- COs–POs–PSOs matrices
- Student feedback
- Faculty development records
- Research outcomes
- Industry interaction details
- Departmental events records

4.2 On-Site Verification

- Document verification
- Interaction with faculty and students
- Observation of classrooms and laboratories
- Physical verification of infrastructure and learning resources

4.3 Evaluation

Each parameter is evaluated using a five-point scale as shown in table no 8.2.1.

Table no 8.2.1: Scale Description

Scale	Descriptor	Interpretation
5	Excellent	Fully compliant; exemplary practices
4	Very Good	Minor gaps; mostly compliant
3	Good	Moderate gaps; improvement needed

2	Fair	Significant gaps; corrective action required
1	Poor	Non-compliant; urgent intervention required

4.4 Reporting and Action Planning

- Consolidation of audit findings
- Preparation of Internal Academic Audit Report
- Development of time-bound Action Plan
- Monitoring through departmental meetings and IQAC reviews

5. Assessment Framework

The audit evaluates **40 parameters** under the following domains:

1. Curriculum Design & Implementation
2. Teaching–Learning Process
3. Assessment & Evaluation
4. CO–PO–PSO Mapping and Attainment
5. Faculty Development & Research
6. Student Support & Progression
7. Infrastructure & Learning Resources
8. Industry Interaction & Innovation
9. Feedback Systems
10. Governance & Leadership

6. Scoring and Grading

Departmental Grade Based on Total Score (Out of 200) as shown in table no 8.2.2.

Table no 8.2.2: Score Range.

Score Range	Equivalent Grade
More than 170	EXCELLENT
150 – 170	GOOD
120 – 150	AVERAGE
100 – 120	BELOW AVERAGE
Less than 100	CONCERN

This grading system enables benchmarking of departmental performance and identification of priority areas for improvement

7. Parameter-wise Evaluation Table

Table no 8.2.3: Internal Academic Audit Format

Sr. No	Content	Scale	Score	Remark

1.	The curriculum is aligned with the regulatory guidelines, and relevant Sustainable Development Goals (SDGs).			
2.	The department follows a structured and periodic process for curriculum development and revision.			
3.	Program Outcomes (POs) and Course Outcomes (COs) are clearly defined, mapped, and regularly assessed.			
4.	The curriculum integrates cross cutting issues, interdisciplinary, skill-based, and experiential learning components effectively.			
5.	Indian Knowledge Systems, Value Education concepts are embedded within the curriculum.			
6.	Stakeholder feedback (students, faculty, industry, alumni, employer) is systematically collected and used in curriculum design.			
7.	The curriculum offers flexibility in credit structure, electives, and academic pathways for students.			
8.	Curriculum implementation and delivery are consistently monitored across departments and faculty.			
9.	Value-Added Courses (VACs), MOOCs, internships, and field projects are integrated and credited within the curriculum.			
10.	The online courses through SWAYAM / SWAYAM Plus and other recognized platforms are actively completed by students and are credited in the curriculum			
11.	Course files are maintained as per checklist and audited by IQAC after the end of every semester.			
12.	Faculty members prepare, approve, and consistently follow lesson plans for all courses.			

13.	Innovative teaching methodologies (e.g., ICT tools, experiential learning) are effectively adopted.			
14.	The Learning Management System (LMS) is actively used for content delivery, assessment, and student engagement.			
15.	Student learning levels are regularly assessed, with appropriate support provided to slow and advanced learners.			
16.	Internal assessments (Question Papers) are conducted as per schedule and are mapped to Course Outcomes (COs) as well as Blooms Taxonomy.			
17.	Mechanisms for monitoring teaching quality and collecting student feedback are well-established and functional.			
18.	Faculty members are trained in outcome-based education and pedagogical practices.			
19.	Student attendance is systematically tracked and used to guide academic support interventions.			
20.	Remedial and bridge programs are conducted regularly to support diverse learner needs.			
21.	CO-PO attainment is analyzed and used to improve teaching practices and curriculum delivery.			
22.	Local Guardian System is effectively practiced.			
23.	Faculty and students publish high-quality research in peer-reviewed journals and conferences.			
24.	The department actively undertakes funded research projects, consultancies, and collaborations with external bodies.			
25.	Institutional mechanisms effectively promote innovation, patent filing, and intellectual property (Copyright).			

26.	Students are actively engaged in research through projects, internships, competitions, and scholarly activities.			
27.	The quality of seed money, projects and outcome.			
28.	Classrooms, laboratories, and departmental facilities are adequate, accessible, and well-maintained.			
29.	The department is equipped with sufficient ICT tools, internet connectivity, and digital teaching resources.			
30.	Faculty and students effectively utilize e-resources, open source software, LMS platforms, and digital libraries for academic activities.			
31.	Systems for regular maintenance, safety audits, and infrastructure upgrades are well-established and functional.			
32.	The department actively promotes green practices, energy efficiency, and eco-friendly infrastructure use.			
33.	Student results are consistently analyzed across programs and semesters to monitor academic performance.			
34.	Student progression to higher studies, employment, and entrepreneurship, Self-employed Social worker is effectively monitored and documented.			
35.	A significant percentage of students secure internships, placements, or success in competitive examinations.			
36.	Student achievements in co-curricular and extracurricular domains are well-documented and formally recognized.			
37.	Student achievements in academics, research, and innovation are showcased through awards, publications, or media.			

38.	Alumni achievements are tracked and used to inform departmental strategy and mentoring initiatives.			
39.	Roles and responsibilities of faculty and staff are clearly assigned and periodically reviewed.			
40.	Departmental meetings are conducted regularly, with decisions properly recorded and implemented.			
Total Score:				
Equivalent Grade:				

Total Score: _____ / 200

Equivalent Grade: _____

8. Key Findings

8.1 Strengths

-
-
-

8.2 Areas for Improvement

-

9. Recommendations

-

10. Conclusion

The Internal Academic Audit concludes that the department demonstrates _____ level of compliance with OBE practices. Continuous improvement initiatives are recommended in identified areas to enhance academic quality and stakeholder satisfaction.

Signatures

Audit Committee Members:

1.

Head of Department: _____

IQAC Coordinator: _____

8.2.2 External Academic Audit:

The External Academic Audit is conducted annually as per DBATU guidelines. The audit verifies the effective conduct of theory courses, laboratory courses, project work, internships, and activity-based learning components. Audit reports are prepared in the prescribed Academic Advisors Report (AAR) format, and documented reports are available for the academic years 2022–23, 2023–24, and 2024–25, confirming the robustness of the external academic audit mechanism.

I. Curricular Aspects:

The Institute implements the curriculum through well-defined Annual Institutional Academic Plans and Departmental Curricular Plans. Academic calendars are prepared in advance and strictly followed. Syllabus coverage is regularly monitored, and 90–100% syllabus completion is achieved for all courses. Curriculum enrichment is ensured through add-on courses, MOOCs (NPTEL/Coursera), foundation courses such as Universal Human Values and Environmental Studies, and skill-oriented programs. Structured online student feedback on curriculum is collected and analyzed for continuous improvement.

II. Teaching, Learning and Evaluation:

Teaching–learning processes are systematically planned through teaching plans, academic diaries, and lesson schedules. ICT-enabled teaching tools such as smart boards and e-learning resources are extensively used. Internal examinations are conducted as per norms with proper documentation. Subject-wise and teacher-wise result analysis is carried out after every examination. Based on performance analysis, remedial classes and mentoring support are provided. Student feedback on teaching effectiveness is obtained through an online mechanism and used for improvement.

III. Research and Consultancy:

The Institute has recognized research centers and qualified research guides. Faculty members contribute through research publications, conference presentations, book publications, FDPs, workshops, and STTPs. While research output is satisfactory, the academic audit identified the need to strengthen funded research projects and consultancy activities. The Institute has documented these observations and initiated measures to encourage proposal submissions and industry collaboration.

IV. Extension Activities:

The Institute actively promotes extension activities through NSS, professional clubs, eco-club, women empowerment initiatives, and the Institute Innovation Cell (IIC). Students participate in social outreach programs, innovation challenges, technical competitions, and entrepreneurship-related activities. These initiatives support experiential learning, social responsibility, and skill development. Suggestions provided by the audit committee are recorded for future implementation.

V. Learning Resources:

The central library is well equipped and fully automated, providing access to print resources, e-resources (N-LIST, DELNET, National Digital Library), e-journals, NPTEL courses, spoken tutorials, and previous years' question papers. Library usage records, circulation data, and visitor registers are systematically maintained, supporting effective teaching–learning processes.

VI. Student Support Activities:

The Institute has a structured student support system including sports, cultural activities, career guidance, placement support, alumni association, grievance redressal, and anti-ragging mechanisms. A Local Guardian (Tutor) Scheme provides mentoring and counseling support. Training and Placement activities focus on skill development and employability, with proper documentation of student participation and placement outcomes.

VII. Basic Amenities:

The Institute provides adequate basic amenities such as safe drinking water, sanitation facilities, women's rest rooms, healthcare support, a hygienic canteen, and a clean, green campus environment. Maintenance records are available, ensuring a safe and supportive learning environment.

VIII. Governance and Leadership:

The Institute follows transparent and participative governance practices through regular staff meetings and functioning academic and administrative committees. Faculty development is encouraged through FDPs, workshops, and access to MOOCs. IQAC coordinates academic planning, monitoring, and documentation, supporting continuous quality improvement.

IX. IT Initiatives:

The Institute has established strong IT infrastructure, including smart classrooms, high-speed internet connectivity, and well-equipped computer laboratories. IT facilities are effectively utilized for academic delivery, assessment, and administration. Digital initiatives support efficient academic management and quality assurance.

X. Best Practices:

The Institute has institutionalized Project-Based Learning (PBL), the Local Guardian mentoring system, and structured teacher assessment practices as best practices. These initiatives enhance student engagement, experiential learning, and academic accountability. IQAC records, annual reports, and AQAR documentation are maintained to support continuous improvement.

Table no 8.2.4: External Academic Audit Format.

Academic Audit Report of R. C. Patel Institute of Technology, Shirpur				
Academic Year (2024-25)				
Academic Advisors Report (AAR)				
I-COLLEGE PROFILE				
1	Name of the College, Website, email and Ph.No.			
2	Name of the Principal, email & Mob.No			
3	Name of the Vice-Principal, email & Mob. No.			
4	Name of the IQAC Coordinator, email & Mob. No.			
5	Year of Establishment & own land if any			
6	NBA accreditation			
7	NAAC Grade with Cycle, Accredited Year & CGPA (if not Accredited Status of Preparations)			
8	UGC Recognition (2F & 12 B)			
9	College Working Hours (if shift system mention details of both shifts & give reasons for shift system)			
10	No. of Posts Sanctioned			

11	Course wise & Year wise Students strength particulars (Proforma enclosed & to be submitted along with AAR)				
II-CURRICULAR ASPECTS					
	Item	**Impression of Academic Advisor with grade A(Good)/B(Satisfactory)/C (poor) after observation**		**Recommendation/Suggestions by Academic Advisors**	
		Grade	**Actual Status**		
1	Implementation of Annual Institutional Plan				
2	Departmental Annual Curricular Plans				
3	College Activity Register for the Academic Year				
4	Departmental Activity Registers (Department-wise)				
5	Add-on Courses (Department-wise) completed during Academic Year				
6	Add-on Courses (Department-wise) in Academic Year				
7	Coverage of Syllabus (Average Percentage)				
8	Teaching of Humanities & Foundation Courses				
9	Teaching of Environmental Science and Ethics				
10	No. of New UG & PG Courses introduced this year				
11	Maintenance of Student Attendance Registers				
12	Feedback forms on Curriculum from students				
III-TEACHING, LEARNING & EVALUATION					

1	Teaching Diaries & Plans in the Prescribed Formats				
2	Co-Curricular Activities (College Level)				
3	Academic Competitions (College & Above level)				
4	Conduct of Internal Examinations				
5	Subject wise result analysis				
6	Teacher wise result analysis				
7	Remedial Classes				
8	Record of Evaluation of Teachers by Students				
IV-RESEARCH AND CONSULTANCY					
1	Is the College a Recognized Research Centre				
2	No. of Research Guides in the College				
3	No. of Research Scholars working for Masters & Ph. D				
4	Major/Minor/Other Research Projects				
5	Research Papers Published in Academic year (International /National)				
6	Papers Presented in Academic year (International /National/ State)				
7	Books Published in Academic year (Single Author/ Co Author)				
8	Seminars/Workshops/ Training Programme Conducted in Academic year (International /National/ State)				
9	Record of Consultancy in Academic year				
10	Record of MOUs in Academic year				
V-EXTENSION ACTIVITIES					
1	Record of Subject/Department Related Extension Activities				
2	Name of the NSS PO & Mobile No.				
3	NSS Attendance register				

4	NSS Activity register				
5	Name of the NCC ANO & Mobile No.				
6	NCC Attendance register				
7	NCC activity register				
8	Name of the Professional Club Coordinator & Mobile No.				
9	Professional Club Activities				
10	Name of the Women Empowerment Cell Coordinator & Mobile No.				
11	WEC Activities				
12	Name of the Eco-Club Coordinator & Mobile No.				
13	Eco- Club Activities				
14	Name of the Consumer Club Coordinator & Mobile No.				
15	Consumer Club Activities				
16	Innovation Activity club				
17	Technology Development and Transfer Cell Activities				
18	Any other Club				
VI-LEARNING RESOURCES					
1	Name of the Librarian & Mob.No				
2	Access timings of the Library				
3	Circulation of Books among Students				
4	Availability of Previous years Question papers				
5	Availability of model answers of previous examinations				
6	Record of Visitors to Library				
7	Status of Library Automation				
8	e- Resources & e-Journals				
9	Number of E-Journals				
10	Number of Print Journals				
11	Access to NPTEL courses				

12	Access to Spoken Tutorials				
13	Access to e-learning tutorials				
14	TED-X activity on campus				
VII-STUDENT SUPPORT ACTIVITIES					
1	Name of Dean/Faculty Incharge & Mob.No				
2	Activities and Support for Sports				
3	Records of events conducted and significant achievements in Sports & Games				
4	Record of cultural programmes conducted				
5	Record of any other extra-curricular activities conducted				
6	Record of Students trained in different verticals				
7	Record of Student placed in In campus placement				
8	Name of Career Guidance Coordinator and Mob.No				
9	Record of activities Career Guidance and placement cell				
10	Name of Departmental Research Coordinator & Mob. No.				
11	Implementation of Departmental Research Plan				
12	IQAC activities & maintenance of records , (Action Plan/Minutes of Meeting/ submission of AQAR to NAAC etc)				
13	Record of Alumni Association Activities				
14	Record of Grievance Redressal Cell / Anti Ragging Cell				
15	Awards and Prizes earned by students				
16	Mentoring / Counseling System				
VIII-BASIC AMENITIES					
1	Maintenance of drinking water				
2	Maintenance of Sanitation				

3	Rest room for women students				
4	Greenery & Cleanliness				
5	Health Care Facility				
6	Canteen				
IX-GOVERNANCE AND LEADERSHIP					
1	Staff meetings Register				
2	Functioning of Committees in Administration (Minutes of Meetings)				
3	Awards/Achievements of faculty				
4	Faculty development initiatives				
X - IT INITIATIVES					
1	e-class rooms (Number & Usage)				
2	Internet Centre				
3	Computer labs (No. of labs & working systems)				
XI-BEST PRACTICES					
1	Record of best/innovative practices by the institution				
2	College Activity Register/ Annual Report				
3	Hard Copy of AQAR				
4	Over All Impression on the College				
	Signature of the Deputy Director				
		Signatures of Academic Advisors			
	Signature of the Director	1			
		2			

	IQAC Co-ordinator		

8.2.3 Actions Taken and Continuous Improvement

Based on academic audits recommendations during the assessment period, the Department has implemented several improvement measures. These include strengthening of lesson planning and academic documentation, enhanced use of ICT-enabled teaching tools and digital learning platforms, refinement of internal assessment and result analysis practices, conduct of remedial and reinforcement of mentoring under the Local Guardian scheme. Faculty participation in FDPs, MOOCs, research activities, and professional development programs has increased. Laboratory infrastructure and learning resources have been upgraded to support effective teaching and learning. The effectiveness of implemented actions is reviewed periodically through IQAC and departmental review meetings. Academic performance indicators such as student results, COs–POs–PSOs attainment levels, placement outcomes, faculty research output, and stakeholder feedback are analyzed. Subsequent academic audit reports reflect improved compliance, strengthened OBE practices, and enhanced teaching–learning effectiveness, demonstrating a closed-loop academic audit and continuous improvement mechanism.

8.3 Improvement in Faculty Qualification/Contribution (15)

Total Marks 15.00

Institute Marks : 15.00

Academic Performance	**CAYm1 (2024-25)**	**CAYm2 (2023-24)**	**CAYm3 (2022-23)**
No. of faculty members with Ph.D. degree	3.00	2.00	1.00
No. of publications in peer reviewed journals	3.00	9.00	1.00
No. of publications in conferences	3.00	3.00	6.00

8.4 Improvement in Academic Performance (10)

Total Marks 10.00

Institute Marks : 10.00

Academic Performance	**CAYm1 (2024-25)**	**CAYm2 (2023-24)**	**CAYm3 (2022-23)**
Academic Performance Index (API) of the First-Year Students in the Program (Refer to section 4.3)	5.14	5.47	4.31
Academic Performance Index (API) of the Second-Year Students in the Program (Refer to section 4.4)	6.38	5.55	5.66
Academic Performance Index (API) of the Third-Year Students in the Program (Refer to section 4.5)	6.62	6.53	6.79

9 STUDENT SUPPORT AND GOVERNANCE (120)

Total Marks 116.00

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

Total Marks 1.00

Institute Marks : 1.00

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 (Regular / Contract)	Date Of leaving(In case Currently Associated is 'No')
Mr. Suhas Pan	AVOPS5206M	M.Sc	No	07/06/1995	Physics	Assistant Professor	19/07/2001	Yes	Regular	
Dr. Vijay Kashi	BBAPS8865B	M.Sc. and Ph.D. (Chemistry)	No	25/08/2025	Chemistry	Assistant Professor	19/08/2002	Yes	Regular	
Dr. Satish Vasa	AJPPD9106N	M.SC. (Mathematics) and PhD	No	31/01/2017	Mathematics	Professor	01/01/2004	Yes	Regular	
Dr. Vijay Shivaj	ATZPB9674P	M.Sc. (Physics) and Ph.D.	No	23/04/2021	Physics	Associate Professor	13/01/2009	Yes	Regular	
Dr. Amruta Atul	AGVPD0790K	M.SC. (Mathematics) and PhD	No	07/06/2017	Mathematics	Professor	11/08/2009	Yes	Regular	
Dr. Milindkuma	CLEPS7419E	M.Sc. (Physics) and Ph.D.	No	30/04/2016	Physics	Associate Professor	22/09/2010	Yes	Regular	
Dr. Kalpesh An	ACFPI6052B	M.Sc. and Ph.D. (Chemistry)	No	15/07/2021	Chemistry	Assistant Professor	22/09/2010	Yes	Regular	
Dr. Kiran Ekan	CLAPS9948A	M.Sc. and Ph.D. (Chemistry)	No	23/06/2018	Chemistry	Assistant Professor	20/01/2011	Yes	Regular	
Dr. Harshal Sul	AJKPJ1540K	M.SC. (Mathematics) and PhD	No	07/10/2024	Mathematics	Assistant Professor	14/09/2011	Yes	Regular	
Dr. Jamir Salim	CDZPS9785G	M.SC. (Mathematics) and PhD	No	11/11/2024	Mathematics	Assistant Professor	10/08/2012	Yes	Regular	
Mr. Narayan M	AJDPN0210F	M.Sc	No	12/01/2008	Physics	Assistant Professor	13/08/2012	Yes	Regular	
Dr. Pramod Na	BVBPP7371N	M.Sc. and Ph.D. (Chemistry)	No	14/12/2020	Chemistry	Assistant Professor	16/08/2012	Yes	Regular	

Dr. Kishor Ram	AVGPT0027R	M.A and Ph.D	No	30/11/2022	English	Assistant Professor	12/08/2013	Yes	Regular	
Mr. Samadhan	BCMPP7105E	M.Sc	No	20/07/2011	Mathematics	Assistant Professor	10/01/2022	Yes	Regular	
Miss Ashwini B	ENVPP9173B	M.Sc	No	20/12/2020	Statistics	Assistant Professor	01/06/2022	Yes	Regular	
Miss Pratibha M	EPLPP6196E	M.Sc	No	23/05/2017	Mathematics	Assistant Professor	01/08/2022	Yes	Regular	
Mr. Vijay Moha	AINPI2433C	M.Sc	No	27/09/2021	Mathematics	Assistant Professor	17/08/2022	Yes	Regular	
Dr. Hemant Su	AVGPT6798K	M.Sc. (Physics) and Ph.D.	No	23/12/2019	Physics	Assistant Professor	13/08/2024	Yes	Regular	
Mr. Divyesh Ra	GHLPM0530B	M.Sc	No	24/07/2023	Mathematics	Assistant Professor	16/08/2024	Yes	Regular	
Miss Prajakta D	GCZPB6958K	M.Sc	No	13/07/2022	Statistics	Assistant Professor	21/08/2024	Yes	Regular	
Dr. Surekha Rc	ATXPP1665J	M.A and Ph.D	No	02/07/2018	English	Assistant Professor	21/08/2024	Yes	Regular	
Mr. Anil Magan	ASWPA4268N	MA	No	17/07/2007	English	Assistant Professor	21/08/2024	Yes	Regular	
Mr. Jain Milkes	AKCPJ4760E	MBA	No	28/07/2009	Softskills	Assistant Professor	06/08/2012	Yes	Regular	
Mr. Rathod Nin	CILPR8064E	M.Phil	No	12/10/2014	Helath and Wellness	Assistant Professor	08/08/2013	Yes	Regular	
Mr. Mahendra I	ACPPW4815J	MA	No	28/09/2021	English	Assistant Professor	03/10/2023	No	Regular	30/11/2024
Ms. Pooja Nira	BYBPM3949Q	M.Tech	Yes	21/09/2021	Computer Engineering	Assistant Professor	01/08/2022	Yes	Regular	
Ms. Pramila Ka	AVXPA0880A	M.E.	Yes	06/04/2016	Computer Science and Engineering	Assistant Professor	06/04/2022	Yes	Regular	
Mr. Raghuvans	BINPR9023C	M.Tech	Yes	16/06/2016	VLSI and Embedded Systems	Assistant Professor	25/07/2016	No	Regular	30/05/2025
Mrs. Kavita Sa	CEJPD2233M	M.E.	Yes	27/11/2018	Electronics and Telecommunication Engineering	Assistant Professor	01/12/2022	Yes	Regular	
Mrs. Sneha Ma	AUSPG1346B	M.E.	Yes	28/10/2015	Electronics and Telecommunication Engineering	Assistant Professor	07/08/2023	Yes	Regular	

Mrs. Tejal Raje	DBKPG6377J	M.Tech	Yes	14/12/2020	Computer Science and Engineering	Assistant Professor	17/08/2023	Yes	Regular	
Mr. Amit Rajen	BCCPM3917R	M.Tech	Yes	30/12/2013	Digital Communication	Assistant Professor	12/07/2010	Yes	Regular	
Mr. Krunal Prak	APVPR9510E	M.E.	Yes	05/11/2013	Electronics and Communication Engineering	Assistant Professor	04/01/2023	Yes	Regular	
Dr. Chetan Jaip	AGVPC4194Q	Ph.D	Yes	04/08/2025	Civil Engineering	Assistant Professor	01/02/2012	Yes	Regular	
Mr. Jitendra Ma	AKWPJ7776L	M.Tech	Yes	10/08/2016	Structural Engineering	Assistant Professor	02/11/2020	Yes	Regular	
Mr. Aakash Sur	BCCPP7296L	M.E.	Yes	18/02/2015	Infrastructure Engineering and Management	Assistant Professor	22/08/2012	Yes	Regular	
Mr. Nitish Jagd	CDFPP9268P	M.Tech	Yes	11/12/2018	Computer Science and Engineering	Assistant Professor	28/08/2025	Yes	Regular	
Mr. Patil Manoj	APBPP3815L	M.Tech	Yes	28/07/2005	Thermal and Fluids Engineering	Assistant Professor	15/07/2006	Yes	Regular	
Dr. Jamadar Pr	ALZPJ7551M	Ph.D	Yes	03/10/2025	General Mechanical	Assistant Professor	01/08/2011	Yes	Regular	
Dr. Baviskar Pa	AMTPB0878Q	Ph.D	Yes	03/06/2025	Mechanical Engineering	Assistant Professor	01/08/2011	No	Regular	16/06/2025
Mr. Sachin Nar	DXYPP6227A	M.Tech	Yes	05/07/2017	CADCAM	Assistant Professor	01/07/2024	Yes	Regular	
Mr. Janardan B	DCPPB3984N	M.Tech	Yes	22/06/2023	Mechanical Engineering	Assistant Professor	28/08/2025	Yes	Regular	
Ms. Amerah Ba	AWVPA4225C	M.E.	Yes	12/10/2018	Computer Science and Engineering	Assistant Professor	01/04/2023	Yes	Regular	
Minakshi Hans	FQYPP5302K	M.E.	Yes	31/05/2025	Information Technology	Assistant Professor	14/07/2025	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 faculty members in Engineering Science Courses (NS2)	Percentage= No. of faculty members ((NS1*0.8) + (NS2*0.2))/(No. of required faculty (RF4)); Percentage=((NS1*0.8) +(NS2*0.2))/RF
2023-24(CAYm2)	600	30	19	15	61
2024-25(CAYm1)	900	45	24	16	50
2025-26(CAY)	900	45	24	17	50
				Average Percentage	53.56

9.2 Mentoring system (5) Total Marks 5.00

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 Local Guardian 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

Local Guardian (LG) System Allocation Structure: The Institute has implemented a structured Local Guardian (LG) 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 faculty take over as local guardians 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.

The mentoring system functions at various levels, namely the Faculty Members, the Head of the Department, and the Head of the Institution, and Alumnus ensuring comprehensive academic and personal 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/Local Guardian 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.

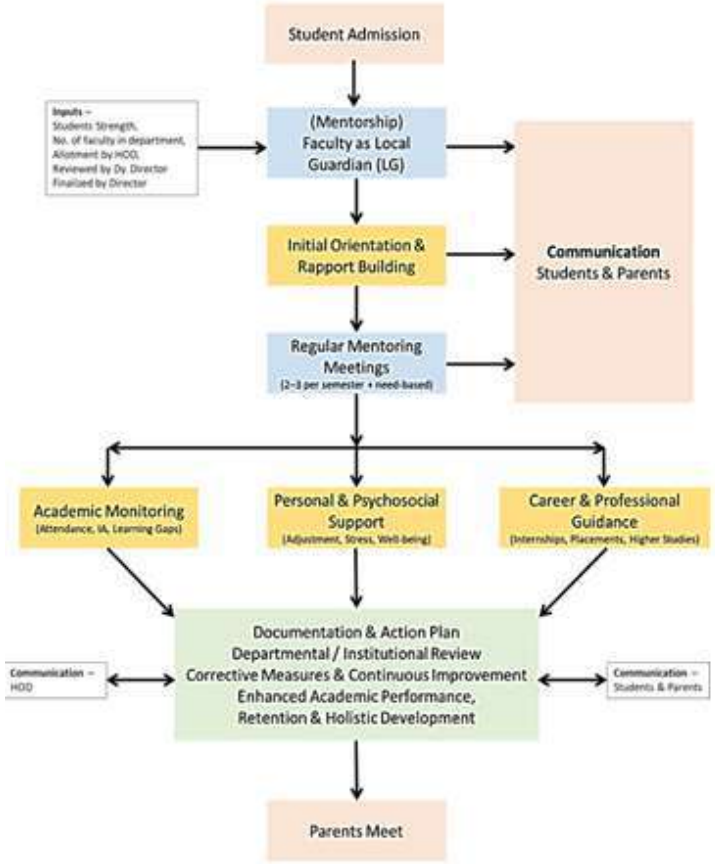


Figure 9.2.1: Structure and Process of the Local Guardian Mentoring System

Each student is assigned a faculty member as a Local Guardian (LG) 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 Local Guardian maintains LG 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 Local guardians: The Local Guardian acts as the primary link between students, parents, and the Institute, supporting academic progress and personal well-being. The Local Guardian 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: 2 to 3 meetings are conducted in a semester.

- 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: ERP system, Parent App, 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.

- Attendance and academic performance are communicated through official letters and warning notices.
- Semester-wise Parent–Teacher Meetings are conducted to discuss academic performance and overall development.
- Proactive local guardian communication with parents is carried out in cases of absenteeism, poor performance or behavioral issues.
- Same-day ERP alerts are sent to parents for student absenteeism.
- A dedicated Parent App enables parents to track attendance, examination results, and academic progress on a regular basis.

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 Campus Credential.
- Psychological well-being is recognized as essential for academic success and holistic development.
- Foreign Language Cell: Guidance for international exams, language proficiency, and global career opportunities.
- The Institute has active MoUs with industries, training organizations, and CSR partners to strengthen industry–academia collaboration under OBE.
- Alumni Mentorship Program: Career guidance, placement preparation, and industry exposure through alumni support.

B. Effectiveness of the Local Guardian (LG) 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, ERP alerts, and parent communication have minimized absenteeism.
- Early Identification of At-Risk Students: Timely detection of academic and personal issues enables prompt remedial and counselling 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, and industry MoUs strengthen employability skills.

- Psychological Well-Being: Institutional and professional counselling support student mental health.

9.3 Feedback Analysis (10) Total Marks 10.00

9.3.1 Feedback on Teaching and Learning Process and Corrective Measures Taken, if any (5)

Institute Marks : 5.00

The institute has established a structured and systematic feedback mechanism to obtain meaningful inputs from students on the Teaching–Learning Process and Academic Facilities. In addition to formal feedback tools, suggestion boxes installed at prominent locations on campus enable students to share concerns and suggestions freely.

Feedback is treated as a key quality enhancement tool and is regularly collected and analyzed for academic planning, faculty development, and infrastructure improvement, ensuring informed decision-making, transparency and continuous improvement across all programs.

Objectives

- To systematically obtain structured feedback from students on the Teaching–Learning Process and academic facilities.
- To assess the effectiveness of teaching practices and adequacy of infrastructure supporting learning.
- To identify strengths and improvement areas in academic delivery and facilities.
- To implement timely corrective and preventive actions based on feedback analysis.
- To enhance student satisfaction, engagement and overall academic experience.
- To institutionalize a continuous quality improvement mechanism through review and monitoring.

Institute has established, institutionalized and effectively implemented a systematic feedback mechanism to evaluate and continuously improve the Teaching–Learning Process across all undergraduate engineering programs.

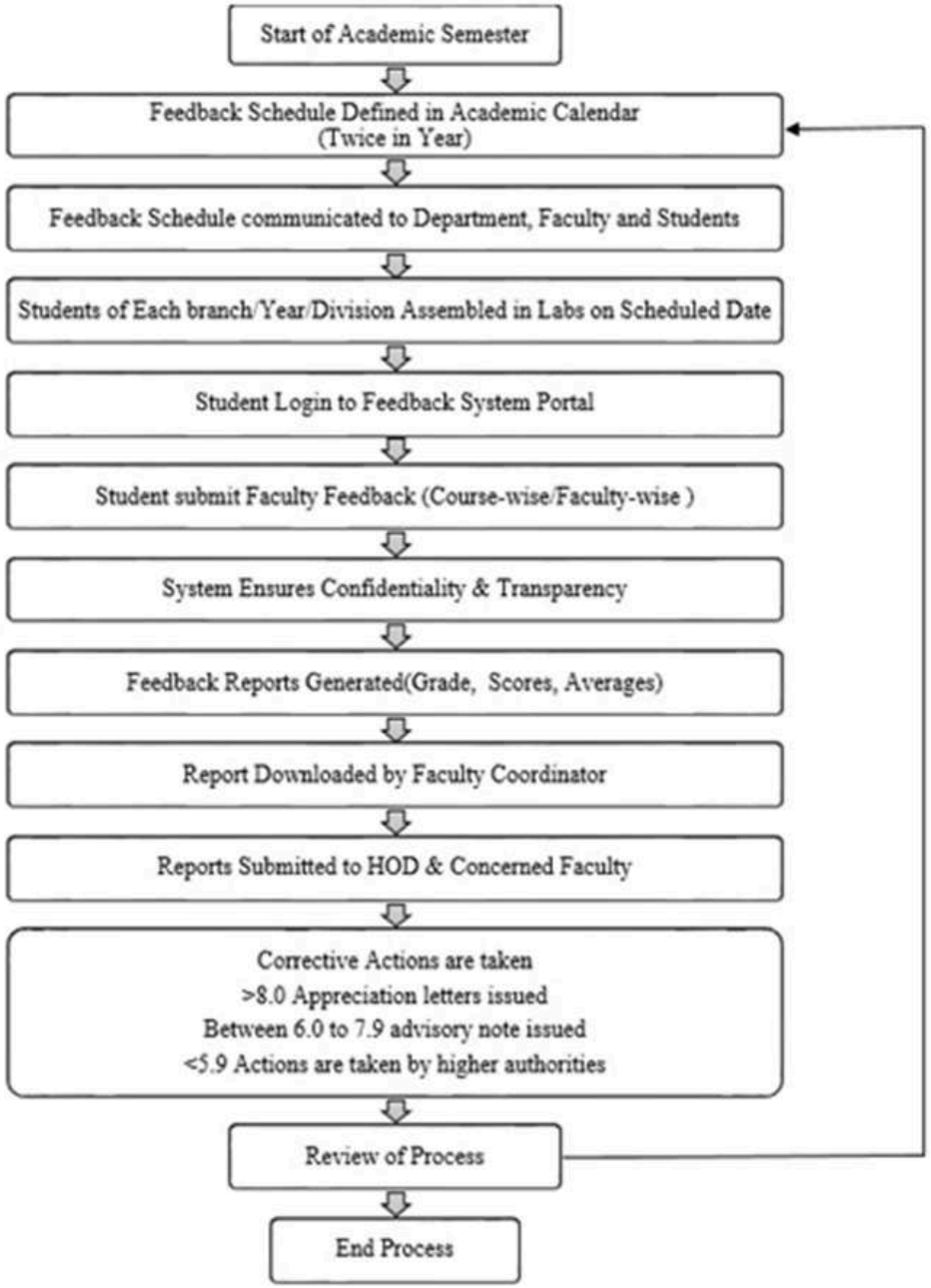
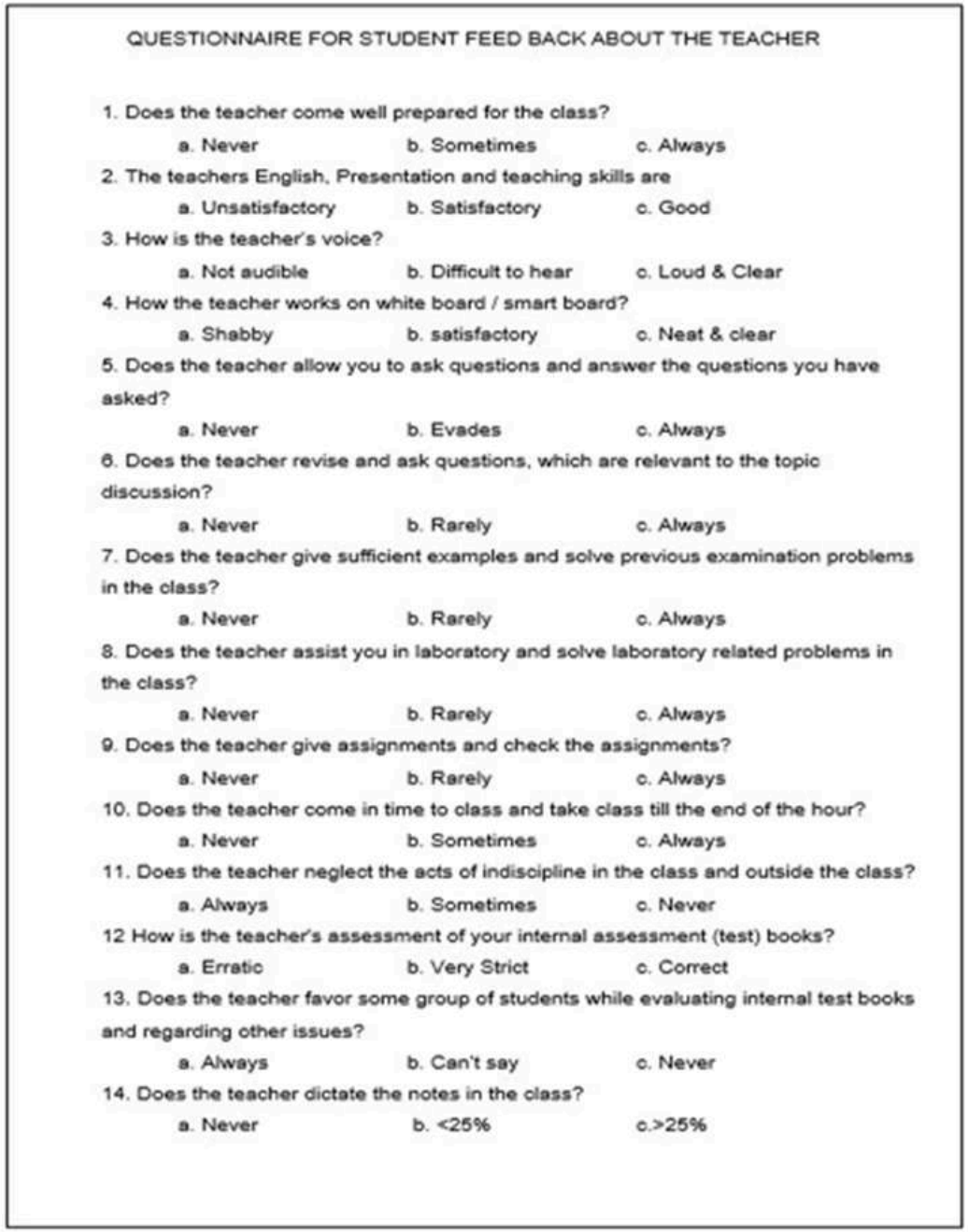


Figure 9.3.1.1: Process Flowchart for Student feedback system

Feedback on the Teaching–Learning Process is collected regularly through an online feedback system. The process is coordinated by a designated committee to ensure confidentiality, transparency, and unbiased responses. The institute has established a systematic mechanism to collect and review feedback on faculty and academic activities for continuous improvement. (Refer Figure 9.3.1.1)

A. Feedback questionnaire used

The Teaching–Learning Process feedback tool is thoughtfully designed to ensure holistic evaluation of teaching effectiveness across academic, pedagogical, and professional dimensions. The questionnaire covers key aspects of the teaching–learning process. (Refer Figure 9.3.1.2)



QUESTIONNAIRE FOR STUDENT FEED BACK ABOUT THE TEACHER

1. Does the teacher come well prepared for the class?
   a. Never b. Sometimes c. Always
2. The teachers English, Presentation and teaching skills are
   a. Unsatisfactory b. Satisfactory c. Good
3. How is the teacher's voice?
   a. Not audible b. Difficult to hear c. Loud & Clear
4. How the teacher works on white board / smart board?
   a. Shabby b. satisfactory c. Neat & clear
5. Does the teacher allow you to ask questions and answer the questions you have asked?
   a. Never b. Evades c. Always
6. Does the teacher revise and ask questions, which are relevant to the topic discussion?
   a. Never b. Rarely c. Always
7. Does the teacher give sufficient examples and solve previous examination problems in the class?
   a. Never b. Rarely c. Always
8. Does the teacher assist you in laboratory and solve laboratory related problems in the class?
   a. Never b. Rarely c. Always
9. Does the teacher give assignments and check the assignments?
   a. Never b. Rarely c. Always
10. Does the teacher come in time to class and take class till the end of the hour?
    a. Never b. Sometimes c. Always
11. Does the teacher neglect the acts of indiscipline in the class and outside the class?
    a. Always b. Sometimes c. Never
12 How is the teacher's assessment of your internal assessment (test) books?
    a. Erratic b. Very Strict c. Correct
13. Does the teacher favor some group of students while evaluating internal test books and regarding other issues?
    a. Always b. Can't say c. Never
14. Does the teacher dictate the notes in the class?
    a. Never b. <25% c.>25%

Figure 9.3.1.2: Questionnaire for Student Feedback on the Teaching–Learning Process

- Faculty preparedness, depth of subject knowledge, and systematic lesson planning.
- Clarity of communication, effectiveness of presentation, and audibility of voice.
- Appropriateness of teaching methodology and effective utilization of the teaching resources.
- Effectiveness of concept revision, questioning techniques, and problem-solving approach.
- Use of relevant examples, previous examination questions, and support during laboratory sessions.
- Quality of assignment design, fairness in evaluation, and timeliness of feedback.
- Punctuality, maintenance of classroom discipline, and professional conduct.
- Fairness, transparency, and objectivity in internal assessment processes.
- Classroom engagement practices including eye contact, approachability, and overall teaching style.

B. Feedback Analysis

The institution follows a well-defined and transparent mechanism for collecting and analyzing student feedback to enhance the quality of the teaching–learning process. This structured approach ensures continuous academic improvement through systematic evaluation and review. The process shown in Figure 9.3.1.3, consistently records an average student participation of 80% to 95%, demonstrating wide coverage, representativeness and reliability of the feedback data.

R. C. Patel Institute of Technology, Shirpur
(An Autonomous Institute)

Overall Feedback

Faculty Name: M.N.PATIL
Semester: 1
Academic Year: 2024-2025

Ques No.	a. Count	a. Multiplied	a. Sub Total	b. Count	b. Multiplied	b. Sub Total	c. Count	c. Multiplied	c. Sub Total	Obtained	Total	Percentage
1.	0	1	0	0	3	0	27	6	162	162	162	100.00%
2.	0	1	0	0	3	0	27	6	162	162	162	100.00%
3.	0	1	0	0	3	0	27	6	162	162	162	100.00%
4.	0	1	0	0	3	0	27	6	162	162	162	100.00%
5.	0	1	0	0	3	0	27	6	162	162	162	100.00%
6.	0	1	0	0	3	0	27	6	162	162	162	100.00%
7.	0	1	0	0	3	0	27	6	162	162	162	100.00%
8.	0	1	0	0	3	0	27	6	162	162	162	100.00%
9.	0	1	0	0	3	0	27	6	162	162	162	100.00%
10.	0	1	0	0	3	0	27	6	162	162	162	100.00%
11.	3	1	3	0	3	0	24	6	144	147	162	90.74%
12.	0	1	0	0	3	0	27	6	162	162	162	100.00%
13.	3	1	3	0	3	0	24	6	144	147	162	90.74%
14.	1	1	1	3	3	9	23	6	138	148	162	91.36%
Total Students:	27									2224	2268	9.81
Overall Feedback					Excellent							

Figure 9.3.1.3: Sample Faculty Feedback Report.

The student feedback system consists of 14 structured questions, as shown in the figure to evaluate the Teaching–Learning Process. Each question has three response options, namely Option A, Option B, and Option C, with scaling factors of 1, 3, and 6 respectively.

Let n be the total number of students who submitted feedback. The maximum marks for each question are calculated as 6 × n. The score for a faculty member for each question is calculated by multiplying the number of responses for Option A by 1, Option B by 3, and Option C by 6, and then dividing the total by 6 × n to normalize the score.

$$S = \frac{(n_A \times 1) + (n_B \times 3) + (n_C \times 6)}{6 \times n}$$

Where: n_A, n_B, n_C represent the number of responses received for Options A, B, and C respectively. This process is repeated for all 14 questions. The cumulative score obtained is then converted to a 10-point scale, based on which performance grades are assigned as per following table and based on that corrective actions are by the higher authorities.

8.0 to 10	6.0 to 7.9	4.0 to 5.9	2.0 to 3.9	0.0 to 1.9
Excellent	Good	Satisfactory	Un-Satisfactory	Poor

C. Corrective Measures

The institution follows a structured approach to enhance faculty performance by providing corrective support where needed and recognizing excellence. This ensures continuous improvement, professional development, and motivation among teaching staff.

- Faculty members receiving feedback grades greater than 8.0 are issued appreciation letters. Those receiving grades between 6.0 and 7.9 are given advisory notes, while appropriate corrective actions are taken by higher authorities for faculty members receiving lower feedback grades.
- Advised to participate in FDPs, STTPs, workshops, webinars, conferences, and industrial visits.
- Guided to prepare structured lecture notes and course materials.
- Encouraged to complete NPTEL and other certification courses.
- Positively considered in Faculty Appraisal Performance Indicator (API) evaluations.

9.3.2 Feedback on Academic Facilities (5)

Institute Marks : 5.00

During the assessment period, the institute systematically collected feedback from students to ensure the adequacy, effectiveness, and continuous improvement of academic and support infrastructure. The feedback focused on students' perceptions of facilities essential for a conducive teaching–learning environment and overall campus experience. In addition to the formal feedback process, students could report facility-related issues through direct communication with laboratory assistants, local guardians, course teachers, class teachers, class coordinators, HoD.

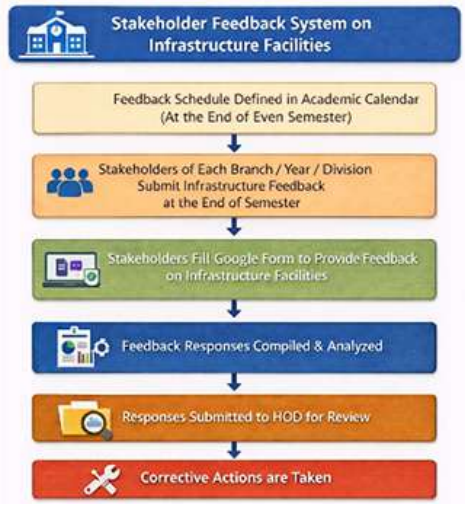


Figure 9.3.2.1: Mechanism for Student Feedback on Infrastructure Facilities

This multi-level approach enabled prompt identification and resolution of day-to-day operational issues. (Refer Figure 9.3.2.1).

A. Feedback questionnaire used

This questionnaire is designed to collect feedback from students regarding the availability, quality, and effectiveness of academic facilities, infrastructure, and support services provided by the institute (Refer Table 9.3.2.1). The responses will help identify strengths and areas for improvement in order to enhance the overall learning environment and campus experience.

Table No.9.3.2.1: Questionnaire for Academic Facilities Feedback

Sr. No	Statement	1	2	3
	Academic Facilities			
1.	Classrooms are well-maintained and conducive to learning			
2.	Laboratories are adequately equipped and regularly maintained			
3.	Library resources meet academic needs			
4.	Internet/Wi-Fi connectivity is reliable across academic blocks			
	Technical & Digital Infrastructure			
5.	Computer labs provide sufficient hardware/software			

Sr. No	Statement	1	2	3
6.	Smart classrooms and digital tools enhance teaching quality			
7.	Hostel rooms are clean, safe, and well-maintained			
8.	Mess facilities provide hygienic and nutritious food			
9.	Security measures in hostels are adequate			
Campus Environment & Amenities				
10.	Campus cleanliness and waste management are Satisfactory.			
11.	Sports, Gym and recreation facilities meet student Needs.			
12.	Medical and emergency facilities are accessible.			
13.	Transportation and parking facilities are adequate.			
Support & Services				
14.	Administration responds promptly to facility-related issues			
15.	Maintenance & repair requests are resolved in a Timely Manner.			

Rate each statement on a scale of 1 to 3, Where: 1 = Dissatisfied | 2 = Neutral | 3 = Satisfied

Stakeholders provided their responses on the following facility-related aspects:

- Classrooms: Smart boards/projectors, lighting, seating arrangements, ambience and air-conditioning facilities.
- Departmental and Central Laboratories: Availability and adequacy of hardware, software, tools and equipment.
- Library and Learning Resources: Access to books, journals, e-resources and other study materials.
- Computing, Wi-Fi, and Internet Connectivity: Reliability, speed and accessibility.
- Cleanliness and Ambience: Maintenance, sanitation and overall campus environment.
- Power Backup: Availability and reliability of uninterrupted power supply.
- Safety and Security Facilities: Adequacy of safety measures, security systems and emergency preparedness.
- Common Amenities and Student Support Services: Availability and effectiveness of facilities such as cafeterias, rest areas and student support offices.

The stakeholder facility feedback consists of 15 structured questions, as shown in the Table No.9.3.2.1, designed to evaluate the adequacy and effectiveness of institutional facilities supporting the Teaching–Learning Process. Each question provides three response options, namely Option A, Option B, and Option C. For each question, the number of responses received for Option A and Option B is calculated. If the combined percentage of responses for Options A and B exceeds 80% of the total responses, the facility is considered satisfactory and no improvement is required. If this percentage is less than 80%, the issue is identified for attention and appropriate corrective measures are initiated.

B. Frequency of Feedback and Its Impact

Feedback is collected annually for three consecutive assessment years and consolidated for analysis under the supervision of the IQAC. Feedback from formal tools and informal channels is reviewed through committee discussions to identify gaps and recommend appropriate corrective and preventive actions at departmental and institutional levels for continuous quality improvement.

The institute collects stakeholder feedback on infrastructure once every academic year at the end of the even semester, as specified in the academic calendar. Students from each branch and division submit their feedback through online forms, which is then compiled and analyzed by the department. The results are reviewed by the Head of the Department, and necessary corrective actions are implemented. This regular feedback system helps improve classrooms, laboratories, digital infrastructure, and campus facilities, thereby enhancing the overall teaching–learning environment and student experience.

C. Observations and Corrective Actions

The feedback analysis highlighted several areas requiring improvement in infrastructure and facilities. Stakeholders indicated the need for smart boards, upgraded classrooms, air-conditioning facilities, and overall improvement in physical infrastructure. Concerns were also raised regarding internet speed and connectivity, power backup systems, and availability of adequate laboratory resources. Additionally, there was a requirement for updated software and technical tools, along with improvements in cleanliness, hygiene, safety measures, and the overall campus ambience to support a better academic environment.

Based on the feedback received, the institute implemented several corrective measures to enhance the infrastructure and learning environment. These included the installation of smart boards, improvement in classroom lighting, AC upgrades, and modernization of classroom facilities. The institute also increased internet bandwidth, strengthened power backup systems, upgraded laboratories, updated software resources, and improved library and lift facilities. Furthermore, efforts were made to enhance campus safety, sanitation, and housekeeping, while also promoting student clubs, digital learning platforms, sports facilities, and outreach activities to create a more supportive and engaging campus environment.

9.4 Training and Placement Support (10) Total Marks 10.00

Institute Marks : 10.00

The Institute has established a comprehensive, structured, and continuously monitored Training and Placement Support system to enhance students' employability, career readiness, higher studies preparedness, and professional progression. The system explicitly addresses training support, scheduled training calendar, career guidance and counseling, industry interaction for pre-placement and internships, placement facilitation, and support for higher studies, Outcome-Based Education (OBE), and NEP 2020. The Institute has a dedicated Training and Placement Cell responsible for planning, organizing, and implementing training and placement activities for students of first year to final academic year.

A. Infrastructure and Facilities for Training and Placement Cell

Training and Placement Cell focus on Trainings, Placements and for Career guidance to students by taking help of Alumni strength and interaction with industry. TPC has a well-established infrastructure to cater to the said services. The career guidance to students is done at well-structured one to one mentoring and through professional counseling. Pre-placement and industry-specific training are done at every stage of their undergraduate studies.

Objectives of Placement Cell:

- To Enhance students technical, behavioral, and leadership skills.
- Facilitate certifications, mock interviews, resume building, and soft-skill grooming.
- To Bridge the gap between Industry and Academic Practices MOU'S-Memorandum of Understanding with Industries.
- To Share the Experience and Expertise of alumni through Alumni–student mentorship and Industry personal for students Benefit.
- To organize various Workshops, Training Programs with Joint Participation of the faculty and The Industries.
- To organize industrial visits and industry interaction programs for students to provide practical exposure to real-world working environments.
- To offer career counseling and professional guidance along with foreign language training (Japanese and German) to choose suitable career paths and higher education opportunities.
- To create and facilitate employment and internship opportunities by establishing strong linkages with industry and corporate organizations.
- To match students' skills, competencies, and interests with appropriate job profiles, ensuring better employability and career alignment.

Training and Placement Organizational Structure: The Training and Placement Cell is headed by the Director, who provides overall policy direction, leadership, and periodic review to ensure alignment with the institution's vision and outcome-based education (OBE) framework. The Training & Placement Advisory Committee, chaired by the Deputy Director, supports strategic planning, industry linkage development, and continuous monitoring of placement-related activities.

The Head – Training & Placement (TPO) is responsible for the overall coordination, execution, and effective implementation of training, internships, and placement processes. The TPO acts as the central point of contact between students, faculty, alumni, and industry partners.

The cell is supported by specialized functional units focusing on Industry Interaction & Placement, Alumni Interaction for Placement, Training & Skill Development, and Career Guidance & Higher Studies, ensuring comprehensive student support from skill enhancement to career planning. (Refer Figure 9.4.1) At the operational level, Department Placement Coordinators provide department-wise support, maintain student and placement data, and coordinate departmental activities. Student Placement Coordinators assist in student communication, logistics, and smooth conduct of training programs, industrial visits, and placement drives, ensuring efficient and transparent placement operations. (Refer figure 9.4.2)

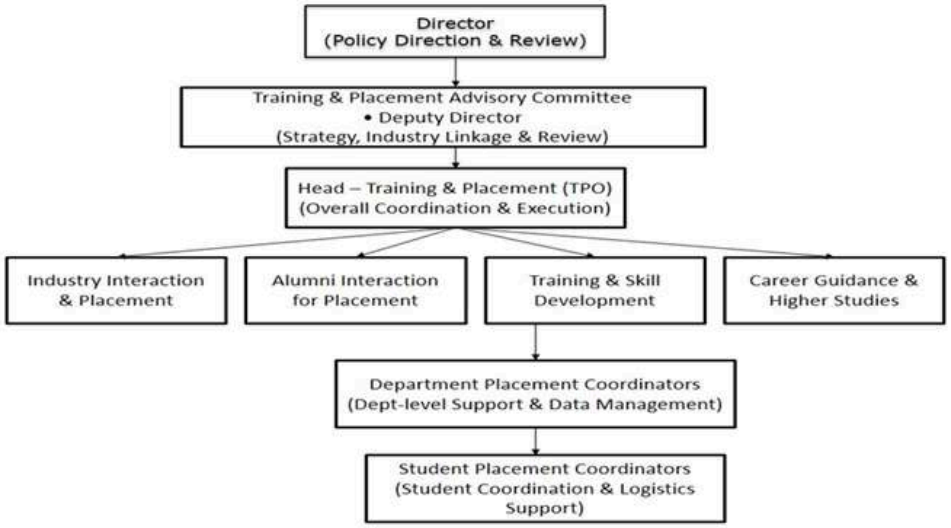


Figure 9.4.1: Training and Placement Cell – Organizational Hierarchy

Pre-Placement Preparation Facilities of training and placement cell: The Training and Placement Cell provides comprehensive pre-placement preparation facilities to equip students with the required technical skills, aptitude, soft skills, and professional readiness for employment and higher education opportunities.

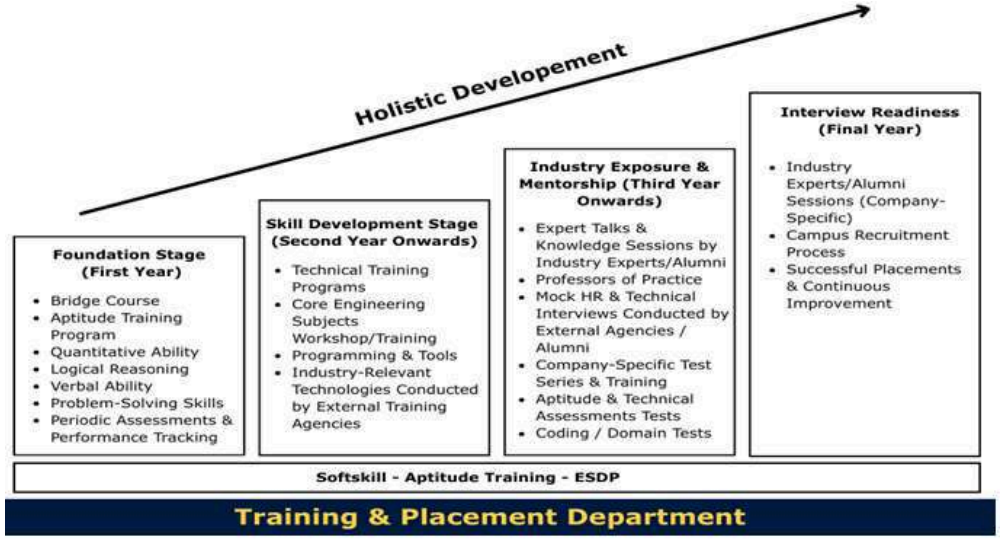


Figure 9.4.2: Training and Placement Framework for Holistic Development

Table No.9.4.1: Training & Skills Enhancement Facilities.

Skills	Facilities
Aptitude & Soft Skill Training	• Basic English communication. • Quantitative aptitude. • Logical reasoning and numerical analysis. • Resume writing & Group discussion sessions. • Mock personal interview sessions.
Computer & Language Proficiency Courses	• C, C++, Java programming. • AWS • HTML, CSS, SQL • japanese & German language proficiency.
Core Domain Placement Assisted Training Courses	• CCNA. • Electrical Automation. • AutoCAD (2D), CREO & Unigraphics • Revit Architecture. • PLC / SCADA • SME-oriented technical training

B. Adequate Staff for Training & Placement Support

To align academic processes with industry requirements and enhance student employability, the Industry–Institute Interaction Cell has been constituted and has been functioning effectively since the academic year 2013–14. The members of the cell are listed below

Table No.9.4.2: Training & Placement Staff

Sr. No	Name of Member	Post/Designation
1	Prof. Milkesh P. Jain	Head-Industry Institute Interaction Cell/TPO
2	Prof. Krunal P. Rane	Assistant TPO
3	Prof.Dr.Pandit S.Patil	T & P Coordinator
4	Prof. Dr.Vinit V. Patel	T & P Coordinator
5	Prof. Mayur J. Patil	T & P Coordinator

Sr. No	Name of Member	Post/Designation
6	Prof. Akash S. Pawar	T & P Coordinator
7	Prof.Krunal J.Gandhi	T & P Coordinator
8	Prof. Kailas D.Deore	T & P Coordinator

The Training & Placement Cell is led by the Head – Training & Placement (TPO) and supported by an Assistant TPO, Department Placement Coordinators, and Student Placement Coordinators for effective coordination and smooth execution of placement activities. (Refer Table 9.4.2 and 9.4.3)

The cell is further strengthened by trained faculty and industry experts from platforms such as Code Chef, Campus Credentials and Japanese German language, who conduct structured training, workshops, mock interviews, and career guidance aligned with industry requirements.

Table No.9.4.3: List of trainers associated with T&P Department

Sr. No	Trainer Name	Skill Specialization
1	Mr. Harjot Singh Guliani	Aptitude
2	Mr. Musharraf Hassan	Aptitude
3	Mr. Vishwajeet Dhuppe	Aptitude
4	Mr. Sachin Bhosale	Aptitude
5	Mr. Jay Prakash	Aptitude
6	Mr. Nishant Thakare	Aptitude
7	Mr. Sumit Gaikwad	Aptitude
8	Mr. Manish Thakur	Technical IT
9	Mr. Raunak Mitra	Technical IT
10	Mr. Ashish Gadpayle	Technical IT
11	Mr. Prashant Jha	Technical IT
12	Mr. Akash Satdeve	Technical IT
13	Mr. Jayesh Raut	Technical IT

Sr. No	Trainer Name	Skill Specialization
14	Mr. Prashant Shinde	Technical IT
15	Mr. Ganesh Bhosle	Verbal/ Soft Skill
16	Mr. Rakesh Palkhe	Verbal/ Soft Skill
17	Mr. Noor Ahmad	Programming and Coding
18	Mr. Jivan Jyoti	Programming and Coding
19	Mr. Pavan Kumar Rao	Japanese language
20	Mis. Reena Meena	German language

C. Pre-Placement Training Activities & Placement Process

The Training and Placement Cell provides comprehensive career guidance, industry exposure, and skill development support to enhance students' employability, entrepreneurship, and higher education prospects.

These activities are systematically planned to align student aspirations with industry expectations and outcome-based education goals.

- Placement-Oriented Counseling: Mock interviews, resume building, and interview readiness workshops in coordination with academic departments.
- Alumni Mentorship & Industry Exposure: Alumni mentoring, expert talks, and global industry exposure sessions to provide real-world insights.
- Industry Interaction: Guest lectures, workshops, industrial visits, pre-placement talks, and employer feedback for skill-gap identification.
- Internship Support: Internship facilitation through MoUs, alumni networks, internship drives, and implementation of the Institute Internship Policy.
- Placement Support: Pre-placement training (aptitude, technical, soft skills), resume and profile development, mock recruitment activities, and employer engagement.
- Higher Studies Support: Guidance for GATE, GRE, TOEFL, IELTS, CAT, and assistance with applications and documentation.

Improved career clarity, enhanced employability skills, increased placements and internships, higher studies admissions, and entrepreneurial orientation. The Training and Placement (T&P) process is a structured and systematic approach designed to guide students from career orientation to final placement. (Refer Figure 9.4.3)

It ensures effective coordination between students, the institute, and recruiting organizations, while also focusing on skill development, transparency, and continuous improvement.

Step-by-Step Process

- Orientation session by T&P for third-year students on available career options.
- Students submit placement policy/undertaking forms and indicate their area of interest.
- Expert, technical, and alumni talks are organized to brief students on industry trends.
- T&P department contacts and invites companies for campus recruitment.
- Recruiters share job details, eligibility criteria, and selection procedures.
- Interested students register through Google Forms or company-specific portals.
- Details of eligible and interested students are shared with company HR teams.
- Students are informed about recruitment schedules and selection processes.
- Pre-placement training is provided, including aptitude, technical, GD, and PI sessions.
- Companies visit the campus and conduct recruitment activities.

- Final selection list is announced by the recruiting company.
- T&P department circulates the selected students' list to all stakeholders.
- Recruitment records and employer feedback are documented.
- Exit meeting is conducted to review outcomes and suggest improvements.
- Student feedback is collected and used for further enhancement of the process.

Figure 9.4.3: Process Flow of Training & Placement Activities

The Training and Placement (T&P) Cell plays a crucial role in organizing continuous and structured training programs to enhance student employability. During the academic year 2023–24, 11 training programs were conducted, which increased to 16 in 2024–25 and further to 17 in 2025–26, reflecting the institution's sustained commitment to career readiness.

Table No.9.4.4: Year-wise Number of Training Programs Conducted by the Training & Placement Cell

Academic Year 2025-26	Academic Year 2024-25	Academic Year 2023-24
17	16	11

In 2025–26, the T&P Department organized diverse skill enhancement and pre-placement training programs. The Department has established a total of 30 Memoranda of Understanding (MoUs) in collaboration with reputed industries, organizations, and professional agencies to enhance academic quality, skill development, and student employability.

Out of these, 16 MoUs are focused on technical skill development, undertaken in collaboration with organizations such as CodeQuotient Pvt. Ltd., Sunrise Mentors Pvt. Ltd. (Coding Ninjas), Sorting Hat Technologies Pvt. Ltd. (CodeChef), Kruxonomy Consulting Pvt. Ltd. (MachineHack), Tessolve Semiconductor Pvt. Ltd., Campus Credentials, R3 Systems India Private Limited, Ambetronics Engineers Pvt. Ltd., Zitics Private Limited, Casepoint Private Limited, Esamyak Software Pvt. Ltd., EagleByte Solutions Pvt. Ltd., Infosys Limited (Springboard), Make MyCareer WCF, and CodeChef, facilitating structured training in core engineering skills, emerging technologies, and industry-relevant competencies. In addition, 5 MoUs are dedicated to soft skill and holistic development, in association with RPG Foundation, Centum Foundation, Effective German Academy, and Yen Academy, focusing on aptitude development, communication skills, life skills, foreign language training, and overall career readiness.

Table No.9.4.5: Sample Activities conducted by the T&P Department

Sr. No	Name of Training Activity / Program	Skills / Focus Area	Target Students	Resource Person / Agency
1	Full Stack Developer Program	Full Stack Developer	Final Year	Symbiosis Pune
2	Softskill/Aptitude Training Program (Batch 1)	Softskill/ Aptitude Training	Final Year	The Barclays GTT Foundation
3	Softskill/Aptitude Training Program (Batch 2)	Softskill/ Aptitude Training	Final Year	The Barclays GTT Foundation
4	Mahindra NAANDI Foundation- Batch 1 (life, soft, communication, interview skills)	Life skill, soft skill, communication, interview skills	Final Year	Naandi Foundations Mahindra
5	Mahindra NAANDI Foundation- Batch 2 (life, soft, communication, interview skills)		Final Year	Mahindra Naandi Foundations
6	Mahindra NAANDI Foundation- Batch 3 (life, soft, communication, interview skills)		Final Year	Mahindra Naandi Foundations
7	Ethnus Training Program-FSD MERN	FSD MERN	Final Year	Infosys Foundation
8	Ethnus Training Program-AWS	AWS	Final Year	Infosys Foundation
9	r3 Sys Training IT skill development	IT skill development	Third Year	R3 Systems India Private Limited
10	r3 Sys Training_2026 for IT skill development	IT skill development	Second Year	R3 Systems India Private Limited
11	Technology Training Program	Technology Training	First to Final Year	Infosys Springboard

Sr. No	Name of Training Activity / Program	Skills / Focus Area	Target Students	Resource Person / Agency
12	Future Skills Development Program	Future Skills Development	Final Year	Symbiosis FSD
13	Java Project Based Learning	Java Project Based Learning	Final Year	Wipro TalentNext

Further, 9 MoUs are generic in nature and are utilized for academic interaction and allied activities such as project-based learning, internships, remote assignments, consultancy work, placement support, expert lectures, workshops, résumé building, syllabus revision, social outreach, and industrial exposure. These generic MoUs are established with Guruji Foundation, TCS Ltd., Persistent Systems (Pune), ISKCON Shirpur, Shirpur Constructions/Quantum, Dataserve Infotech Pvt. Ltd. (Pune), CVDragon India, Shalaka Pvt. Ltd., and Konark Global Pvt. Ltd. Collectively, these collaborations significantly enhance experiential learning, industry exposure, professional competence, and continuous academic enrichment of students, thereby strengthening their overall industry readiness. Notable programs included Full Stack Development training with Symbiosis Pune and Infosys Foundation Ethnus, AWS training, Java and Database training under Wipro Talent Next, Infosys Springboard initiatives, soft skill programs with Barclays GTT Foundation, and life skills training through Nandi Foundation in association with Mahindra. Specialized programs such as Zensar ESD, r3 Sys training, and Japanese and German language courses further strengthened students' global competencies.

Table No.9.4.6: Calendar of Training Activities / Programs

Sr No	Activity (Training /soft skill)	Month and Duration	No of Hours	Target Students
1	Bridge courses and induction program	September	70 Hrs.	FY
2	Employability and Skill Development Program (ESDP)	September to March	40 Hrs.	FY
3	Employability and Skill Development Program (ESDP)	September to March	40 Hrs.	SY
4	Employability and Skill Development Program (ESDP)	September to March	40 Hrs.	TY
5	Internship	January to June	6 Months	B.Tech
6	Alumni Interactions	Periodically (year-round)	45Hrs.	FY/SY/ TY/B.Tech
7	Foreign language training (Japanese/ German)	Periodically (year-round)	180Hrs.	FY/SY/ TY/B.Tech

Sr No	Activity (Training /soft skill)	Month and Duration	No of Hours	Target Students
8	Industry Expert sessions	Periodically (year-round)	65Hrs.	SY/TY/ B.Tech
9	CodeChef	Periodically (year-round)	4Hrs Weekly	FY/SY/ TY/B.Tech
10	Mock Interview	Periodically (year-round)	Departm ent and T&P Level	FY/SY/ TY/B.Tech
11	Full Stack Developer Program	July	100+ Hrs.	Final Year
12	NAANDI Foundation-Batch (life, soft, communication, interview skills)	June	36 Hrs.	Final Year
13	Ethanus Training Program-FSD MERN	July/ Sept	100+ Hrs.	Final Year
14	Ethanus Training Program-AWS	July	100+ Hrs.	Final Year
15	r3 Sys Training IT skill development	July	200+ Hrs.	Final Year
16	Technology Training Program Infosys Springboard	July	150+ Hrs.	Final Year
17	Future Skills Development Program Symbiosis FSD	Sept	100+ Hrs.	Final Year
18	Java Project Based Learning Wipro TalentNext	August	150+ Hrs.	Final Year

D. Support for Higher Studies.

Regular career guidance sessions and one-to-one counseling are organized to guide students towards placements, higher studies, competitive examinations, and entrepreneurship. The Institute provides comprehensive and continuous career guidance and counseling support to students through the Training and Placement Cell (TPC) in coordination with academic departments and institute-level leadership.

The objective is to guide students towards placements, higher studies, competitive examinations, entrepreneurship, and global career opportunities.

Structured Career Guidance Mechanism

- Regular career guidance sessions are conducted to create awareness about career options in core engineering, IT, higher education, government services, and entrepreneurship.
- One-to-one counseling sessions are organized for students to identify individual strengths, career interests, and skill gaps, and to provide personalized career roadmaps.

Meetings with Institute Authorities

- Periodic meetings with the Training and Placement Officer (TPO) and Training and Placement Cell (TPC) are conducted to guide students on placement strategies, internship planning, resume preparation, and recruitment process expectations.
- Career guidance meetings with the Director are organized to motivate students, provide strategic direction, and align academic performance with long-term career goals.

Support for Global Careers and Higher Studies

- Career guidance sessions conducted by the Dean – Foreign Language focus on international career opportunities, foreign language proficiency (Japanese, German, etc.), and pathways for global employment and higher studies abroad.
- Students are guided regarding international certifications, language requirements, and cross-cultural career readiness (Goethe, JLPT).

Foreign Language Training

The International Relations and Higher Studies Cell is a testament to our institutions commitment to bridging academic boundaries and creating a global learning environment. Foreign Language Cell. Under the Foreign Language Cell, RCPIT actively promotes global employability and cross-cultural competence among students by offering structured foreign language training programs.

The institute currently conducts Japanese and German language programs, aligned with international industry requirements and higher education opportunities. To strengthen academic and industry collaboration, Memoranda of Understanding (MoUs) have been established with relevant language training and professional organizations.

These collaborations facilitate expert-led training, webinars, workshops, and guidance sessions, providing students with exposure to global career pathways, international work culture, and overseas education prospects.

The Foreign Language Cell regularly organizes:

- Certified training programs in Japanese and German languages
- Webinars and expert talks by language professionals and industry experts
- Career guidance sessions highlighting international job opportunities and higher studies
- Collaborative activities under MoUs, including mentoring and skill-oriented workshops

Table No.9.4.7: List of Recruiter Visited 2024-25 Batch

Sr. No.	Name of The Recruiter	Program participated	On/Off Campus
1	Zydus	E&TC,Electrical,Mechanical	On Campus
2	TSS	Comp,DS,AIML,E&TC,	On Campus
3	Rheal Software	Comp,DS,AIML,E&TC,	On Campus
4	Squad Synergy	Electrical	On Campus
5	Johnson Controls	E&TC,Electrical,Mechanical	Off Campus

Sr. No.	Name of The Recruiter	Program participated	On/Off Campus
6	Recruit CRM	Comp,DS,AIML,E&TC,	Off Campus
7	Patseer	Comp,DS,AIML,E&TC,	On Campus
8	Quality Kiosk	Comp,DS,AIML,E&TC,	On Campus
9	Fox Solutions	E&TC,Electrical,	On Campus
10	Zeal Manufacturing	E&TC,Electrical,	On Campus
11	Tessolve	E&TC,Electrical,	On Campus
12	CodeQuotient	Comp,DS,AIML,E&TC,Civil,Electrical, Mechanical	Off Campus
13	Faurecia	E&TC,Electrical,Mechanical	Off Campus
14	Probian Tech Pvt Ltd	Civil	On Campus
15	Green Design	Civil	On Campus
16	Ambetronics Engineering Pvt Ltd,Mumbai	E&TC,Electrical,Mechanical	On Campus
17	Nvidia	Comp,DS,AIML,E&TC,	Off Campus
18	Tech Mahindra	Comp,DS,AIML,E&TC,	Off Campus
19	Delhivery	Comp,DS,AIML,E&TC,Civil,Electrical, Mechanical	On Campus
20	Wonder Cement	E&TC,Electrical,Mechanical	Off Campus
21	Sayeesha Infrastructure	Civil	Off Campus
22	Eagle Byte	Comp,DS,AIML,E&TC	On Campus
23	Apmosys Tech	Comp,DS,AIML,E&TC	On Campus

Sr. No.	Name of The Recruiter	Program participated	On/Off Campus
24	Endurance Technologies Ltd.	Electrical,Mechanical	Off Campus
25	Indovance Pvt. Ltd.	Civil	On Campus
26	Quantum Industries	Civil	On Campus
27	Campus Credentials	Comp,DS,AIML,E&TC,Electrical,Mechanical	On Campus
28	WebTech	Comp,DS,AIML,E&TC,Electrical,Mechanical	On Campus
29	Yamai Technologies	E&TC,Electrical,Mechanical	On Campus
30	Wind Hans Technologies	Electrical	Off Campus
31	Bharat Urja Electricals & Engineering	Electrical	Off Campus
32	InfraBeat Technologies Pvt. Ltd.	Comp,DS,AIML	Off Campus
33	Bit2Sky India Pvt. Ltd	Comp,DS,AIML	Off Campus
34	Cipher Web Infotech	E&TC	Off Campus
35	R3Sys India Pvt.Ltd.	Comp,DS,AIML,E&TC	On Campus
36	RSB Techno Services	Electrical	Off Campus
37	Fuelmatrix	E&TC	Off Campus
38	Kirloskar Pneumatic Company Limited	Mechanical	Off Campus

Sr. No.	Name of The Recruiter	Program participated	On/Off Campus
39	Maharashtra State Board Vocational Education and Training Skill development (MSBSVET)	Comp,DS,AIML,E&TC	On Campus
40	Suzlon	Electrical,Mechanical	On Campus
41	AISOLO	Comp,DS,AIML,E&TC	On Campus
42	RDC concrete	Civil,Electrical,Mechanical	Off Campus
43	Jabil	E&TC,Electrical	Off Campus
44	Primus Techsystems Private Limited	Comp,DS,AIML,E&TC	Off Campus
45	Talento	Comp,DS,AIML,E&TC	Off Campus
46	Microdynamic Software Private Limited	Comp,DS,AIML,E&TC	Off Campus
47	Hiliks Technologies Ltd.	Civil	On Campus
48	Reliance	Civil,Electrical,Mechanical	Off Campus
49	Humming Byte Technologies Pvt. Ltd	Comp,DS,AIML,E&TC	Off Campus
50	BuildINT	Comp,DS,AIML,E&TC	On Campus
51	Jackson Green	Civil	On Campus
52	WebLine	Comp,DS,AIML,E&TC	On Campus
53	Codeest	E&TC,Electrical	On Campus

Sr. No.	Name of The Recruiter	Program participated	On/Off Campus
54	SJ Contracts	Civil	On Campus
55	Siddharth Carbochem	Mechanical	Off Campus
56	Suroj Buildcon Pvt Ltd	Civil	On Campus
57	Hitachi Astemo	Mechanical	On Campus
58	Bombay Flying Club	E&TC,Mechanical	On Campus
59	Entecrese Labs	E&TC,Electrical,Mechanical	On Campus
60	Cybernetics Software Pvt. Ltd	DS	Off Campus
61	Twin Engineers Pvt.Ltd.,Pune	Mechanical	Off Campus
62	Megha Engineering	Civil,Electrical,Mechanical	On Campus
63	Webber Electrocorp	Comp,DS,AIML,E&TC	On Campus
64	Altimetrik	Comp,DS,AIML	On Campus
65	STEMx India	E&TC,Electrical	Off Campus
66	Celebal	Comp,DS,AIML,E&TC	Off Campus
67	Angel CAD CAM	Mechanical	Off Campus
68	CIE Automotive	E&TC,Electrical,Mechanical	Off Campus
69	Ashra Filters Pune	Comp,DS,AIML,E&TC,Civil,Electrical, Mechanical	Off Campus
70	Dhanvanthri Engineers Pvt Ltd Mumbai	Electrical	Off Campus
71	Tau Power Electronics Pvt Ltd	E&TC,Electrical	Off Campus

Sr. No.	Name of The Recruiter	Program participated	On/Off Campus
72	Welspun Corp Limited(Sintex)	Mechanical	On Campus
73	Virtuoso Projects and Engineers Pvt. Ltd.	E&TC	On Campus
74	JBM Auto	Electrical	On Campus
75	Mungi Engineers	Electrical,Mechanical	On Campus
76	Nimap	Comp,DS,AIML,E&TC	On Campus
77	LG Balakrishnan and Bros Ltd	Electrical,Mechanical	Off Campus
78	Paranjape Autocast Pvt. Ltd	Mechanical	Off Campus
79	Cognizant	Comp,DS,AIML,E&TC,Electrical,Mechanical	On Campus
80	The Nahars Engineering India Pvt Limited	E&TC,Electrical,Mechanical	Off Campus
81	Sutherland	Comp,DS,AIML,E&TC,Civil,Electrical, Mechanical	Off Campus
82	Tenneco Clean Air India Pvt. Ltd.	E&TC,Electrical,Mechanical	On Campus
83	L&T Technology Services Pune	Mechanical	Off Campus
84	GE Vernova,Vadodara	Mechanical	Off Campus
85	SVKM	Civil,Electrical,Mechanical, Comp,DS,AIML,E&TC	Off Campus
86	R&W,Pune	E&TC,Electrical,Mechanical	Off Campus
87	Techbean	E&TC,Electrical	On Campus
88	Lumax	E&TC,Electrical	Off Campus

Sr. No.	Name of The Recruiter	Program participated	On/Off Campus
89	Lear	Comp,DS,AIML,E&TC	Off Campus
90	MRF	E&TC,Electrical,Mechanical	Off Campus
91	SM Auto	E&TC,Electrical,Mechanical	Off Campus
92	Tube Investment India	E&TC,Electrical,Mechanical	Off Campus
93	Jaya Hind Industries Pvt Ltd	Electrical,Mechanical	Off Campus
94	NRB Bearning	Mechanical	Off Campus
95	Navgurukul	Comp,DS,AIML,E&TC	On Campus
96	SISECAM Glass	Civil,Electrical,Mechanical	On Campus
97	The Indian Hume Pipe Co.Ltd	Civil,Electrical,Mechanical	On Campus
98	BizDigital IT Services Private Limited	Comp,DS,AIML	Off Campus
99	Vayve Mobility Pvt Ltd(EVA)	E&TC,Electrical	Off Campus
100	Searce	Comp,DS,AIML	Off Campus
101	Rabbit and Tortoise Technology Solutions	Comp,DS,AIML	On Campus
102	TCS	Comp,DS,AIML,E&TC,Civil,Electrical, Mechanical	On Campus
103	Wipro	Comp,DS,AIML,E&TC,Civil,Electrical, Mechanical	On Campus

Table No.9.4.8: List of Recruiter Visited 2023-24 Batch

Sr. No.	Name of The Recruiter	Program participated	On/Off Campus
1	TSS	Comp,DS,E&TC,Civil,Electrical,Mechanical	On Campus
2	Netwin	Comp,DS,E&TC,Electrical	On Campus
3	Casepoint	Comp,DS,E&TC,Electrical	On Campus
4	Zydus	Comp,DS,E&TC,Electrical,Mechanical	On Campus
5	Tessolve	Comp,DS,E&TC,Electrical	Off Campus
6	RecruitCRM	Comp,DS,E&TC	Off Campus
7	QualityKiosk	Comp,DS,E&TC	On Campus
8	Faurecia	E&TC,Mechanical	Off Campus
9	Metaroll	Civil	On Campus
10	NVIDIA	Comp,DS,E&TC	On Campus
11	Persistent	Comp,DS,E&TC	On Campus
12	Mungi Engineers	Electrical,Mechanical	On Campus
13	CapitalVia	Comp,DS,E&TC,Civil,Electrical,Mechanical	On Campus
14	Grow Steel Tech	Civil	On Campus
15	Hexaware	Comp,DS,E&TC,Electrical	On Campus
16	Plane Inc	Comp,DS	On Campus
17	PrincetonBlue	Comp,DS	On Campus
18	Johnson Controls India	Electrical	Off Campus

Sr. No.	Name of The Recruiter	Program participated	On/Off Campus
19	Sutherland	Comp,DS,E&TC,Civil,Electrical,Mechanical	On Campus
20	IBM	Comp,DS,E&TC,Electrical	Off Campus
21	Eng Consulting Services Pvt Ltd	Civil	On Campus
22	WebLedger	Comp,DS	Off Campus
23	Ambetronics Engineering Pvt Ltd,Mumbai	E&TC,Electrical,Mechanical	On Campus
24	Winsoft	Comp,DS,E&TC,Civil,Mechanical	On Campus
25	Rheal Software	Comp,DS,E&TC,Mechanical	On Campus
26	Wipro Pari	Mechanical	Off Campus
27	Midoffice Applications	Comp,DS	Off Campus
28	FinoFy Technologies	Comp,DS,E&TC,Civil,Electrical,Mechanical	On Campus
29	Artyard Design Studio	Civil	Off Campus
30	eSamyak Software	Comp,DS,E&TC,Civil	On Campus
31	Zitics Pvt Ltd	Comp,DS	On Campus
32	Finulent	Civil,Mechanical	On Campus
33	Green Design	Civil	On Campus
34	S J Construction	Civil	On Campus
35	Hiliks Technologies Ltd.	Civil	On Campus
36	Gofloat Technologies Pvt Ltd	E&TC	Off Campus

Sr. No.	Name of The Recruiter	Program participated	On/Off Campus
37	GARTECH Equipments	Electrical,Mechanical	On Campus
38	DESSAN TEXFAB PVT. LTD.	Electrical,Mechanical	On Campus
39	MSS India Nashik	Mechanical	Off Campus
40	Ampcustech	Comp,DS,E&TC	Off Campus
41	Tech Mahindra	Comp,DS,E&TC	Off Campus
42	PatSeer	Comp,DS,E&TC,Civil,Electrical,Mechanical	On Campus
43	FOX IT	Comp,DS,E&TC,Electrical	On Campus
44	Plastic omnium	Mechanical	On Campus
45	Bayone	Comp,DS,E&TC,Civil,Electrical,Mechanical	On Campus
46	Mitsogo	Comp,DS,E&TC,Electrical,Mechanical	Off Campus
47	SVKM	Comp,DS,E&TC	On Campus
48	Fox Solutions	E&TC,Electrical	On Campus
49	Dataserve	Comp,DS,E&TC	On Campus
50	Indovance	Civil,Mechanical	On Campus
51	Belrise Industries Limited	Mechanical	Off Campus
52	TCS	Comp,DS,E&TC,Civil,Electrical,Mechanical	On Campus
53	EagleByte	Comp,DS,E&TC	On Campus
54	Sankey solutions pvt ltd	Comp,DS,E&TC	On Campus

Sr. No.	Name of The Recruiter	Program participated	On/Off Campus
55	MM Nova Tech	Comp,DS	On Campus
56	Paramatrix	Comp,DS,E&TC	On Campus
57	SJ Contracts	Civil	On Campus
58	Quantum Pvt. Ltd	Comp,DS,E&TC,Civil	Off Campus
59	Suroj Buildcon	Civil	On Campus
60	Endo Par Formulation Pharma	Electrical,Mechanical	On Campus
61	Shree Cement	Mechanical	On Campus
62	IGT Solutions	Comp,DS,E&TC	Off Campus
63	Capgemini	Comp,DS,E&TC,Civil,Electrical,Mechanical	On Campus
64	Dali and Samir-Engineering Pvt Ltd	Mechanical	Off Campus
65	Vertiv Energy	E&TC,Electrical	On Campus
66	Varroc Engineering	E&TC,Electrical	Off Campus
67	Sansera Engineering	E&TC,Electrical	Off Campus
68	Rucha Engineering	E&TC,Electrical	Off Campus
69	Flash Pvt Ltd	E&TC,Electrical	Off Campus
70	Lumax Pvt Ltd	E&TC,Electrical	Off Campus
71	Advik Hi Tech Pvt Ltd	E&TC,Electrical	Off Campus
72	S M Auto	E&TC,Electrical	Off Campus

Sr. No.	Name of The Recruiter	Program participated	On/Off Campus
73	AutoComp Panse Pvt Ltd	E&TC,Electrical	Off Campus
74	NAHARS ENGINEERING INDIA PVT.LTD	E&TC,Electrical	Off Campus
75	L G Balkrishnan and Bros Ltd	Mechanical	Off Campus
76	Wonder Cement	E&TC,	On Campus
77	Mylan	E&TC,Electrical,Mechanical	On Campus
78	Microturners	E&TC,	Off Campus
79	Jeena Logistics	E&TC,Mechanical	Off Campus
80	Syrma SGS Technology Ltd, Ranjangaon	E&TC,	Off Campus
81	Infosys	Comp,DS,E&TC,Civil,Electrical,Mechanical	On Campus
82	Vilas Javdekar Developers	Comp,DS,E&TC,Civil,Electrical,Mechanical	On Campus
83	TOX PRESSOTECHNIK India Pvt Ltd.	Comp,DS,E&TC	Off Campus
84	Zeal Manufacturing	E&TC,Electrical	On Campus
85	Seatrium	E&TC,Electrical	Off Campus

Table No.9.4.9: List of Recruiter Visited 2022-23 Batch

Sr. No.	Name of The Recruiter	Program participated	On/Off Campus
1	Hexaware	Comp,E&TC,Electrical	On Campus
2	Infosys	Comp,E&TC,Civil, Electrical,Mechanical	On Campus
3	Cybage	Comp	On Campus

Sr. No.	Name of The Recruiter	Program participated	On/Off Campus
4	TCS	Comp,E&TC,Civil, Electrical,Mechanical	On Campus
5	Dataserve	Comp,E&TC,Mechanical	On Campus
6	Make My House	Civil,E&TC,Civil,Electrical, Mechanical	On Campus
7	Netwin	Comp,E&TC,Electrical	On Campus
8	360 Realtors	E&TC,Civil,Electrical, Mechanical	On Campus
9	Vilas Javdekar Developers Pune	Civil	On Campus
10	Verzeo	Comp,E&TC,Electrical, Mechanical	On Campus
11	Crave Infotech	Comp,E&TC,Electrical,	On Campus
12	Webline	Comp,E&TC,	On Campus
13	Tech Mahindra	Comp,E&TC,	On Campus
14	Infinity Structural Solution	Civil,	Off Campus
15	Virtusa	Comp,E&TC,Electrical, Mechanical	On Campus
16	Reliance Jio	Comp,E&TC,Electrical,	On Campus
17	Bitwise	Comp,E&TC	On Campus
18	Faurecia	E&TC	Off Campus
19	Rheal Software	Comp,E&TC,Electrical,Mechan ical	On Campus
20	Green Design	Civil	On Campus
21	Atos	Comp,E&TC,Electrical,Mechan ical	On Campus
22	Smyle Housing Development	Civil,	On Campus
23	Webtech	Comp,E&TC,Electrical,Mechan ical	On Campus
24	Mungi Engineers	Electrical,Mechanical	On Campus
25	RecruitCRM	Comp	Off Campus

Sr. No.	Name of The Recruiter	Program participated	On/Off Campus
26	Spinta Solutions	Mechanical	On Campus
27	Clover	Comp,E&TC,Electrical, Mechanical	On Campus
28	Hexaware(PGET)	Comp,E&TC,Electrical, Mechanical	On Campus
29	Fox Soultions	E&TC,Electrical	On Campus
30	Tricera Technology LLP	E&TC,	Off Campus
31	Metaroll	Civil	On Campus
32	ZF India Steering Gear LTD	Mechanical	Off Campus
33	Corbello Construction. Company, Pune	Civil	Off Campus
34	IBM	Comp,E&TC,	Off Campus
35	Veda Engineering Private Limited	Mechanical	On Campus
36	Capgemini	Comp,E&TC,Electrical,Mechanical	On Campus
37	Amiti Software Technologies	Comp	Off Campus
38	Nirma	Electrical,Mechanical	On Campus
39	Hitachi	Mechanical	On Campus
40	DTDC	Comp,E&TC,Civil,Electrical,Mechanical	On Campus
41	Deloitte	Comp,E&TC	Off Campus
42	Gridlogics (Patseer)	Comp	On Campus
43	Finulent Solutions	Civil	On Campus
44	Cognizant	Comp,E&TC	On Campus
45	Ekam Venture - Project Management Consultancy (PMC)	Civil	Off Campus
46	Just Dial	Comp,E&TC,Civil,Electrical,Mechanical	On Campus
47	Bedmutha	Mechanical	Off Campus

Sr. No.	Name of The Recruiter	Program participated	On/Off Campus
48	Torpedo Engineering Solutions	Electrical,	On Campus
49	Praj Industries	Comp	On Campus
50	Sulzer	Mechanical	On Campus
51	360 Edge+	E&TC,Civil,Electrical, Mechanical	On Campus
52	Paramatrix	Comp,E&TC	On Campus
53	Patil Automation	Electrical,Mechanical	On Campus
54	Accolite Digital	Comp	Off Campus
55	Axcess io	Comp	Off Campus
56	GM Mfg services pvt Ltd, Pune	Mechanical	On Campus
57	Emkay casting forging	Mechanical	Off Campus
58	Airbus	Comp	Off Campus
59	KPIT	Comp,E&TC,Electrical,	Off Campus
60	Accenture	Comp,E&TC,Electrical	Off Campus

These initiatives significantly enhance students' communication skills, global mobility, and employability, thereby supporting the institute's vision of holistic student development and contributing effectively to NBA Criterion on Student Support and Skill Development. It has impacted in improved global employability skills, Enhanced readiness for multinational companies and Support for overseas higher studies and international careers.

9.5 Start-up and Entrepreneurship Activities (5) Total Marks 5.00

Institute Marks : 5.00

A. Entrepreneurship cell/ Incubation cell

Students are encouraged to adopt an entrepreneurial mindset through structured start-up and entrepreneurship activities aimed at promoting innovation-based learning and motivating students to transform original ideas into viable businesses. In alignment with national initiatives on innovation and entrepreneurship, these activities help students develop competencies such as problem identification, design thinking, business model development, and self-employment.

To institutionalize these efforts, the institute established the Institution's Innovation Council (IC201811420) in 2018, as per the guidelines of Ministry of Education. The IIC functions as the policy-driven and strategic body responsible for promoting innovation, creativity, intellectual property awareness, and start-up orientation among students and faculty. Working under the framework and guidance of the IIC, the Entrepreneurship Cell (E-Cell) acts as the operational and implementation arm of entrepreneurship initiatives at the institute. (Refer Figure 9.5.1)

Inspired by best practices of premier institutions such as Indian Institute of Technology Bombay, the E-Cell functions with the motto "Creating Job Creators." It comprises faculty coordinator and active student members who plan, organize, and execute entrepreneurship-related activities such as workshops, idea competitions, mentoring sessions, and start-up awareness programs.

Figure 9.5.1: IIC Establishment Certificate

The Institute Innovation Council (IIC) and Entrepreneurship Cell (E-Cell) work in a coordinated manner to promote innovation and entrepreneurship among students. While the IIC provides strategic direction and policy-level support aligned with national initiatives, the E-Cell ensures effective execution and active student participation. This integrated approach has strengthened the institute's innovation ecosystem and fostered a sustainable start-up culture on campus.

Key Initiatives and Support Mechanism

- IIC provides strategic guidance, national alignment, and policy support for innovation activities.
- E-Cell facilitates grassroots-level execution and encourages active student engagement.
- Dedicated incubation environment supports brainstorming, mentorship, and prototype development.
- Access to computers, internet, software tools, and departmental laboratories for idea validation.
- Continuous mentoring by faculty members and industry experts on technical and entrepreneurial aspects.
- Student participation encouraged in Hackathons, business plan competitions, start-up challenges, and national innovation programs.
- Training and awareness programs on Intellectual Property Rights (IPR), patent filing, and funding opportunities.

- Regular organization of entrepreneurship events such as expert talks, Hackathons, boot camps, YUKIT innovation challenges, and business plan competitions.
- Active student involvement and measurable outcomes demonstrate the effectiveness of innovation and start-up initiatives.

B. Activities Conducted

The Table 9.5.1 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 9.5.1: Details of Entrepreneurship and Innovation Activities Conducted

Sr. No	Resource Person & Organization	Name of Activity	Date	No. of Student	Outcome/ Output
1	Mr.Shaurya Gaikwad Founder & CEO – LEAP & EnterpreneX, Advisory Council Member – HBR	My Story / Building Before Graduation: AI, Startups & Practical Entrepreneurship	22–24 Nov 2025	2000+	Large-scale impact through experiential learning; strengthened startup execution skills and innovation mindset.
2	Mr. Pankaj Kasar AI–ML Engineer, Griffyn Robotech Pvt. Ltd., Pune	Workshop on AI and I4.0 Tools for Innovators and Entrepreneurs	15 Nov 2025	85	Hands-on exposure to AI and Industry 4.0 tools; enhanced technical and entrepreneurial competencies.
3	Prof. Jayesh Badane, Gurumantra Vocational Training Institute, Dhule	My Story / Motivational Expert Session by Successful Innovators & Entrepreneurs	6 Nov 2025	50	Inspired students through entrepreneurial experiences; increased motivation towards startups.
4	Dr. Hemraj Kumavat, IPR Expert, R. C. Patel Institute of Technology, Shirpur	National Level Webinar on IPR Awareness: From Innovation to Patent Filing	29 Aug 2025	800+	Large-scale awareness on patent filing process; motivated students and faculty to pursue IP protection.

Sr. No	Resource Person & Organization	Name of Activity	Date	No. of Student	Outcome/ Output
5	Prof. Dr. Sanjay L. Kurkute, Founder & CEO – PRISM Technology	Expert Session on “Innovation and Start-up Ecosystem Enablers”	26 Aug 2025	185	Improved understanding of innovation enablers, incubation, funding, and ecosystem support mechanisms.
6	Dr. Santosh Rane, President IIC-SPCE, Mumbai	National-level Webinar on “Lean Start Up Ecosystem”	21 Aug 2025	489	Exposure to lean startup principles and scalable business models; strengthened entrepreneurial thinking.
7	Mr. Jai Veer, Assistant Controller of Patents & Designs, DPIIT (MIC Driven)	Commercialization of Patents & Government Support Systems	26 Apr 2025	100+	Improved awareness of government schemes and patent commercialization mechanisms.
8	Dr. Dara Ajay, IIT Madras (MIC Driven)	Patent to Product	26 Apr 2025	100+	Understanding of converting patents into market-ready products and commercialization strategies.
9	Dr. Sripathi Rao Kulkarni, CSIR Innovation Complex – Mumbai (MIC Driven)	Significance of IP Protection and Commercialization	25 Apr 2025	100+	Awareness on IP commercialization pathways and industry–academia collaboration.
10	Dr. Rahul Taneja, Haryana State Council for Science & Technology (MIC Driven)	Mark the Spot: Trademarks Talk	24 Apr 2025	100+	Knowledge of trademark registration and branding protection.

Sr. No	Resource Person & Organization	Name of Activity	Date	No. of Student	Outcome/ Output
11	Dr. Hemant Khosla, DPIIT (MIC Driven)	Copyright Protection Mechanisms & Case Studies	23 Apr 2025	100+	Clarity on copyright enforcement and legal frameworks.
12	Ms. Anooja Padhee, K&S Partners (MIC Driven)	Copy That! Copyrights Uncovered	23 Apr 2025	100+	Awareness of copyright ownership and protection mechanisms.
13	Dr. Chakravarthy, Mahindra University (MIC Driven)	Importance of Design Protection & Case Studies	22 Apr 2025	100+	Improved understanding of design protection using real-world cases.
14	Prof. Gauri Gargate, IIT Kharagpur (MIC Driven)	Discover More with Design Registrations	22 Apr 2025	100+	Knowledge of design registration procedures and benefits.
15	Prof. (Dr.) Unnat P. Pandit, CGPDTM, DPIIT (MIC Driven)	IP Awareness & Innovation National Development	21 Apr 2025	100+	Understanding of IP's role in national innovation and development.
16	Dr. Sacha Wunsch-Vincent, WIPO (MIC Driven)	Inauguration of IP UTSAV & World Creativity and Innovation Day	21 Apr 2025	100+	Promotion of innovation culture and IP awareness.
17	Dr. Jeeva B, Kumaraguru College of Technology	Protecting IPR & IP Management for Start-ups	20 Mar 2025	70	Understanding of IPR management and TRL concepts.
18	Mr. Subham Sughandi, Founder – Marketing Mantra	Expert Lecture on National Startup Day	16 Jan 2025	80	Exposure to startup branding and marketing strategies.

Sr. No	Resource Person & Organization	Name of Activity	Date	No. of Student	Outcome/ Output
19	Mr. Dipen Sahu, Innovation Officer, MoE Cell (MIC), Government of India	Orientation & Refresher Session on IIC Objectives & Structure	5 Aug 2024	300+	Improved understanding of IIC governance and operations.
20	Mr. Dipen Sahu, Innovation Officer, MoE Cell (MIC), Government of India	YUKTI Innovation & IPR Repository (YIIR)	2 Aug 2024	300+	Capability to manage and track innovations via YUKTI portal.
21	Mr. Dipen Sahu, Innovation Officer, MoE Cell (MIC), Government of India	Strengthening IIC Linkages with ATLs & SICs	31 Jul 2024	200+	Enhanced collaboration with schools and mentorship framework.
22	Mr. Dipen Sahu, Innovation Officer, MoE Cell (MIC),	Innovation Ambassadors Framework & Reward	29 Jul 2024	200+	Faculty and students trained as Innovation Ambassadors.
23	Dr. Yogesh Fulpagare, Cooler Master, Taiwan	Process of Innovation Development	24 Feb 2024	200	Understanding of structured innovation development processes.
24	Mr. Arjun Deshpande, Founder & CEO, Generic Aadhaar	My Story – Motivational Session	21 Jan 2024	150	Motivation through real entrepreneurial journey.
25	Mr. Arjun Malhotra, Co-Founder HCL Group	Innovation & Entrepreneurship Outreach Program	22 Dec 2023	300+	Exposure to entrepreneurship opportunities beyond campus.
26	Hon’ble Prime Minister Shri Narendra Modi	Launch of “Viksit Bharat@2047: Voice of Youth”	11 Dec 2023	500+	National-level awareness on innovation-led nation building.

C. Student Start-ups: Evidence of Innovation-Driven Outcomes

Structured innovation activities, supported by continuous mentoring from trained faculty and Innovation Ambassadors, enabled students to acquire practical entrepreneurial skills, resulting in registered student start-ups, active founders, and award-winning participation at multiple levels—evidencing innovation-driven outcomes.

Table 9.5.2: Details of Student Start-ups and Founders

Sr. No	Name of Founder	Start-Up Name	Registration No.
1	PRATHAMESH MALI	STEMSAGE	ACG-9397
2	OM PATIL	DRONI CULTURE SYSTEMS PVT. LTD	AAY-3425
3	RAHUL BAVISKAR	SWADESHI HANDICRAFTS PVT. LTD	U51310MH2021PTC358417
4	TEJAS PAWAR	MWS SOLUTION	UDYAM-MH09-0015846
5	ROHIT LOHAR	VIVA-TECHNOLOGY DRIVEN SPONSOR ENGAGEMENT	ACP-1208
6	GIRASE TEJAS	ALLINO	Incubated at DBTU, Lonere

Fig 9.5.3: Glimpse of students Achievements

Motivated by this exposure and mentoring support, some students further initiated their own start-up ventures, translating innovative ideas into entrepreneurial outcomes. These achievements reflect the effectiveness of the institute's entrepreneurship initiatives in nurturing innovation, self-employment, and job creation among students.

Faculty members have been trained as Innovation Ambassadors to strengthen the institutional innovation ecosystem. Currently, 09 faculty members have completed Innovation Ambassador training, and 03 have successfully completed Advanced Innovation Ambassador Training under the Institution's Innovation Council (IIC). These trained faculty members play a pivotal role in providing structured mentoring, coaching, leadership, and strategic guidance for innovation, start-up, and entrepreneurship activities conducted through the IIC and E-Cell, ensuring continuity, quality, and measurable impact in entrepreneurial initiatives.

Table 9.5.3: Students Achievements

Sr. No.	AY	Name of Competition	Level	Organizing Agency	Achievement / Position	Outcome
1	25-26	YUKTI Innovation Challenge	National	Ministry of Education	Semi-finalist	Prototype
2	24-25	Youth Ideathon	National	SBI	Top 100 Selection	Idea validation & mentoring
3	24-25	Smart India Hackathon	National	Govt.	Finalist	Prototype
4	24-25	Eureka	National	IIT Bombay	Shortlisted for Final Round	Investor pitching
5	25-26	ISF Junicorn Challenge	Inter National	ISF	Selected for Dubai Round	Global exposure
6	24-25	Maharashtra State Innovation Challenge	State	Govt. of Maharashtra	Winner ₹1,00,000 Prize	Funding support

- More than 2,000 students have participated in 26 innovation and entrepreneurship programs organized by the institute.
- Seven student start-ups have been registered or are currently under incubation as a direct outcome of these initiatives.
- Two student teams received ₹1,000,000 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 2018 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 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)

Total Marks 25.00

9.6.1 Availability of the Institutional Strategic Plan and its Effective Implementation and Monitoring (10)

Institute Marks : 10.00

A. Institute Strategic Plan (2020-2030)

A 360 degree perspective plan is developed by an IQAC which considers important factors i.e. structure, mechanisms and stake holders within the system and their capacity to act, their creativity, the collaboration between them, their confidence, and the coherence of the action with other initiatives (Refer Figure 9.6.1.1).

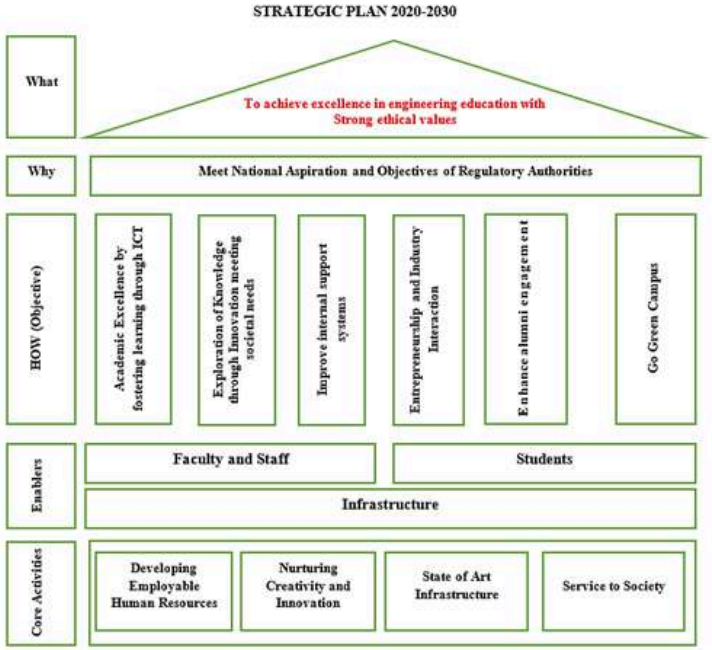


Figure 9.6.1.1: Institutional Strategic Planning Framework (2020–2030)

Goal 1: Academic Excellence by fostering learning through ICT

Values-based Education creates a strong learning environment that enhances academic achievement and develops students social and relationship skills that last throughout their lives. The positive outcomes are achieved through teaching-learning methods blended with ethical values and cross domain research in cutting edge technologies. This leads to the all-round personality development of the students. It also provides social capacity to students, equipping them with social and relationship skills, intelligence and attitude to succeed at every aspect of their lives. A high quality of academic excellence can provide value-added experience for the students.

Table No.9.6.1.1: Strategic Objectives Aligned with Institutional Development

Sr. No	Strategic Plan
1	Academic Excellence by fostering learning through ICT

Sr. No	Strategic Plan
2	Exploration of Knowledge through Innovation meeting societal needs
3	Improve Internal Support Systems
4	Entrepreneurship and Industry Interaction
5	Enhance alumni engagement
6	Go Green Campus

Strategies:

Curriculum Enrichment and Value Addition: Being an affiliating College the HEI has insignificant role in curriculum designing and development. However measures have been taken for Industrial certificate Course, Value added courses and activities sensitizing students to cross-cutting issues such as gender, environment and sustainability, human values and professional ethics, development of creative and divergent competencies.

Table No.9.6.1.2: Key Result Areas and Performance Measures for Academic Quality Enhancement

Key Result Areas	Measures
Curriculum Enrichment	Industrial Certificate Courses
	Courses focusing on Skill development and Employability
	Value Added Courses
Learner Centric Curriculum delivery	Academic Plan as per OBE & Academic calendar
	Quality projects
	ICT utilization / Pedagogy Tools
	Online Self learning Resources
	Industry exposure through Internships
	Workshops/FDPs on Pedagogy/Technology
	Learning Management System
Smart Classrooms	Multimedia and support equipment
	E-Learning Facilities.

Key Result Areas	Measures
Laboratories	Periodic maintenance and up gradation
	Virtual Laboratory
	Additional Design and open ended experiments

Pedagogy and Delivery Modes: The day to day classroom delivery is through modern pedagogy evenly balancing the traditional methodology. The classrooms are equipped with the required infrastructure to facilitate the new modes of delivery. The faculty are trained on the ICT methodologies and continuous apprise of the same is provided through conduct and participation in faculty development programs, workshops and seminars. An exclusive teaching/ learning center is in place to support faculty teaching, student learning and communication. E- Learning / online learning will be encouraged in addition to the traditional class room teaching-learning practice. Faculties and students are encouraged for MOOC- SWAYAM-NPTEL Certification.

Goal 2: Exploration of Knowledge through Innovation meeting societal needs

The Institute addresses and enhances students' imagination, initiative and practical skills and equips them to innovate and confidently cross the threshold of challenges. Added to the academic activity additional open ended experiments, Micro/ Mini Projects, Industrial based projects, Product based projects are encouraged.

Table No.9.6.1.3: Strategic Initiatives for Research Publications, IPR and Collaboration

Key Result Areas	Measures
Research Publications	Numbers of papers published in reputed National and international journals
	Numbers of papers presented in reputed National and international conferences
	Faculty as reviewers for reputed journals
Frontiers of knowledge	Operational Centers of Excellence
	Conferences/seminars/workshops conducted.
	MOUs with higher learning institutes in India & broad.
Patents and copyrights	IPR Workshops
	Number of Indian Patents
	Books and Monograms, Copy rights

The innovative idea of students are transformed into reality by:

- Project Based Learning from micro to macro levels involving processes and products.
- Enhancing collaborative projects with academic institutes, industry.

Goal 3: Improve internal support systems

The Institute has installed a modern and comprehensive Enterprise Resource Planning (ERP) system after streamlining all processes with the aim of improving efficiency and transparency of operations. The number of technical staff in the departments will be increased, including senior staff with higher qualifications. The Institute will provide additional administrative staff to departments to manage routine work such as, arranging admissions and

examinations, maintenance, recording minutes of meetings, as well as specialized activities such as publishing newsletters, maintaining website and engaging with industry and alumni.

The Institute will enhance the purchase section to provide greater support for facilitating purchases in a timely manner. A conference/FDP/STTP course support cell will be set up to help arrange conferences/ FDPs/STTPs. The Institute will provide adequate staff and online systems to enable maintenance of the estate and buildings at a higher standard.

Action points

- Simplify systems and processes with a modern ERP system.
- Appoint and empower departmental managers to support and co-ordinate purchase, maintenance and administration in the Department.
- Conduct annual satisfaction survey.
- Service orientation and training for staff, service response and online complaint systems.
- Establish improved faculty orientation and mentorship Programme for new faculty members.
- Create a conference organizing support cell as a part of CEP.

Metrics/Targets

- Reduction in average processing times
- Continuous improvement on satisfaction survey scores
- Tracking and reduction in complaint redressal times

Goal 4: Entrepreneurship and Industry Interaction

The Institute aims to create an ecosystem for deeper collaboration with industry in several modes, including consultancy, sponsored research projects, technology transfer and continuing education. Measures are taken to transform classroom learning to a project based experience. The idea to innovate is encouraged through the Innovation Competition and the best idea is rewarded.

Infrastructure is provided to implant the ideas. Young technocrats get opportunities to exploit their full potential by setting up their own ventures thus becoming "job generators" rather than "job seekers". Strategy to provide a platform to business Start- ups to develop the innovative ideas into commercially viable products.

Training and mentoring to the students is given through Entrepreneurship Development Cell to realize the idea into application/ product at institute. Initial awareness on entrepreneurship is facilitated by conducting awareness camps, guest lectures, seminars, workshops, and skill development programs.

The Industry Institute Interaction Cell proactively builds partnerships with industry in areas of strengths of the Institute. Collaboration with the industry is built through well-structured student internships and appointment of industry professionals as Visiting Faculty. A significant quantum of research will originate from problems identified as a result of the faculty's engagement with industry.

Table No.9.6.1.4: Strategic Measures for Entrepreneurship and Industry Engagement

Key Result Areas	Measures
Industry Collaboration	Industry Supported Labs
	Student Internships
	Knowledge exchange through seminars and workshops
	Faculty as Corporate Trainer
	Consultancy and Testing to industry
	Sponsored and funded collaborative research
	MOUs with Premier industries

Key Result Areas	Measures
Innovation & Entrepreneurship	Exclusive incubation facility
	Proactive participation of Students and Faculty
	Focus on Product development
Resources & Infrastructure	Exclusive facility for R&D
	Licensed Technologies

B. Approval & Implementation

The objective is to ensure the quality and imbibe the culture of excellence and focus on the time-bound goals set for academic, administrative, research and development activities. The entire process is based on participative approach wherein the faculty members, and other stakeholders are involved in the development of plans and its efficient execution. The summary is as follows

The Strategic Plan clearly focuses on academic excellence, research and innovation, industry engagement, ethical values, faculty and staff development, student development, and transparent governance, with defined timelines, responsibilities, and measurable outcomes. The availability of the Institute's strategic intent, priority areas, and quality assurance mechanisms is reflected through publicly accessible IQAC documentation and quality assurance reports, which function as institutional strategic reference documents and demonstrate openness to stakeholders.

Web evidence:

- IQAC & academic planning framework:

https://www.rcpit.ac.in/iqac-and-academics (https://www.rcpit.ac.in/iqac-and-academics)

- AQAR 2022–23 (strategic focus, quality initiatives, e-governance, monitoring): https://www.rcpit.ac.in/files/AQAR-2022-23.pdf (https://www.rcpit.ac.in/files/AQAR-2022-23.pdf)

The Institutional Strategic Plan and IDP were approved by the competent authority, namely the Governing Body, after due deliberations. The governance framework supporting strategic approval and oversight comprises the Governing Body, Academic Council, and Finance Committee, ensuring balanced consideration of policy, academic planning, and financial feasibility. The constitution, roles, and statutory nature of these bodies are documented and disclosed through mandatory statutory disclosures available on the Institute website, reinforcing transparency and regulatory compliance.

Web evidence:

- Mandatory Disclosure (Governing Body, Finance Committee, Academic Council, governance structure): https://www.rcpit.ac.in/uploads/download/1684477044.pdf (https://www.rcpit.ac.in/uploads/download/1684477044.pdf)
- IQAC & Academic Committees page (academic governance linkage): https://www.rcpit.ac.in/iqac-and-academics-committee (https://www.rcpit.ac.in/iqac-and-academics-committee)

The implementation of the Strategic Plan and IDP is carried out through department-wise annual action plans aligned with institutional strategic objectives. These action plans translate long-term goals into short-term and mid-term initiatives covering curriculum delivery, outcome attainment, research activities, industry interaction, faculty development, student support systems, and governance processes. Alumni actively contribute to implementation through mentoring, curriculum feedback, internships, placements, and professional guidance, facilitated via the Institute's dedicated alumni portal.

Web evidence:

- Alumni engagement and participation platform: https://alumni.rcpit.ac.in (https://alumni.rcpit.ac.in/)

The Internal Quality Assurance Cell (IQAC) through periodic reviews, academic and administrative audits, stakeholder feedback analysis, and preparation of Action

Taken Reports (ATRs) systematically carry out Monitoring and evaluation of the Strategic Plan and IDP. The progress of strategic initiatives, corrective actions, and quality improvement outcomes are documented through Annual Quality Assurance Reports (AQARs) and placed before the Governing Body for review, ensuring accountability, transparency, and continuous improvement. Evidence of continuity and incremental improvement is available through successive AQARs published on the Institute website.

Web evidence:

- AQAR 2022–23 (implementation, review)

https://www.rcpit.ac.in/files/AQAR-2022-23.pdf (https://www.rcpit.ac.in/files/AQAR-2022-23.pdf)

- AQAR 2021–22 (continuity and monitoring incremental improvement outcomes)

https://www.rcpit.ac.in/files/AQAR-2021-22.pdf (https://www.rcpit.ac.in/files/AQAR-2021-22.pdf)

Thus, the Institutional Strategic Plan and IDP of RCPIT are publicly available, formally approved by the competent authority, systematically implemented through departmental action plans, and continuously monitored through IQAC-led mechanisms, with key evidence transparently disseminated through the Institute website, alumni portal, and official communication platforms.

9.6.2 Governing Body, Administrative Setup, Functions of Various Bodies, Service Rules, Recruitment procedures and Promotion Policies (10) Institute Marks : 10.00

A. Organizational Set-up: Governing Body, Administrative Setup, Functions of Various Bodies

R. C. Patel Institute of Technology has established a clearly defined, participative, and autonomous governance and administrative framework that ensures academic autonomy, transparent administration, financial accountability, and holistic institutional development. The governance system is structured with distinct statutory, executive, academic, administrative, developmental, and functional layers, each with clearly defined roles, approval mechanisms, and documented processes.

At the apex, the Governing Body (GB) functions as the highest statutory authority responsible for policy formulation, strategic direction, institutional oversight, and regulatory compliance. The Academic Council (AC) operates as the apex academic body, ensuring academic autonomy through approval of curricula, academic regulations, assessment frameworks, and Outcome Based Education (OBE) implementation. The Finance Committee (FC) ensures financial oversight, budget approval, and prudent resource allocation. The constitution, roles, and approval of these statutory bodies are disclosed through mandatory statutory disclosures available on the Institute website.

Under the Academic Council, Program-wise Boards of Studies (BoS) function as the primary academic bodies responsible for curriculum design, revision, and academic content development. The recommendations of the BoS are placed before the Academic Council for approval, ensuring a bottom-up, academically rigorous, and industry-relevant curriculum development process, which is a key requirement for autonomous institutions. The Director serves as the chief executive authority responsible for implementation of decisions of statutory bodies and overall institutional administration, supported by the Deputy Director. Execution of academic and administrative functions is carried out through three clearly differentiated yet integrated structures (Refer Figure 9.6.2.1)

- Academic & Assessment Structure, comprising Heads of Departments (HODs) and the Controller of Examinations (COE). The COE ensures transparent, fair, and independent conduct of examinations and evaluations, functioning academically under the Academic Council and administratively reporting to the Director, thereby maintaining separation between teaching and evaluation.
- The functioning of these structures is supported by statutory and functional committees, including the Internal Quality Assurance Cell (IQAC), Purchase Committee (for transparent and need-based acquisition of latest technologies), Recruitment Committee (to attract and select a diverse pool of talent), Student and Employee Grievance Redressal Committees, Anti-Ragging Committee, Internal Complaints Committee (Women Harassment Prevention), SC/ST Cell, Disciplinary Committee, Sports and Cultural Committees, NSS, Student Clubs. All committees function with approved composition, defined roles, documented meeting notices, agendas, minutes, and Action Taken Reports (ATRs).

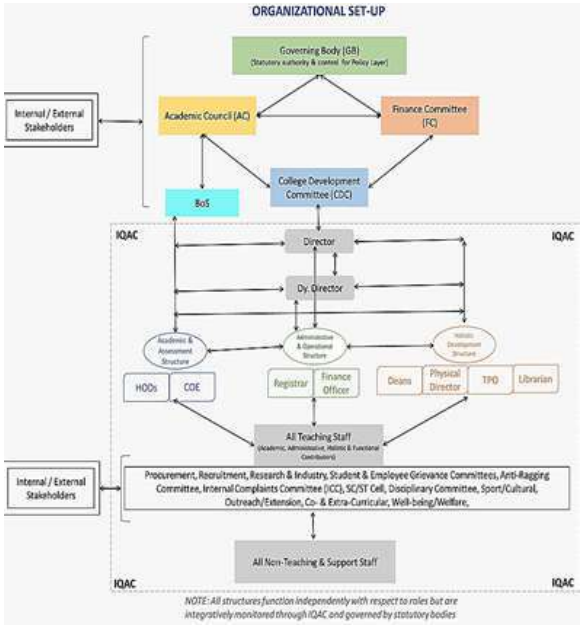


Figure 9.6.2.1: Governance, Leadership and Institutional Support Structure of the Institution

- All teaching and non-teaching staff contribute to institutional functioning through these structures and committees, forming an integrated institutional platform. The entire governance and administrative framework is independently governed by statutory bodies and integratively monitored through IQAC, ensuring transparency, accountability, and continuous quality improvement. The Institute follows documented service rules, recruitment procedures, promotion policies, and procurement norms, which are published through mandatory disclosures on the Institute website.
- Administrative & Operational Structure, comprising the Registrar and Finance Officer, responsible for implementation of service rules, recruitment and promotion procedures, statutory compliance, administrative coordination, financial administration, procurement execution, and audit readiness.
- Holistic Development Structure, comprising Deans, Physical Director, Training &Placement Officer (TPO), and Librarian, focusing on research and innovation, faculty development, student development, employability enhancement, leadership, wellness, sports, cultural activities, learning resources, outreach, and extension activities.

B. Service Rules

R. C. Patel Institute of Technology follows clearly documented service rules for teaching and non-teaching staff, defining service conditions related to appointment, probation, confirmation, workload, leave, performance expectations, disciplinary procedures, grievance handling, and separation.

Web evidence: Mandatory Disclosure:

https://www.rcpit.ac.in/uploads/download/1684477044.pdf (https://www.rcpit.ac.in/uploads/download/1684477044.pdf)

Service Rule:

https://www.rcpit.ac.in/academics/servicerules (https://www.rcpit.ac.in/academics/servicerules)

These service rules are aligned with AICTE norms, State Govt. norms, affiliating university guidelines, and management policies, and are implemented through the Registrar under the supervision of the Director. The service rules and related governance provisions are publicly disclosed through the Institute’s Mandatory Disclosure, ensuring transparency and stakeholder awareness.

C. Recruitment Procedures

Recruitment at RCPIT is carried out through a transparent, merit-based, and committee-driven process to attract a diverse and competent pool of academic and administrative talent. Vacancies are widely advertised through multiple channels, including print media, the Institute website, and official professional platforms such as LinkedIn, Facebook, Instagram ensuring broad visibility and equal opportunity. Reservation for the posts is applicable as per the applicability to Minority Institutions and is clearly stated in each published advertisement.

The Institute follows flexible recruitment modalities, including online and offline interviews, as well as off-campus interviews and selection processes wherever appropriate, to widen outreach and attract quality candidates. Applications received are scrutinized as per eligibility norms, and shortlisted candidates are invited for structured selection processes.

The Selection Committee is constituted in accordance with institutional and regulatory norms and includes:

- Members of the Governing Body, Director and Deputy Director,
- Concerned Head of the Department (HOD), and
- Two subject experts, including internal and external experts from university affiliated colleges.

The University faculty-selection along with approvals of faculty is carried out as per the guidelines issued by the University. This multi-member committee structure ensures fair evaluation, academic rigor, transparency, and objectivity in selection decisions. The competent authority before appointment approves recommendations of the Selection Committee.

Web evidence:

Mandatory Disclosure (Recruitment procedures and selection framework): https://www.rcpit.ac.in/uploads/download/1684477044.pdf (https://www.rcpit.ac.in/uploads/download/1684477044.pdf)

Official communication and outreach platforms:

https://www.rcpit.ac.in/careers,https://www.linkedin.com/school/shirpurrcpit/ (https://www.rcpit.ac.in/careers,https:/www.linkedin.com/school/shirpurrcpit/)

D. Promotion Policies

The Institute follows clearly defined, transparent, and performance-oriented promotion policies for faculty and staff, aimed at ensuring career progression, professional motivation, and retention of talent. Faculty promotions are governed through a structured performance-based appraisal system, wherein faculty members submit an API-based self-appraisal report documenting their contributions in teaching–learning processes, research and publications, professional development, institutional responsibilities, and outreach activities.

Promotions and Career Advancement Scheme (CAS) decisions are processed in accordance with AICTE guidelines, taking into consideration API scores, prescribed eligibility criteria, academic experience, and overall performance. A Performance Evaluation Committee comprising internal and external academic experts, ensuring objectivity and academic rigor, evaluates the appraisal and promotion process. Recommendations of the committee are placed before the competent authority for approval, thereby maintaining fairness, transparency, and compliance with regulatory norms.

To further strengthen transparency and accountability, faculty and staff are provided with an opportunity to seek clarification or raise grievances related to appraisal or promotion decisions through the institutional Grievance Redressal Committee, ensuring due process and equitable resolution.

Web evidence:

Mandatory Disclosure (Promotion policies, appraisal framework, CAS norms): https://www.rcpit.ac.in/uploads/download/1684477044.pdf (https://www.rcpit.ac.in/uploads/download/1684477044.pdf)

Career Advancement Scheme (CAS) details:

https://www.rcpit.ac.in/academics/CAS (https://www.rcpit.ac.in/academics/CAS)

9.6.3 Transparency (5)

Institute Marks : 5.00

R. C. Patel Institute of Technology, Shirpur, 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.

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 as well as parents, 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 and parents 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 counselling and orientation programs for prospective students prior to admission, offering clarity on programs, career pathways, employability prospects, and academic expectations. Following admission, 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, and promotion/Career Advancement Scheme (CAS) policies. Vacancy notifications are disseminated through print media, the Institute website, and official professional platforms, ensuring equal opportunity and wide outreach.

The Institute has adopted HR e-governance practices, including online attendance systems, online leave application and sanctioning mechanisms, and digital service records, ensuring traceability, accountability, and timely administrative processes. Promotion decisions are governed through API-based self-appraisal systems and AICTE guidelines, with committee based evaluation and approval by competent authorities. These digital and policy-driven mechanisms reinforce fairness and transparency in faculty and staff management.

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 / Optimized Buying (OB) 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 OB 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 as well as parents, 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

RCPIT actively disseminates institutional information through multiple official platforms, including the Institute website, ERP portals, alumni portal, and social media channels such as LinkedIn, Facebook, and Instagram. In addition, official What Sapp-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, counselling sessions, website updates, and social media outreach. Students and parents actively use ERP logins for academic and financial information, while faculty and staff engage with HR e-governance systems. Alumni, parents, and recruiters remain informed through digital platforms, and feedback collected through IQAC 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.

9.7 Budget Allocation, Utilization, and Public Accounting at Institute Level (12) Total Marks 12.00

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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

Total Income 411022622				Actual expenditure(till…):	Total No. Of Students	Expenditure per student
Fee	Govt.	Grants	Other sources(specify)			
411022622	0	0		265387223.44	3126	84896.74

Table 2 - CFYm1

Total Income 347559054.79				Actual expenditure(till…):	Total No. Of Students	Expenditure per student
Fee	Govt.	Grants	Other sources(specify)			
342049550.00	157850.00	5351654.79	0	347559054.79	2819	123291.61

Table 3 - CFYm2

Total Income 335917998.69				Actual expenditure(till…):	Total No. Of Students	Expenditure per student
Fee	Govt.	Grants	Other sources(specify)			
266009533.00	203955.00	69704510.69	0	335917998.69	2351	142883.03

Table 4 - CFYm3

Total Income 298391116.17				Actual expenditure(till…):	Total No. Of Students	Expenditure per student
Fee	Govt.	Grants	Other sources(specify)			
264594318.00	41828.00	33754970.17	0	298391116.17	2430	122794.70

Items	Budgeted in	Actual Expenses in till	Budgeted in	Actual Expenses in till	Budgeted in	Actual Expenses in till	Budgeted in	Actual Expenses in till
Infrastructure Built-Up	561850(	4003147	155000(	141846(	195000(	1795770	266000(	258036(
Library	301000(	2144543	390000	365810	475000	428611	600000	562977
Laboratory equipment	193130(	1376081	180000(	163347(	400000(	3740419	203000(	1942207
Teaching and non-teaching stal	200133(	1485989	260500(	258021(	244000(	2399152	208300(	2062747
Outreach Programs	150500(	1072271	100000	93515	250000	236479	44000	41828
R&D	263400(	1876475	260000	220720	200000	190765	44000	41417.4
Training, Placement and Indust	903000(	6433629	750000(	714241(	720000(	6839043	323000(	303558(
SDGs	653360(	4557154	620000(	5892102	700000(	6373556	764000(	706926(
Entrepreneurship	169300(	120630(	150000	139055	175000	168410	142000	133549
Others, specify	165840(	4691188	150000(	720000	700000(	2705775	400000(	409236(
Total	**375423000**	**265387223.11**	**379400000**	**356143592.6**	**352800000**	**335917998.66**	**133920000**	**126973714.36**

9.8 Program Specific Budget Allocation, Utilization (8) Total Marks 8.00

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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

Total Budget 26421324		Actual expenditure (till…): 18677283.78		Total No. Of Students 220
Demanded	Actual Allocated	Actual Expenditure	% Spent	Expenditure per student
27621324	26421324	18677283.78	67.62	84896.74

Table 2 :: CFYm1

Total Budget 28936148		Actual expenditure (till…): 27162423.69		Total No. Of Students 215
Demanded	Actual Allocated	Actual Expenditure	% Spent	Expenditure per student
31436148	28936148	27162423.69	86.41	126336.85

Table 3 :: CFYm2

Total Budget 31813526		Actual expenditure (till…): 30291201.92		Total No. Of Students 212
Demanded	Actual Allocated	Actual Expenditure	% Spent	Expenditure per student
34313526	31813526	30291201.92	88.28	142883.03

Table 4 :: CFYm3

Total Budget 31934660		Actual expenditure (till…): 30330290.41		Total No. Of Students 247
Demanded	Actual Allocated	Actual Expenditure	% Spent	Expenditure per student
34434660	31934660	30330290.41	88.08	122794.70

Items	**Budgeted in**	**Actual Expenses in till**	**Budgeted in**	**Actual Expenses in till**	**Budgeted in**	**Actual Expenses in till**	**Budgeted in**	**Actual Expenses in till**
Laboratory equipment	135920(	968451.7	1372827	1245824	360697.5	337290.(	206341.5	197417.8
Software	175943.7	164318.7	26693.8(	26378.4:	450871.5	419305.(	508230.4	415973.2
SDGs	4598182	3207210	4728627	4493799	6312207	5747315	7765761	7185635
Support for faculty developmen	35188.7.	33781.19	61014.5.	54913.09	72139.52	64925.5(	50823.0:	48790.12

R & D	185374.:	132061.(	19829.7:	16833.9	18034.8(	17202.1:	4472.43	4209.92
Industrial Training, Industry exp	635508.(	452782.(	572011.:	544738.(	649255.(	616706.:	328316.:	308555.:
Miscellaneous Expenses*	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**6989398.60**	**4958605.71**	**6781003.89**	**6382487.73**	**7863207.16**	**7202745.08**	**8863945.68**	**8160582.42**

9.9 Quality of Learning Resources (Hard/Soft) (5) Total Marks 5.00

Institute Marks : 5.00

A. Availability of Learning Resources

LIBMAN - Library Management System: RCPIT Library uses the LIBMAN integrated 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)

OPAC: https://libcloud.mastersofterp.in/OPAC_V3/ (https://libcloud.mastersofterp.in/OPAC_V3/)

LIBMAN OPAC (Online Public Access Catalog) is a digital interface for the LIBMAN library management system, allowing users to easily search a librarys collection by title, author, subject, keywords, etc., find availability and location, and even check personal account details like borrowed items, all from a web-based or mobile-friendly portal. It acts as an online library card catalog, making resources accessible remotely and improving user convenience with features like consolidated data and detailed book info.

Table 9.9.1: Library Resources and Information Access Facilities

Sr. No.	Particulars	Details
1	Program Name	Engineering & Technology
2	Titles	Hardcopies : 5766, E-Copies: 6620, Total Copies :12386
3	Volumes	Hardcopies : 38609, E-Copies: 620, Total Copies : 45229
4	Name of Journals	UG Journals : 66
	International Journals	International Journals :11
	National Journals	National Journals :55
5	E-Resources	DELNET: E-Journals – 37,847; E-Books – 1,683 N-List: E-Journals – 3,537; E-Books – 31 lakh NDL: E-Journals – 3 lakh; E-Books – 7 lakh Springer E-Journals- 514
6	DBATU's E-consortium	Available
7	Library Facilities	09:00am to 08:00pm
8	Investment till the date	1,77,12,534/-
9	Budget of current year	18,71,000/-

Sr. No.	Particulars	Details
10	Area (In Sqm.)	801 sq. m.
11	Reading Room Capacity	150
12	Reprographic Facility	Available
13	News Paper	English- 2 Marathi- 6
14	Library Networking	Available
15	No. of Multimedia PCs	10
16	Type of Access	Open Access
17	Library Management Software	LIBMAN (Master-soft)
18	Bar-code or RF tab book Handling : Available	
19	e-journals	DELNET :1103, N-List :6069, NDL : 7 lakh
20	DELNET : 10/05/2025 to 09/05/2026 (Rs. 13570/-) N-List (INFLIBNET): Till Process NDL : 29/03/2025 to 29/03/2026 (Free)	

M-OPAC: 100% assurance for import of other library software data into LIB-MAN. Mark standard data import/export. Book data fetching from ISBN site and Google API saves data entry time. Supports EBook uploading & reading. Follows all library latest standards such as Marc 21, library congress standards, AACR2. Reports / data export to word, excel, PDF, text. Fully secured & maintenance free. Fully documented user manual. Best backup and recovery. Reports on laser/inkjet printers. Lib-Man is embedded with multilingual fonts, Barcode & QR Code fonts. Print barcode using barcode printer like Argox, TSC, etc.

It supports all latest technologies which include cloud hosting, smartphone, tablets, SMS, email, UHF RFID, payment gateway, etc. It also supports smart phone app for book search - MOPAC.

Usage Barcode System: The RCPIT Library uses a barcode-based circulation system that includes barcoded books, borrower cards, and barcode readers. Each user is issued a borrower card with a unique barcode, enabling quick and accurate identification during issue and return transactions.

This system ensures efficient circulation, minimizes manual errors, and maintains reliable usage records through the library management software.

Foreign Language and Quantitative Examination Learning Resource: The institute provides a wide range of quality learning resources, including physical books and online e-learning materials, to support students in foreign language proficiency and preparation for competitive examinations and higher studies.

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, N-LIST, NDL, and Springer.

Table 9.9.2: Last three years enhancement

Sr. No.	Details	2023-24	2024-25	2025-26
1	Title	185	132	48
2	Volume	1151	749	197
3	Print Journals	60	72	66
4	E-Resources	DELNET: E-Journals – 37,847; E-Books – 1,683 N-List: E-Journals – 3,537; E-Books – 31 lakh NDL: E-Journals – 3 lakh; E-Books – 7 lakh Springer E-Journals- 514 (Till on 2025) Copyleaks		

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.

Table No. 9.9.3: Foreign Language and Quantitative Examination Learning Resource

Sr. No.	Particulars	Details
1	Foreign Language Learning Resource Books	353
2	Foreign Language Online E- Learning Resource	85
3	Quantitative Examination (GATE, GPAT, MPSC & Other)	600

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)

N-List: - INFLIBNET:

- E-Book - 31 lakh
- E-Journals - 3537

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:

The Language Lab supports the development of communication skills, listening, speaking, reading, and writing abilities. It is used for improving professional communication, presentation skills, and employability readiness.

Foreign Language:

Foreign language learning specially (Japanese and German) resources are provided through print books and online platforms to help students acquire basic proficiency in international languages, supporting global employability and higher studies.

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.

Campus Credentials:

Campus credentials are provided to students for authenticated access to subscribed e-resources, digital library platforms, and online learning systems, ensuring secure and seamless utilization of academic resources.

Wipro TalentNext:

Wipro TalentNext is an industry-oriented learning initiative that provides students with access to technical training modules, skill development programs, and assessments to enhance employability and industry readiness.

Table No. 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://club.ndl.iitkgp.ac.in/club-home (https://club.ndl.iitkgp.ac.in/club-home)
3	OPAC	https://libcloud.mastersofterp.in/OPAC_V3/ (https://libcloud.mastersofterp.in/OPAC_V3/)
4	N-List	https://nlist.inflibnet.ac.in/ (https://nlist.inflibnet.ac.in/)
5	E- shodhganga	https://shodhganga.inflibnet.ac.in/ (https://shodhganga.inflibnet.ac.in/)
6	NPTEL	https://nptel.ac.in/ (https://nptel.ac.in/)
7	Swayam	https://swayam.gov.in/ (https://swayam.gov.in/)
8	Foreign Language CD	https://forms.gle/6xRkW5Lo1daX6ndd7 (https://forms.gle/6xRkW5Lo1daX6ndd7)
9	Plagiarism Software (Copy-leaks)	https://copyleaks.com/ (https://copyleaks.com/)
10	Springer Nature 3 Subject Collections	https://link.springer.com/brands/springer (https://link.springer.com/brands/springer)
11	Virtual Lab	https://iitb.vlabs.co.in/outreachportal/ (https://iitb.vlabs.co.in/outreachportal/)
12	Code-Chef:	https://www.codechef.com/college/dashboard (https://www.codechef.com/college/dashboard)
13	Language Lab: I Tell - Orell Talk Corporate Version	https://sesrcp.in/it/login.html (https://sesrcp.in/it/login.html)
14	Infosys Springboard	https://infyspringboard.onwingspan.com/web/en/page/home (https://infyspringboard.onwingspan.com/web/en/page/home)
15	Campus Credentials	https://code.campuscredentials.com/ (https://code.campuscredentials.com/)
16	Wipro TalentNext	https://talentnext.wipro.com/PBLApp/index.jsp (https://talentnext.wipro.com/PBLApp/index.jsp)

All print resources are classified (DDC) and catalogued using LIBMAN ILMS:

All print resources in the RCPIT Library are systematically classified using the Dewey Decimal Classification (DDC) scheme and catalogued through the LIBMAN Integrated Library Management System (ILMS), ensuring easy organization, quick retrieval, and efficient access to learning resources.

Print Resources Access during Library Working Hours:

Print resources in the RCPIT Library are accessible to students and faculty during regular library working hours. During examination periods, library hours are extended by two additional hours 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 for the period January to December 2025, highlighting the adequacy and relevance of scholarly resources available to support curriculum delivery, research activities, and continuous professional development.

Table No. 9.9.5: Statistics of Print Journals: National and international journals

Sr. No.	Departments	Total Journals	Total frequency
1	Computer Engineering	12	33
2	CSE (Data Science) Engineering	6	23
3	Artificial Intelligence & Machine Learning Engineering	6	23
4	Artificial Intelligence Data Science (AIDS)	6	17
5	Information Technology (IT)	6	19
6	Electronic and Telecommunication Engineering	12	39
7	Mechanical Engineering	6	18
8	Civil Engineering	6	28
9	Electrical Engineering	6	17

Number of users using library through e-access (OPAC) :

https://libcloud.mastersofterp.in/OPAC_V3/ (https://libcloud.mastersofterp.in/OPAC_V3/)

OPAC Monthly Login Number of Access- 1445

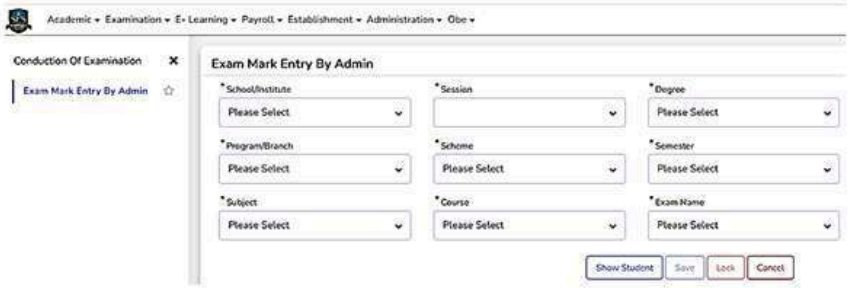
The RCPIT Digital Library actively supports teaching and self-learning by providing online access to syllabus copies, autonomous question papers, OPAC, e-databases, e-resources, newspaper cuttings, and foreign language books/CDs. Usage data shows maximum participation from Computer, Applied Science and Data Science departments. The library is primarily utilized by students (over 96%), highlighting its important role in academic preparation, examination support, and independent learning activities.

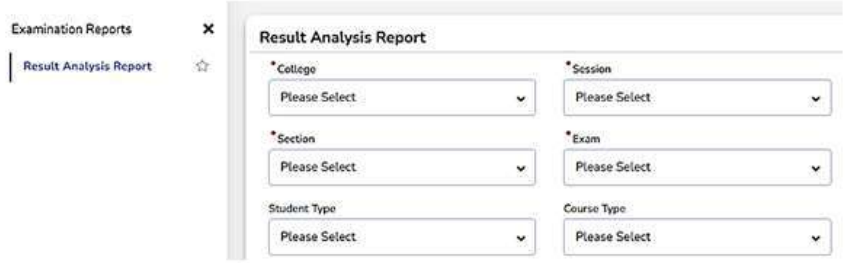
Institute Marks : 5.00

The institution has implemented a comprehensive Mastersoft Enterprise Resource Planning (ERP) system to ensure efficient academic administration, student support, transparency, and Outcome-Based Education (OBE) compliance. The ERP integrates all academic and administrative activities into a single digital platform with role-based access for students, faculty, administrators, and management.

Mastersoft Enterprise Resource Planning (ERP)

Student Support Module: The Student Support Module provides end-to-end services for students, including online admission, registration, attendance monitoring, mentoring, grievance Redressal, scholarships, placements, and hostel, transport, and feedback systems. Students and parents have real-time access to academic and attendance information, promoting transparency and student-centric learning.





- **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 Prime 2.1 ERP (TSS Gold)

The institute has implemented the Tally ERP 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

- Mastersoft ERP and Eduplus ERP manage admissions, academics, examinations, finance, HR, and payroll.
- Supports online admission, examination processing, faculty workload, and financial operations.

Learning Management and Academic Delivery

- Moodle LMS is used for course content delivery, assessments, and outcome-based learning.
- Enables blended learning with anytime access for students and faculty.

Digital Communication and Collaboration

- Microsoft 365 provides official email, virtual classrooms, and cloud-based collaboration.
- Promotes paperless communication and efficient documentation.

Library Automation and Knowledge Resources

- Koha ILMS automates library operations including circulation, cataloguing, and OPAC.
- Enhances digital access and effective utilization of library resources.

Attendance, Time, and Payroll Management

- Timelabs biometric system monitors attendance and integrates with HR and payroll.
- Ensures accurate tracking of working hours and leave records.

Admissions and Student Relationship Management

- Meritto (Education CRM) manages student enquiries, counselling, and admission analytics.
- Improves transparency, data-driven decisions, and stakeholder engagement.

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.

9.11 Initiatives and Implementation of Sustainable Development Goals (SDGs) (10) Total Marks 10.00

Institute Marks : 10.00

R. C. Patel Institute of Technology, Shirpur 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, carbon footprint mitigation, 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, governance oversight, 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 320 kW rooftop solar photovoltaic power plant to promote clean energy usage, supported by BEE star-rated equipment, 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, village adoption initiatives, and Unnat Bharat Abhiyan activities.

Health and social well-being are promoted through blood donation camps, health check-up camps, yoga and fitness awareness programs, eye donation campaigns, and public health awareness initiatives such as Nasha Mukti Bharat Abhiyan. 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 self-defense training programs for girls. Sustainability is further integrated into academics through SDG-mapped student projects addressing renewable energy, smart agriculture, environmental monitoring, waste management, and smart city applications, 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 reduction in carbon footprint and 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 Unnat Bharat Abhiyan 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, eye donation campaigns, and Nasha Mukti Bharat Abhiyan 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:** Self-defense training programs and 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 320 kW rooftop solar photovoltaic plant, LED lighting, and BEE star-rated equipment reduce carbon footprint and energy consumption.
- **SDG 11 – Sustainable Cities and Communities:** Village adoption, cleanliness drives, Unnat Bharat Abhiyan activities, and smart city–oriented student projects contribute to sustainable community development.
- **SDG 12 – Responsible Consumption and Production:** Bio-composting, 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, Unnat Bharat Abhiyan initiatives, health and sanitation drives, village adoption programs, 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 a reduction in carbon footprint, 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	320 kW rooftop solar PV plant under net-metering with MSEDCL	Renewable Energy	Clean energy adoption and sustainability awareness
2	CO_2 Emission Reduction	SDG 13	PO6, PO7	Carbon emission reduction through renewable energy usage	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

Sr. No.	Activity / Project Title	SDG(s) Mapped	PO Mapped	Description / Implementation Details	Application Area / Domain	Learning Outcome / Impact
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	Self-Defense Training for Girls	SDG 5	PO6, PO9	Skill-based safety and empowerment training	Gender Equality	Confidence building and teamwork
13	Special NSS Residential Camp (Karvand)	SDG 3, 4, 11, 17	PO6, PO9, PO10	7-day rural service and development camp	Community Service	Ethical responsibility and teamwork
14	Unnat Bharat Abhiyan – Plastic-Free Drive	SDG 12, 13, SDG 17	PO6, PO7	Community awareness on plastic reduction	Sustainability	Environmental responsibility
15	Smart Agriculture Monitoring System	SDG 2, 12, 13	PO1, PO2, PO3, PO5	Climate-based irrigation monitoring	Agriculture / IoT	Decision-making algorithms
16	All-in-One STEM Box	SDG 4, 9	PO1, PO2, PO3, PO5	Integrated electronics learning kit for school students	Education / STEM	Hands-on electronics and programming

Sr. No.	Activity / Project Title	SDG(s) Mapped	PO Mapped	Description / Implementation Details	Application Area / Domain	Learning Outcome / Impact
17	Suitcase Electric Vehicle for Physical Disabled	SDG 3, SDG 11, SDG 9, SDG 10	PO1–PO12, PSO2, PSO3	Portable suitcase-type electric vehicle designed to support mobility of physically disabled persons.	Electric Vehicle / Assistive Mobility	Improved accessibility and awareness of sustainable EV-based mobility solutions
18	Portable Electric Scooter	SDG 7, SDG 9, SDG 13	PO1–PO12, PSO1, PSO3	Compact portable electric scooter designed for eco-friendly short-distance transportation.	Electric Vehicle / Green Mobility	Promotes clean energy transportation and awareness of sustainable mobility solutions
19	CureConnect-Enterprise Edition	SDG 3	PO1 to PO12	Healthcare management platform designed to connect hospitals, doctors, patients	Healthcare Information Systems	Students understand enterprise web application development, system design
20	COLLAX: Online Coding Interview Platform	SDG 4	PO1 to PO12	Design system to conduct online technical interviews	Smart interview Platform	Conduct interviews seamlessly
21	Ganapati Visarjan Nirmalya Cleaning Problem at River	SDG 6 SDG 14	PO1–PO12, PSO1, PSO2	Design and fabrication of a Nirmalya collection system to reduce river pollution during Ganapati Visarjan.	Design and Fabrication	Reduces river pollution, improves water quality, protects aquatic life, and promotes eco-friendly festival practices.
22	3D Modeling and Drafting of Special Fastener	SDG 9 SDG 12	PO1–PO12 PSO1 PSO2	Design of a customized special fastener using 3D CAD modeling and drafting for specific industrial applications.	Machine Design	Promotes efficient design, reduces material waste, enhances product reliability, and supports sustainable manufacturing.

Sr. No.	Activity / Project Title	SDG(s) Mapped	PO Mapped	Description / Implementation Details	Application Area / Domain	Learning Outcome / Impact
23	IoT Based Water Network System	SDG 6, SDG 9, SDG 11	PO2, PO3, PO5, PO6, PO7, PO11	Development of an IoT-based water network monitoring system for leakage detection and efficient water management.	Water Resource	Water Management and Conservation
24	Sustainable Materials in Concrete with Partial Replacement of Cement Bagasse Ash	SDG 9, SDG 11, SDG 12:	PO1, PO2, PO4, PO7, PO12	Experimental study on partial replacement of cement with bagasse ash to develop sustainable concrete.	Sustainable Materials	Sustainable Materials
25	Student Feedback System for RCPIT	SDG 4	PO1 to PO12	Faculty feedback is taken from students in transparent way.	Application	Understanding Data Analytics
26	The Smart Car Parking System with IoT	SDG 9, SDG 11	PO1 to PO12	It provides automated solution to manage parking spaces efficiently	IoT	Understand the implementation of IoT-based smart parking systems

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

9.12 Innovative Educational Initiatives and Implementation (5) Total Marks 5.00

Institute Marks : 5.00

R. C. Patel Institute of Technology, Shirpur 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, which are mapped with curriculum courses and transferred as per institutional policy. This initiative enables students to learn from premier institutions such as IITs, IISc, and central universities, thereby enhancing academic mobility at the national level.

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, summer schools, 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) and MOOC-based learning platforms.

- 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, counselling, and financial assistance

Action Plan for Slow Learners

- Identification through diagnostic tests, 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.
- Action plan has been discussed, and its impact has been briefly explained in Criteria 2, Section 2.1 (I).

9.13 Faculty Performance Appraisal and Development System (FPADS (10) Total Marks 10.00

Institute Marks : 10.00

R. C. Patel Institute of Technology (RCPIT), Shirpur has established a structured and transparent Faculty Performance Appraisal and Development System (FPADS) to enhance teaching effectiveness, research productivity, professional growth, and institutional contribution. (Refer Figure 9.13.1)

The system ensures continuous faculty development through systematic evaluation, feedback, and targeted improvement initiatives. R. C. Patel Institute of Technology, Shirpur follows a structured self-appraisal system for faculty assessment comprising three categories:

- 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. Performance Appraisal 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

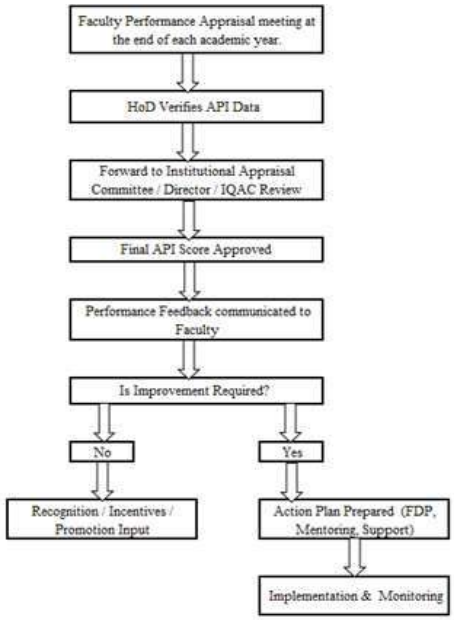


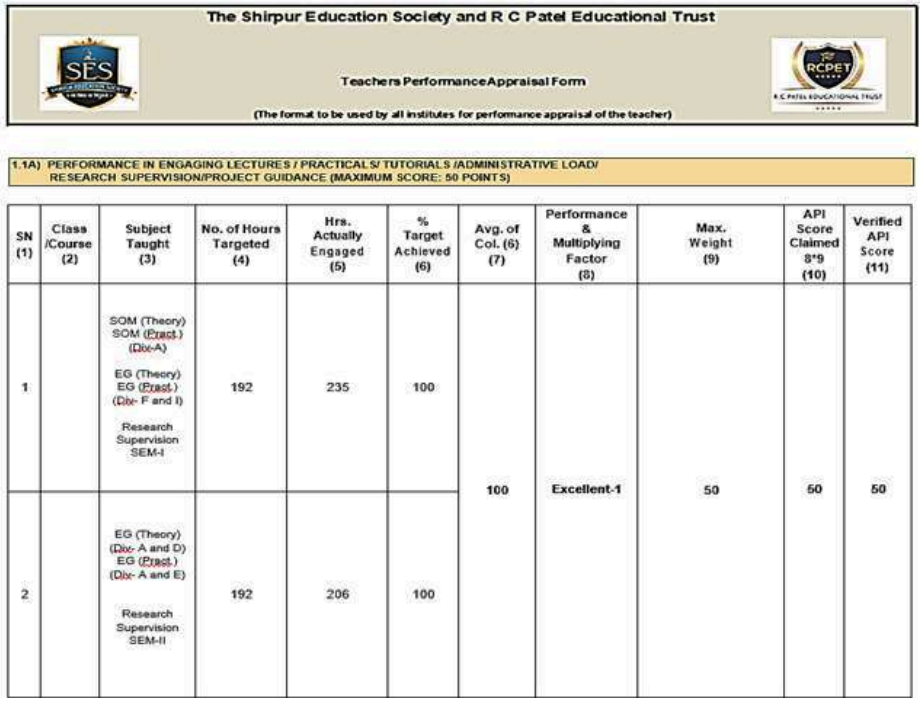
Figure 9.13.1: Faculty Performance Appraisal and Feedback Mechanism

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 and Director. The final API score is used for feedback, performance improvement and career advancement



The Shirpur Education Society and R C Patel Educational Trust

Teachers Performance Appraisal Form

(The format to be used by all institutes for performance appraisal of the teacher)

1.1A) PERFORMANCE IN ENGAGING LECTURES / PRACTICALS/ TUTORIALS /ADMINISTRATIVE LOAD/ RESEARCH SUPERVISION/PROJECT GUIDANCE (MAXIMUM SCORE: 50 POINTS)

SN (1)	Class /Course (2)	Subject Taught (3)	No. of Hours Targeted (4)	Hrs. Actually Engaged (5)	% Target Achieved (6)	Avg. of Col. (6) (7)	Performance & Multiplying Factor (8)	Max. Weight (9)	API Score Claimed 8*9 (10)	Verified API Score (11)
1		SOM (Theory) SOM (Pract.) (Div-A) EG (Theory) EG (Pract.) (Div- F and I) Research Supervision SEM-I	192	235	100	100	Excellent-1	50	50	50
2		EG (Theory) (Div- A and D) EG (Pract.) (Div- A and E) Research Supervision SEM-II	192	206	100					

1.1B) PERFORMANCE IN ATTENDANCE OF STUDENTS (MAXIMUM SCORE: 20 POINTS)

SN (1)	Class /Course (2)	Subject Taught (3)	Sum of Students Present (4)	Lectures Actually Engaged (5)	Students on Roll (6)	Avg. Attendance= (4)*100 (5)*(6) (7)	Avg. of Col. (7) (8)	Performance & Multiplying Factor (9)	Max. Weight (9)	API Score Claimed 8*9 (10)	Verified API Score (11)
1	SY [A]	SOM	782	24	58	56.178161	75.56071468	Excellent-1	20	20	20
2	FY [F]	EG	2163	39	63	88.034188					
3	FY [I]	EG	2040	38	63	85.213033					
4	FY [A]	EG	1922	46	62	67.391304					
5	FY [D]	EG	2347	46	63	80.986888					
6											
7											
8											
9											
10											

1.1C) PERFORMANCE IN RESULTS: (THEORY SUBJECT) (MAXIMUM SCORE: 20 POINTS)

SN (1)	Class /Course (2)	Subject Taught (3)	% Result of the Same Subject in the University (4)	% Result of the Same Subject in the Institute (5)	Column (5/4)*100 (6)	Avg. of Col. (6) (7)	Performance & Multiplying Factor (9)	Max. Weight (9)	API Score Claimed 8*9 (10)	Verified API Score (11)
1	SY [A]	SOM	45	45	100.00	100.00	Excellent-1	20	20	20
2	FY [F]	EG	90	90	100.00					
3	FY [I]	EG	86	86	100.00					
4										
5										
6										
7										
8										
9										
10										

1.2) LECTURES AND ACADEMIC DUTIES IN EXCESS OF UGC NORMS (MAXIMUM SCORE: 10POINTS)

SN (1)	Type of Activity (2)	No. of Students Benefited (3)	No. of Hours Engaged for the Activity (4)	API Score Claimed (Sum of Col. (4) /30)*2 (5)	Verified API Score (11)
1	Remedial Coaching SOM	20	6	10	10
2	Career Counseling Admission	57	72		
3	Competitive Exam Preparation				
4	General Counseling	240	48		
5	Soft Skill Development of the Student				
6	Extra Teaching Load		57		
7	LG Monitoring	13	48		
8	Add on Courses				
9	Any other Approved by Principal: SC ST Cell NSS	107	24		

Note:- Records to be maintained

1.3) PREPARATION OF STUDY MATERIAL AND RESOURCES (MAXIMUM SCORE: 20 POINTS)

SN	Study Material/ Resources	API Score Claimed	Verified API Score
1	Updated Lecture Notes (SOM, EG)	10	10
2	Lab Manuals (SOM, EG)	8	8
3	List of E Resource (SOM, EG)	2	2
4	Question Paper Solution (SOM, EG)	10	10
5	Any other Approved by Principal Blue Print for EG	5	5
TOTAL		20	20

1.4) INNOVATIVE TEACHING LEARNING METHODS (MAXIMUM SCORE: 20 POINTS)

SN	Study Material/ Resources	API Score Claimed	Verified API Score
1	Teacher Diary	10	10
2	To Prepare and use ICT based Teaching Material	5	5
3	Model / GD / Case Study (Points=5 for each case)	10	10
4	Any other Approved by Principal		
TOTAL		20	20

1.5) STUDENTS FEEDBACK (MAXIMUM SCORE: 15 POINTS)

SN	Class	No. of students involved in feedback	Feedback frequency per course	Methodology	API Score Claimed	API Score Verified
1	SY_A	50	1	Online feedback	15	15
2				Manual paper feedback		
3	FY	46	1	Online feedback	15	15
4				Manual paper feedback		
TOTAL					15	15

1.6) EXAMINATION RELATED WORK (MAXIMUM SCORE: 25 POINTS):

SN	Type of Examination Work	API Score Claimed	Verified API Score
1	Conduction of Test, Tutorials, Term work and their Evaluation and Maintaining Proper Records	10	10
2	Examination Work Assigned by University	5	5
3	Examination Work Assigned by Institute	10	10
TOTAL		25	25

CATEGORY-1	
TOTAL API SCORE CLAIMED	**180**
TOTAL API SCORE VERIFIED	**180**

CATEGORY 2: CO-CURRICULAR, EXTENSION AND PROFESSIONAL DEVELOPMENT RELATED ACTIVITIES (MAXIMUM SCORE: 70)

2.1) STUDENT RELATED CO-CURRICULAR, EXTENSION AND FIELD BASED ACTIVITIES (MAXIMUM SCORE: 30 POINTS)

SN	Name of Activity	API Score Allotted	API Score Claimed	Verified API Score
1	NSS/NCC Chief Program Officer	10	8	8
2	Other Program Officer	8		
3	Student Welfare Officer	5		
4	NET/SET Workshop Conduct(1 Week)	5		
5	Cultural Activities (Departmental/Institutional)	5	5	5
6	Lectures on Special Topics	5		
7	Presentations / Debate/ Elocution (Points=5 for each case)	5	5	5
8	Study Tour	5		
9	Avishkar (Student Guidance)	5		
10	Essay Competition	5		
11	Project Exhibition	5	5	5
12	Science Day Celebrations	5	3	3
13	Subject Association	5	5	5
14	Any other Activity Approved by Principal (Equal Opportunity Cell)	5	5	5
15	Any other Activity Approved by Principal (SES Examiner)	5	5	5
16	Any other Activity Approved by Principal (Food Inspection)	5	5	5
17	Any other Activity Approved by Principal (SC ST Cell)	5	5	5
18		5		
19		5		
20		5		
21		5		
TOTAL			30	30

2.2) CONTRIBUTION TO CORPORATE LIFE AND COMMUNITY WORK (MAXIMUM SCORE: 25 POINTS)

2.2A) COMMUNITY WORK (MAXIMUM SCORE: 5 POINTS)

SN	Name of Activity	API Score Allotted	API Score Claimed	Verified API Score
1	Blood Donation+ Small Family + Yoga Day+ Club Samarpan + Tande Sports+ Clus Saksham	5	5	5
TOTAL of 2.2A			5	5

2.2B) ADMINISTRATIVE AND ACADEMIC (MAXIMUM SCORE: 20 POINTS)

SN	Name of Activity	API Score Allotted	API Score Claimed	Verified API Score
1	Head /Dean/Rector	5		
2	Vice Principal	10		
3	Admission Committees (First Year,D2D and Departmental)	5	3	3
4	Converges-2023 (Dept. Co-ordinator)	5	5	5
5	Statutory Committees of the University	5		
6	Placement Activity	5	3	3
7	Academic Committee* (Class Teacher, Local Guardian, Time Table, Examination Competitive Exam Committee such as NET/SET/GATE etc) (Points=5 for each case).	5	5	5
8	NBA Committee	5	5	5
9	Happiness Matrix Scheme (Co-ordinator)	5	5	5
10	Annya Training for Faculty Members (Co-ordinator)	5	5	5
11	BoS Committee (Co-ordinator)	5	5	5
	TOTAL of 2.2B		20	20
	TOTAL of 2.2(2.2A & 2.2B)		25	25

2.3) PROFESSIONAL DEVELOPMENT ACTIVITIES (MAXIMUM SCORE: 15 POINTS)

SN	Name of Activity	API Score Allotted	API Score Claimed	Verified API Score
1	Participation in Seminar / Symposia / Conference ICRAMM-2022, ERP NBA NEP OBE IPR in RCPIT (**Active Participation: 2 Points, Attended: 1 Points**)	10	10	10
2	Convener/Organizing Secretary/ Chairman/ Member of professional Body (IAENG Membership) **(Points=5 for each case)**	5	5	5
3	Talks Delivered in Program Outside (at V N Naik, Shahada)	5	5	5
4	General Article Publication/ Editor of the conference proceeding /Reviewer of journal (Reviewer) **(Points=5 for each case)**	5	5	5
	TOTAL		15	15

CATEGORY-2	
TOTAL API SCORE CLAIMED	**70**
TOTAL API SCORE VERIFIED	**70**

CATEGORY-1 + CATEGORY-2	
TOTAL API SCORE CLAIMED	**250**
TOTAL API SCORE VERIFIED	**250**

CATEGORY 3: RESEARCH, PUBLICATIONS AND ACADEMIC CONTRIBUTION
**** (Refer Manual for the Marks)**

3.1) PUBLISHED PAPER IN JOURNAL (JOURNAL+CONFERENCE PROCEEDINGS) -MAXIMUM 30 POINTS)

SN	Title with Page No.	Journal	ISSN/ISBN No.	Peer Reviewed	Impact Factor	No. of Co-Authors	Whether you are the main author?	API Score Claimed	Verified API Score
1	PEEKYZONSCATS	Materials Today, Elsevier	22147853	YES	3.2	2	YES	12	12
2								0	
3								0	
4								0	
5								0	
6								0	
7								0	
8								0	
9								0	
10								0	
	TOTAL							12	12

3.2) ARTICLES/ CHAPTERS PUBLISHED IN BOOKS AND CONFERENCE PROCEEDINGS (MAXIMUM 25 POINTS)

3.2.1A) PUBLISHED BOOKS

SN	Title of book	Name of Publisher	National / International or Other	ISSN/ ISBN No.	No. of Co-Authors	Whether you are the main author	API Score Claimed	Verified API Score
1								
2								
3								0
	TOTAL of 3.2.1.A						0	0

3.2.1B) ARTICLES/CHAPTERS PUBLISHED IN BOOKS

SN	Title of book	Name of Publisher	National / International or Other	ISSN/ ISBN No.	No. of Chapters	API Score Claimed	Verified API Score
1						0	
2						0	
	TOTAL of 3.2.1.B					0	0
	TOTAL of 3.2.1					0	0

3.2.2A) PAPERS IN CONFERENCE PROCEEDINGS

SN	Title with Page no.	National / International or Other	Details of Conference Publication	Full Paper or Abstract	ISSN/ ISBN No.	No. of Co-Authors	Whether you are main author?	API Score Claimed	Verified API Score
1	PBMKGDGHGATR	YES	ICRAMM-2022	YES	22147893	2	YES	3	3
2								0	
3								0	
4								0	
5								0	
6								0	
7								0	
8								0	
9								0	
10								0	
TOTAL of 3.2.2.A								3	3

3.2.2B) AVISHKARAMMY OTHER

SN	Title of Paper/Poster/Model	Avishkar	Prize Won	No. of Co-Authors	Whether you are main author?	API Score Claimed	Verified API Score
1	Avishkar 2022	YES	NO	0	YES	3	3
2						0	
3						0	
4						0	
TOTAL of 3.2.2.B						3	3
TOTAL of 3.2.2 (This total will be added in 3.1 as a research publication)						6	6

3.3) ONGOING AND COMPLETED RESEARCH PROJECTS AND CONSULTANCIES (MAXIMUM 10 POINTS)

SN	Title	Agency	Period	Type of Project	Grant/ Amount Mobilized (Rs. Lakh)	Are You Principal Investigator?	No. of Co-Invest	API Score Claimed	Verified API Score
1								0	
2								0	
3								0	
4								0	
5								0	
TOTAL								0	0

3.4) RESEARCH GUIDANCE /QUALIFICATION (MAXIMUM 20 POINTS)

3.4A) RESEARCH GUIDANCE (MAXIMUM 10 POINTS)

SN	Research Guidance	Number Enrolled	Thesis Submitted	Degree Awarded	API Score Claimed	Verified API Score
1	M. Phil /ME/ M Pharm				0	
2	MCA/M.ed/MSC				0	
3	Ph.D. or Equivalent				0	
TOTAL of 3.4A					0	0

3.4B) RESEARCH QUALIFICATION (MAXIMUM 10POINTS)

SN	Qualification	Submitted	Awarded	API Score Claimed	API Score Claimed
1	Ph.D.	YES	YES	10	10
2	MC/M.Phil/M.pharm			0	
TOTAL of 3.4B				10	10
TOTAL of 3.4				10	10

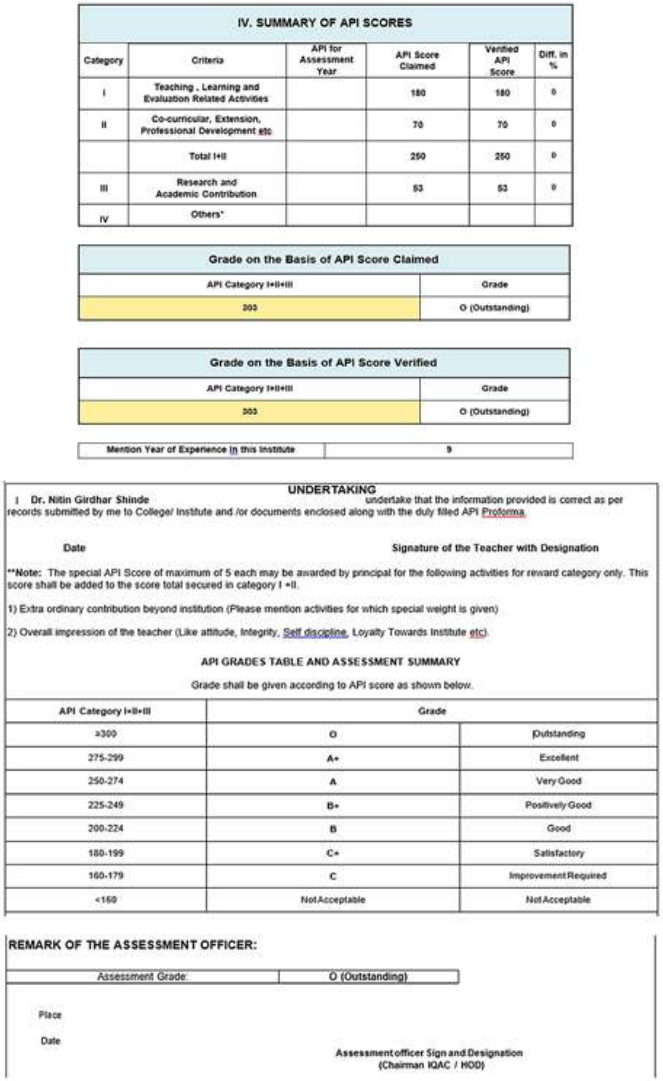
3.5) PATENTS/IPR (MAXIMUM 15 POINTS)

SN	Title	REG. NO.	Submitted	Granted	API Score Claimed	Verified API Score
1	SPPSAAENCOCFR	L-124775/2023	YES	No	10	10
2					0	
TOTAL					10	10

3.6) TECHNICAL /WORKSHOPS / SOFT SKILL DEVELOPMENT WORKSHOPS PARTICIPATION (MAXIMUM 15 POINTS)

SN	Programme	Duration (Mention in Days)	Organized By	API Score Claimed	Verified API Score
1	Electric Power Systems	4 Week	Coursera	15	15
2	Energy The Enterprise	4 Week	Coursera	15	15
3	Recent Trends in Advanced Manufacturing Technology	1 Week	D Y Patil College of Engineering, Akurdi, Pune	15	15
TOTAL				15	15

CATEGORY-3	
TOTAL API SCORE CLAIMED	53
TOTAL API SCORE VERIFIED	53



IV. SUMMARY OF API SCORES

Category	Criteria	API for Assessment Year	API Score Claimed	Verified API Score	Diff. in %
I	Teaching , Learning and Evaluation Related Activities		180	180	0
II	Co-curricular, Extension, Professional Development etc		70	70	0
	Total I+II		250	250	0
III	Research and Academic Contribution		53	53	0
IV	Others*				

Grade on the Basis of API Score Claimed

API Category I+II+III	Grade
303	O (Outstanding)

Grade on the Basis of API Score Verified

API Category I+II+III	Grade
303	O (Outstanding)

Mention Year of Experience in this Institute	9

UNDERTAKING

I Dr. Nitin Girdhar Shinde undertake that the information provided is correct as per records submitted by me to College/ Institute and /or documents enclosed along with the duly filled API Proforma.

Date

Signature of the Teacher with Designation

**Note: The special API Score of maximum of 5 each may be awarded by principal for the following activities for reward category only. This score shall be added to the score total secured in category I +II.

1) Extra ordinary contribution beyond institution (Please mention activities for which special weight is given)

2) Overall impression of the teacher (Like attitude, Integrity, Self discipline, Loyalty Towards Institute etc).

API GRADES TABLE AND ASSESSMENT SUMMARY

Grade shall be given according to API score as shown below.

API Category I+II+III	Grade	
≥300	O	Outstanding
275-299	A+	Excellent
250-274	A	Very Good
225-249	B+	Positively Good
200-224	B	Good
180-199	C+	Satisfactory
160-179	C	Improvement Required
<160	Not Acceptable	Not Acceptable

REMARK OF THE ASSESSMENT OFFICER:

Assessment Grade:	O (Outstanding)

Place

Date

Assessment officer Sign and Designation
(Chairman IQAC / HOD)

B. Implementation & Impact of faculty Appraisal system

The implementation of the Academic Performance Indicator (API) system at Institute has resulted in significant improvement in overall faculty performance and institutional quality as shown in Table 9.13.A.

Table 9.13.A: Academic Year-wise Percentage Distribution of Faculty Performance Grades

Year/ Grade	O	A+	A	B+	B	C+	C	D
24-25	14.29	57.14	25.00	2.68	0.00	0.00	0.00	0.89
23-24	16.67	53.70	28.70	0.93	0.00	0.00	0.00	0.00

22-23	4.12	54.64	41.24	0.00	0.00	0.00	0.00	0.00
21-22	3.70	30.86	60.49	4.94	0.00	0.00	0.00	0.00
20-21	2.27	56.82	32.95	7.95	0.00	0.00	0.00	0.00
19-20	2.00	33.00	43.00	20.00	2.00	0.00	0.00	0.00
18-19	4.50	36.04	45.05	10.81	2.70	0.00	0.90	0.00
17-18	3.60	36.04	44.14	11.71	1.80	2.70	0.00	0.00
16-17	0.83	26.67	38.33	25.83	6.67	1.67	0.00	0.00
15-16	0.00	15.00	24.17	55.00	5.00	0.00	0.00	0.83
14-15	0.83	3.31	23.97	54.55	17.36	0.00	0.00	0.00
13-14	0.00	4.62	3.08	6.15	20.00	49.23	16.92	0.00

Table 9.13.B: API Assessment Scaling (Faculty Performance Evaluation)

Grade	**Award & Reward**	**Recognition**	**Counselling**	**Advisory Note / Action Plan**
O (Outstanding)	Special incentive Best Faculty Award	Certificate of Excellence	Not Required	• Encourage leadership roles • Nominate for external awards, FDPs, funded projects
A+ (Excellent)	Performance-based incentive	Certificate of Appreciation	Not Required	• Encourage mentoring of junior faculty • Support for research & innovation
A (Very Good)	Merit Certificate	Department-level appreciation	Optional (if needed)	• Encourage improvement in research / pedagogy • Recommend FDP participation
B+ (Positively Good)	No monetary reward	Appreciation letter	If required	• Identify gaps • Suggest skill up gradation & training programs

Grade	Award & Reward	Recognition	Counselling	Advisory Note / Action Plan
B (Good)	Not Applicable	Not Applicable	Mandatory	• Issue advisory note • Improvement plan with timelines
C+ (Satisfactory)	Not Applicable	Not Applicable	Mandatory	• Formal counselling by HoD/Director • Short-term improvement targets
C (Poor)	Not Applicable	Not Applicable	Mandatory (Intensive)	• Written warning • Monitoring for next appraisal cycle
D (Very Poor)	Not Applicable	Not Applicable	Mandatory (Critical)	• Strict advisory / show-cause • Corrective action as per service rules

Over the years, there is a clear shift of faculty ratings towards higher performance bands (A and A+), indicating enhanced teaching effectiveness, increased research output, and greater professional engagement.

- Significant increase in the number of faculty members attaining A+ and A grades, indicating improved teaching and research performance.
- Enhanced quality of teaching–learning processes through systematic feedback, mentoring, and adoption of innovative pedagogies.
- Improved research output, including publications, projects, FDP participation, and professional contributions.
- Increased faculty motivation and engagement due to transparent evaluation, recognition, and career advancement opportunities.
- Identification and support of faculty requiring improvement through targeted action plans, FDPs, and mentoring.
- Overall continuous improvement in academic excellence and institutional performance.
- **Self-Reflection and Growth:** The self-appraisal system encourages faculty members to reflect on their own performance and identify areas for improvement. This self-reflection fosters personal growth and enables faculty members to take ownership of their professional development.
- **Motivation and Engagement:** The feedback received through the self-appraisal system can motivate faculty members to excel in their roles. The recognition and rewards for good performance further enhance motivation and engagement.
- **Targeted Development:** By providing specific feedback, faculty members are able to focus on areas requiring improvement. This targeted approach to professional development enables them to enhance their skills and competencies in a more effective manner.
- **Fair and Objective Evaluation:** The self-appraisal system, combined with the committees review, ensures a fair and objective evaluation of faculty performance. The involvement of multiple stakeholders helps minimize biases and ensures a comprehensive assessment.
- **Performance Enhancement**: The feedback and recommendations provided through the self-appraisal system enable faculty members to identify and address their weaknesses. This, in turn, leads to continuous performance enhancement and contributes to the overall improvement of teaching and research quality
- **Retention and Career Advancement:** The self-appraisal system, coupled with promotions through a career advancement scheme, provides faculty members with opportunities for growth and advancement within the organization. This can contribute to increased job satisfaction and retention.

9.14 Outreach Activities (5) Total Marks 5.00

Institute Marks : 5.00

RCPIT undertakes a wide range of outreach activities aimed at community development, social awareness, and experiential learning. Under initiatives such as Unnat Bharat Abhiyan (UBA), students adopt nearby villages and work closely with local communities to identify and address issues related to sanitation, water conservation, renewable energy, education, and digital literacy. These activities help students develop problem-solving skills while contributing to rural development.

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, students collaborate with NGOs, local bodies, and government agencies to conduct technical awareness programs, skill development workshops, and sustainability-oriented projects. 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 and chapters such as Akatsuki Coding Club, GDGoC, Glitchverse Gaming Tech Club, Unstop Igniters Club, Aakritix, Fetch.AI, Energy Club, Communicado, Data Polaris, Commexus, ACM Student Chapter, NSS, E-Builder, RoboTEMB Club, CESA, RCPIT-Wings, 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, PO12).

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:

Table 9.14.1: SDG-Mapped NSS Outreach and Extension sample Activities

Sr. No	**Name & Details of Activity**	**Organized By**	**A.Y.**	**Date/ Duration**	**Relevant SDG(s)**
1	Tree Plantation Drives	NSS	24-25	09/12/2024	SDG 13, SDG 15
2	Swachh Bharat Abhiyan (Cleanliness Drives)	NSS	24-25	17/09/2024	SDG 3, SDG 6, SDG 11
3	Blood Donation Camps	NSS	24-25	14/09/2024	SDG 3
4	Health Check-up Camps	NSS	24-25	03/04/2025	SDG 3
5	Water Conservation Activities	NSS	24-25	03/11/2024	SDG 6

Sr. No	Name & Details of Activity	Organized By	A.Y.	Date/ Duration	Relevant SDG(s)
6	Village Adoption Programs	NSS	24-25	03/07/2024	SDG 1, SDG 11
7	Literacy & Education Awareness Programs	NSS	24-25	03/11/2025	SDG 4
8	National Voters' Awareness Programs	NSS	24-25	17/09/2024	SDG 16
9	Yoga & Fitness Awareness Camps	NSS	24-25	21/06/2025	SDG 3
10	Constitution Day	NSS	24-25	26/11/2024	SDG 16
11	National Unity Day Activities	NSS	24-25	31/10/2025	SDG 16
12	Special NSS Camps (7-Day Residential Camps) – Karvand village	NSS	24-25	07/03/2025 To 13/03/2025	SDG 3, SDG 4, SDG 11, SDG 17
13	Plastic-Free Campus Campaigns (Swachhata Abhiyan Rally)- Shivpuran place- Kravand	NSS	24-25	12-09-2024	SDG 3, SDG 6, SDG 11
14	Public Health Awareness Campaigns (Nasha Mukti Bharat abhiyan program pledge program and rally)	NSS	24-25	12/8/2024 To 15/08/2024	SDG 3
15	Eye Donation companion "Netradan"	NSS	24-25	25/02/2025	SDG 3
16	Self Defense Training for the girls	NSS	24-25	10/10/2024	SDG 5

Sr. No	Name & Details of Activity	Organized By	A.Y.	Date/ Duration	Relevant SDG(s)
17	Literacy & Education Awareness Programs	NSS	24-25	15/10/2024	SDG 4
18	Digital Poster Making	Fetch.ai	25-26	11/09/2025	SDG 12, SDG 13
19	GlitchVerse Gaming Tech Club Inaugration and Expert Session	GlitchVerse Gaming Tech Club	25-26	6/10/2025	SDG 4, SDG 9, SDG 17
20	Workshop by GDGoC Think in C	Google Developer Groups on Campus	25-26	07/10/2025	SDG 4, SDG 9
21	Sustainable Energy Solutions Hackathon 23	Energy Club	23-24	2/11/2023	SDG 7, SDG 9, SDG 11, SDG 12, SDG 13
22	Poster Making Competition on Energy Sustainability and Green Innovations	Energy Club	25-26	04/10/2025	SDG 7, SDG 12, SDG 13
23	Microcontroller and Sensors Workshop	Energy Club	25-26	14/10/2025	SDG 4, SDG 9, SDG 11
24	Tree Plantation	CESA	23-24	19/08/2025	SDG 13, SDG 15
25	Stationary note book& pen donate to school STUDENTS	CESA	23-24	26/01/2024	SDG 6
26	Jal saptha (Awairness Programme)	CESA	23-24	26/01/2024	SDG 6 SDG 13
27	Engineers Day	CESA	23-24	15/09/2024	SDG 4 SDG 9

Sr. No	Name & Details of Activity	Organized By	A.Y.	Date/ Duration	Relevant SDG(s)
28	Constitution Day Celebration	NSS	23-24	26/11/2023	SDG 8
29	Engineers Day	CESA	24-25	15/09/2025	SDG 8 SDG 9
30	Maharashtra Day & Traditional Day Celebration	RCPIT	24-25	01/05/2025	SDG 4 SDG 8 SDG 11
31	Mother's Day Celebration	Student Affairs Department	22-23	9/05/2022	SDG 3 SDG 4 SDG 5
32	Visit to "SAMABHAV – International Film Festival"	MAVA	22-23	18/9/2023	SDG 5 SDG 10 SDG 16
33	Expert Talk on "Journey of Life – Know Thyself"	RCPIT	22-23	8/06/2022	SDG 3 SDG 4
34	Yoga Month Celebration & International Yoga Day 2022 *"Yoga for Humanity"*.	RCPIT	22-23	21/06/2022	SDG 3 SDG 4:
35	Garba Night & Dandiya Raas Celebration (Navratri 2022)	RCPIT	22-23	22/09/2022 To 26/09/2022	SDG 4 SDG 11:
36	SAMARPAN – Distribution of fruits & Biscuits at Government Hospital	RCPIT	22-23	15/09/2022	SDG 3 SDG 10
37	Grain & Ration Donation Drive at Residential School, Thalner	RCPIT	22-23	28/11/2022	SDG 2 SDG 10
38	Awareness of Menstrual Hygiene & Distribution of Sanitary Pads	Student Affairs / Social Outreach	22-23	3/06/2022	SDG 3

Sr. No	Name & Details of Activity	Organized By	A.Y.	Date/ Duration	Relevant SDG(s)
39	Tree Plantation Drive on “Azadi Ka Amrit Mahotsav”	RCPIT	22-23	13/08/2022	SDG 13 SDG 15
40	VIHANGAM 2023 – Bird Feeder Making & Placement Drive	RCPIT	22-23	25/04/2023	SDG 13 SDG 15
41	Kargil Vijay Diwas Celebration	RCPIT	23-24	26/07/2023	SDG 13 SDG 16
42	Women’s Day Outreach – Menstrual Health Awareness & Free Sanitary Pad Distribution	RCPIT	23-24	7/04/2024	SDG 3 SDG 5
43	Tree Plantation Program at Borkheda	RCPIT	23-24	27/08/2023	SDG 13 SDG 15
44	International Women’s Day Session on Sexual Harassment at Workplace	RCPIT	23-24	8/03/2024	SDG 5 SDG 16
45	Women’s Premier League (WPL) 2024 – Cricket Tournament Participation- Women’s Premier League 2024	MPCT Shirpur & Astitva Foundation	23-24	5/03/2024 To 09/03/2024	SDG 3 SDG 5
46	BANDISH – A Musical Event	RCPIT	23-24	10/08/2024	SDG 4 SDG 11
47	COLOURWAVE – Drawing Competition (Theme: Indian Festivals)	RCPIT	24-25	28/02/2025	SDG 4 SDG 11
48	Sufi Night – A Celebration of Spiritual Music & Harmony	RCPIT	24-25	26/02/2024	SDG 4 SDG 11

Sr. No	Name & Details of Activity	Organized By	A.Y.	Date/ Duration	Relevant SDG(s)
49	UTSARG 2K25 – Five-Day Cultural Extravaganza	RCPIT	24-25	11/02/2025 To 15/02/2025	SDG 4 SDG 11
50	International Women's Day Celebration – Fun Games for Ladies Faculty	RCPIT	24-25	8/03/2025	SDG 5 SDG 3
51	Engineer's Cricket Championship (ECC) 2024.	RCPIT	24-25	28/08/2024	SDG 3

Students actively participated in community service programs such as cleanliness drives, health and hygiene awareness campaigns, blood donation camps, tree plantation drives, and road safety awareness programs in nearby villages and urban localities. These activities helped students develop leadership skills, teamwork, social responsibility, and ethical values.

Nasha-Mukta Bharat Abhiyan Awareness & Rally

Cleanliness drives

Blood Donation

Unnat Bharat Abhiyan (UBA): Under the Unnat Bharat Abhiyan initiative, students adopted nearby villages and conducted need-based surveys focusing on sanitation, education, water management, digital literacy, and renewable energy awareness. Students interacted directly with villagers to identify local challenges and propose feasible technical and social solutions.On Unnat Bharat Abhiyan Foundation Day, R. C. Patel Institute of Technology, Shirpur organized a Plastic-Free Environment Awareness Camp at its adopted village — Rampur.

As part of this initiative, an awareness drive was conducted to promote environmental sustainability. Cloth bags were also distributed to encourage the reduction of plastic use and inspire the villagers to adopt eco-friendly practices.

Social Internship: A digital literacy and education support Programme was organized at Karvand Village ZP School to enhance rural students' learning skills and awareness of basic digital tools.

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.
- Positive social impact on adopted villages through cleanliness drives, plastic-free campaigns, digital literacy programs, health awareness activities, and education support initiatives.
- Improved health, hygiene, and environmental awareness among community members due to campaigns like Nasha-Mukta Bharat Abhiyan, Swachh Bharat Abhiyan, and tree plantation drives.
- Strengthened institution–society linkage under Unnat Bharat Abhiyan by addressing local needs through participatory surveys and sustainable solutions.
- Rural school students benefited from digital literacy and educational support, contributing directly to SDG 4 (Quality Education).
- 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	Graduates will apply core Civil Engineering principles to survey, plan, analyze, design, and manage infrastructure systems using innovative, sustainable, and efficient approaches for real-world challenges.
PSO2	Graduates will uphold ethical professional practice, collaborate effectively in teams, and communicate clearly to enhance employability skills while fostering entrepreneurial ventures in diverse civil engineering contexts.

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.

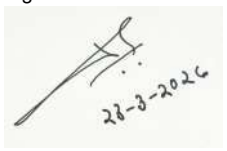
Head of the Institute

Prof. Dr. Jayantrao Bhaurao

Name : Patil

Designation : Director

Signature :



Seal of The Institution :

Place : Shirpur

Date : 23-03-2026 12:07:05